

Southeastern Section of the AUA, Inc.
83RD ANNUAL MEETING
MARCH 13 - 16, 2019
Arizona Biltmore, A Waldorf Astoria Resort | Phoenix, AZ

PROGRAM BOOK



SOUTHEASTERN SECTION OF THE AUA, INC.



Scott B. Sellinger, MD, FACS

2018 – 2019 President

Southeastern Section of the AUA, Inc.

Table of Contents

Program Schedule at a Glance	2
Map of Venue	6
Mission Statement	7
Educational Needs & Objectives	7
Accreditation Statement	8
AUA Participant Information & Policies.....	9
Contact Information	10
Officers, Board of Directors, and Special & Standing Committees.....	11
Numerical Membership of the SESAUA	16
General Meeting Information.....	17
Evening Functions	18
Optional Events	19
Industry Satellite Symposium Events	20
2019 Exhibits	22
Industry Partners	23
Named Lectures and Contests.....	24
Full Scientific Program.....	26
Wednesday, March 13, 2019.....	26
Thursday, March 14, 2019.....	38
Friday, March 15, 2019.....	60
Saturday, March 16, 2019	79
Participant Index.....	89
Podiums.....	97
Posters	171
Annual Business Meeting Agenda.....	304
Minutes of the 82nd Annual Business Meeting.....	305
Bylaws	309
Necrology Report.....	325
Preliminary Treasurer's Report.....	326
Membership Candidates and Transfers.....	328
Report of the SESAUA Representative to the AUA Board of Directors	330
Roster of the State Societies and Officers.....	332
Previous Officers and Annual Meeting Sites	333
Future SESAUA Meetings	342

Program Schedule at a Glance

All sessions are located in **FLW Salons G-J** unless otherwise noted.

WEDNESDAY, MARCH 13, 2019					
7:00 a.m. 5:00 p.m.	Registration/Information Desk Open: <i>FLW Registration Desk</i>				
7:00 a.m. 11:00 a.m.	Board of Directors Meeting: <i>McArthur 5-7</i>				
7:30 a.m. 10:30 a.m.	Spouse/Guest Hospitality Suite Open: <i>Taliesin</i>				
10:30 a.m. 5:00 p.m.	Speaker Ready Room Open: <i>FLW McDowell</i>				
11:00 a.m.	Industry Sponsored Lunch Symposium: <i>McArthur 4</i>				
12:05 p.m.	Opening Remarks - SESAU President				
12:15 p.m.	Panel Discussion: Office Female Urology: A Day in the Life				
1:30 p.m.	State-of-the-Art Lecture: BPH/BOO in 2019: What I Do When?				
2:15 p.m.	Panel Discussion: The Narcotic/Opioid Crisis and Urology				
3:15 p.m.	Break: <i>FLW Foyer</i>				
3:30 p.m.	Socioeconomics and Health Services Research Podium Session <i>FLW Salons G-J</i>	Bladder Cancer Podium Session <i>McArthur 1-3</i>	Nephrolithiasis Poster Session <i>McArthur 5</i>	Andrology I Poster Session <i>McArthur 6</i>	4:00 - 5:00
4:00 p.m.					Video Session I <i>McArthur 4</i>

Program Schedule at a Glance

All sessions are located in **FLW Salons G-J** unless otherwise noted.

THURSDAY, MARCH 14, 2019					
6:00 a.m. 5:10 p.m.	Registration/Information Desk Open: <i>FLW Registration Desk</i>				
6:00 a.m. 5:10 p.m.	Speaker Ready Room Open: <i>FLW McDowell</i>				
7:30 a.m. 10:30 a.m.	Spouse/Guest Hospitality Suite Open: <i>Taliesin</i>				
9:00 a.m. 4:00 p.m.	Exhibit Hall Open: <i>FLW Salons A-F</i>				
10:00 a.m. 11:30 a.m.	Arizona Biltmore History Tour				
6:00 p.m. 8:00 p.m.	Welcome Reception: <i>FLW Salons A-F</i>				
7:00 a.m.	Imaging, Simulation, and Training Poster Session <i>McArthur 5</i>	Prostate Cancer Poster Session <i>McArthur 6</i>	Urethral Disease and Voiding Dysfunction Podium Session <i>FLW Salons G-J</i>	7:30 - 8:30 Kidney Cancer Podium Session <i>McArthur 1-3</i>	
8:30 a.m.	AUA Course of Choice Lecture: Management of Non-Muscle Invasive Bladder Cancer: Practical Solutions for Common Problems				
9:30 a.m.	SESAUA Update				
9:45 a.m.	Break - Visit Exhibits: <i>FLW Salons A-F</i>				
10:15 a.m.	Panel Discussion: Bladder Cancer 2019				
11:30 a.m.	State-of-the-Art Lecture: Prostate Cancer Active Surveillance and MRI-Targeted Biopsy				
12:15 p.m.	Industry Sponsored Lunch Symposium: <i>McArthur 1-3</i>		Industry Sponsored Lunch Symposium: <i>McArthur 4</i>		
1:30 p.m.	Endourology Sub-Plenary Session <i>FLW Salons G-J</i>	1:45 - 5:00		3:10 - 3:45	
		Pediatric Sub-Plenary Session I <i>McArthur 4</i>	Testis Cancer/ Penile Cancer Sub-Plenary Session <i>McArthur 1-3</i>	Break – Visit Exhibits <i>FLW Salons A-F</i>	
				3:50 – 5:00	
				Health Services Research Poster Session <i>McArthur 5</i>	Basic Science Research Poster Session <i>McArthur 6</i>
5:00 p.m.	The Evolution of Outpatient Lithotripsy and Its Origin in the Southeastern Section				

Program Schedule at a Glance

All sessions are located in **FLW Salons G-J** unless otherwise noted.

FRIDAY, MARCH 15, 2019				
6:30 a.m. 6:00 p.m.	Registration/Information Desk Open: <i>FLW Registration Desk</i>			
6:30 a.m. 6:00 p.m.	Speaker Ready Room Open: <i>FLW McDowell</i>			
7:30 a.m. 10:30 a.m.	Spouse/Guest Hospitality Suite Open: <i>Taliesin</i>			
9:00 a.m. 4:00 p.m.	Exhibit Hall Open: <i>FLW Salons A-F</i>			
6:30 p.m. 10:00 p.m.	Residents Night Out - Corona Ranch			
7:00 a.m.	Urologic Oncology I Poster Session <i>McArthur 5</i>	Outpatient Urology Poster Session <i>McArthur 6</i>	Prostate Cancer Podium Session <i>FLW Salons G-J</i>	Sexual Dysfunction and Infertility Podium Session <i>McArthur 1-3</i>
8:00 a.m.	Montague Boyd Essay Contest			
8:30 a.m.	Gee-Dineen Health Policy Forum 1			
10:30 a.m.	Break - Visit Exhibits: <i>FLW Salons A-F</i>			
11:00 a.m.	Ballenger Lecture: Identification of Inherited Prostate Cancer Risk			
11:45 a.m.	Best Video Viewing and Award Presentation			
11:55 a.m.	Industry Sponsored Lunch Symposium: <i>McArthur 1-3</i>		Industry Sponsored Lunch Symposium: <i>McArthur 4</i>	
1:10 p.m.	State-of-the-Art Lecture: Genetics in Prostate Cancer			
1:40 p.m.	Presidential Lecture: Urolithiasis 2019 - Keys for the Practicing Urologist			
2:20 p.m.	Break - Visit Exhibits: <i>FLW Salons A-F</i>			
2:50 p.m.	Panel Discussion: Prosthetics in Urology 2019			
3:45 p.m.	Panel Discussion: How to Use Genetic Tests in Urologic Oncology <i>FLW Salons G-J</i>			3:45 – 5:30
Pediatric Sub-Plenary Session II				
4:45 p.m.	International Volunteerism Program: Resident Reports' <i>FLW Salons G-J</i>			3:45 Pediatric Poster Session <i>McArthur 5</i>
5:00 p.m.	5:00 – 6:00			4:15 Ask the Experts <i>McArthur 4</i>
	Urologic Oncology II Poster Session <i>McArthur 5</i>	Miscellaneous and Urologic Reconstruction Poster Session <i>McArthur 6</i>		

Program Schedule at a Glance

All sessions are located in **FLW Salons G-J** unless otherwise noted.

SATURDAY, MARCH 16, 2019				
6:30 a.m. 1:00 p.m.	Registration/Information Desk Open: <i>FLW Registration Desk</i>			
6:30 a.m. 1:00 p.m.	Speaker Ready Room Open: <i>FLW McDowell</i>			
7:30 a.m. 10:30 a.m.	Spouse/Guest Hospitality Suite Open: <i>Taliesin</i>			
9:00 a.m. 11:30 a.m.	Exhibit Hall Open: <i>FLW Salons A-F</i>			
10:00 a.m. 11:30 a.m.	Arizona Biltmore History Tour			
12:30 p.m. 4:00 p.m.	Desert Botanical Garden Tour			
6:30 p.m. 10:00 p.m.	SESAUA Annual Reception and Banquet: <i>Gold Patio and Room</i>			
7:00 a.m.	Kidney Cancer Poster Session <i>McArthur 5</i>	Andrology II Poster Session <i>McArthur 6</i>	Video Session II <i>McArthur 1-3</i>	Prostate – Benign and Malignant Podium Session <i>FLW Salons G-J</i>
8:00 a.m.	Gee-Dineen Health Policy Forum 2			
9:30 a.m.	ABU Update			
9:45 a.m.	Break-Visit Exhibits: <i>FLW Salons A-F</i>			
10:15 a.m.	SESAUA Annual Business Meeting			
10:45 a.m.	Resident Quiz Bowl			
11:30 a.m.	AUA Guidelines Update 2019			
11:45 a.m.	AUA Update			
12:00 p.m.	T. Leon Howard Imaging Session			
1:00 p.m.	Industry Sponsored Lunch Symposium: <i>McArthur 4</i>			
2:00 p.m.	Industry Sponsored Course: <i>McArthur 1-3</i>			

Mission Statement

To be the professional organization in the southeastern United States that fosters the highest standards of urologic care through education, research and socioeconomic awareness. The Southeastern Section of the American Urological Association goals:

- Support excellence in urologic care of patients
- Education of urologists
- Encourage research
- Forum for presentation of:
 - Clinical interest
 - Clinical and basic research
 - Support the AUA in healthcare policy and share ideas with the AUA, Inc.

Scientific Program

SESAUA Secretary, S. Duke Herrell III, MD, FACS, has planned a dynamic program that is certain to provide practicing urologists cutting-edge information. Detailed information about the scientific program begins on page 26.

Educational Needs & Objectives

Educational Needs

The Secretary of the SESAUA, S. Duke Herrell III, MD, FACS, consulted with other members of the Committee on Education and Science and the Executive Committee members including SESAUA Past President, Jerry E. Jackson, MD, FACS; President, Scott B. Sellinger, MD, FACS; and Chair, Committee on Education and Science, Chad W.M. Ritenour, MD, regarding the needs we are attempting to fulfill through our annual scientific program. It was agreed by the above committee members, Section Officers and Chair, Office of Education of the AUA that there continues to be significant educational needs for our annual meeting and scientific program.

As patient care continues to evolve with the constant expansion of data, physicians require ongoing education to optimize current medical practice. Practicing urologists have difficulty in keeping up-to-date on new practice guidelines, technologies, and medical treatments. Therefore, activities related to areas of clinical focus and practice management are crucial to address gaps in knowledge and understanding.

Educational Objectives

At the conclusion of the 83rd Annual Meeting of the SESAUA, attendees will be able to:

- Apply guidelines for evaluation and management of urologic oncology patients, including those with prostate, bladder, kidney and other cancers.
- Discuss medical and surgical management for patients presenting with nephrolithiasis.
- Identify strategies to employ in pediatric urologic patients presenting with common conditions.
- Describe recent changes in health policy impacting urologic care.
- Demonstrate approaches for dealing with patients with chronic pain as part of decreasing unnecessary prescriptions for opioid medications.
- Report up-to-date information for managing patients with urologic conditions in the outpatient setting.
- Integrate new technologies for surgical management of urologic patients.

Accreditation Statement

Accreditation

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Urological Association (AUA) and the Southeastern Section of the AUA, Inc. The AUA is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation: The American Urological Association designates this live activity for a maximum of **26.25 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other Learners: The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for *AMA PRA Category 1 Credit™*.

Evidence Based Content: It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

AUA Disclosure Policy: All persons in a position to control the content of an educational activity (i.e., activity planners, presenters, authors) are required to disclose to the provider any relevant financial relationships with any commercial interest. The AUA must determine if the individual's relationships may influence the educational content and resolve any conflicts of interest prior to the commencement of the educational activity. The intent of this disclosure is not to prevent individuals with relevant financial relationships from participating, but rather to provide learners information with which they can make their own judgments.

Disclosure Report: The disclosure report for this meeting may be found online at the following link: <http://sesaua.org/FacultyDisclosures2019>

If you prefer a printed copy of the disclosure report, please request one at the registration desk.

Resolution of Identified Conflict of Interest: All disclosures will be reviewed by the program/course directors or editors for identification of conflicts of interest. Peer reviewers, working with the program directors and/or editors, will document the mechanism(s) for management and resolution of the conflict of interest and final approval of the activity will be documented prior to implementation. Any of the mechanisms below can/will be used to resolve conflict of interest:

- Peer review for valid, evidence-based content of all materials associated with an educational activity by the course/program director, editor, and/or Education Conflict of Interest Review Work Group or its subgroup.
- Limit content to evidence with no recommendations
- Introduction of a debate format with an unbiased moderator (point-counterpoint)
- Inclusion of moderated panel discussion
- Publication of a parallel or rebuttal article for an article that is felt to be biased
- Limit equipment representatives to providing logistics and operation support only in procedural demonstrations
- Divestiture of the relationship by faculty

Off-label or Unapproved Use of Drugs or Devices: The audience is advised that this continuing medical education activity may contain reference(s) to off-label or unapproved uses of drugs or devices. Please consult the prescribing information for full disclosure of approved uses.

AUA Participant Information & Policies

Disclaimer: The opinions and recommendations expressed by faculty, authors and other experts whose input is included in this program are their own and do not necessarily represent the viewpoint of the AUA.

Consent to Use of Photographic Images: Attendance at or participation in AUA meetings and other activities constitutes an agreement by the registrant to AUA's use and distribution (both now and in the future) of the attendee's image or voice in photographs and electronic reproductions of such meetings and activities.

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Special Assistance/Dietary Needs: The American Urological Association complies with the Americans with Disabilities Act §12112(a). If any participant is in need of special assistance or has any dietary restrictions, please see the registration desk.

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Filming/Photography Statement

No attendee/visitor at the SESAUA 83rd Annual Meeting may record, film, tape, photograph, interview or use any other such media during any presentation, display or exhibit without the express, advance approval of the SESAUA Executive Director. This policy applies to all SESAUA members, nonmembers, guests and exhibitors, as well as members of the print, online or broadcast media.

Contact Information

To expedite the business of the Southeastern Section of the American Urological Association, Inc., inquiries should be referred to the SESAUA Secretary or the SESAUA office as follows:

SESAUA Secretary:

S. Duke Herrell III, MD, FACS
Vanderbilt University Medical Center
Dept. of Urology
A-1302 MCN
1161 21st Ave South
Nashville, TN 37232-2765
(615) 343-1317 Fax: (615) 322-8990
duke.herrell@vumc.org

- All inquiries and information regarding the scientific program of the annual meeting.

SESAUA Office:

Two Woodfield Lake
1100 E. Woodfield Road, Suite 350
Schaumburg, IL 60173-5121
Phone: (847) 969-0248
Fax: (847) 517-7229
Email: info@sesaua.org
Executive Director: Wendy J. Weiser
Associate Director: Samantha N. Panicola

- Inquiries about or applications for membership in the SESAUA and the AUA
- Membership roster information
- *(changes/corrections to the present listing)*
- Any requests or information that one may wish to communicate
- All inquiries and reports regarding the standing and special committees of the SESAUA
- All matters needing the attention of or action by the Executive Committee

Officers, Board of Directors, and Special & Standing Committees

2018 – 2019

OFFICERS	TERM EXPIRES
President	
Scott B. Sellinger, MD, FACS; Tallahassee, FL	2019
President-Elect	
Glenn M. Preminger, MD; Durham, NC	2019
Secretary	
S. Duke Herrell III, MD, FACS; Nashville, TN	2021
Treasurer	
David M. Kraebber, MD; Wilmington, NC	2020
Past President	
Jerry E. Jackson, MD, FACS; Sumter, SC	2019
Historian	
Paul W.F. Coughlin, MD, FACS; High Point, NC	2020
Member at Large	
Lorie G. Fleck, MD; Mobile, AL	2020
Chair, Committee on Education and Science	
Chad W.M. Ritenour, MD; Atlanta, GA	2021
2019 Program Planning Committee	
S. Duke Herrell III, MD, FACS (Program Chair); Nashville, TN	2019
Lorie G. Fleck, MD; Mobile, AL	2019
Jerry E. Jackson, MD, FACS; Sumter, SC	2019
David M. Kraebber, MD; Wilmington, NC	2019
Glenn M. Preminger, MD; Durham, NC	2019
Chad W.M. Ritenour, MD; Atlanta, GA	2019
Scott B. Sellinger, MD, FACS; Tallahassee, FL	2019

REGIONAL REPRESENTATIVES

Alabama Representatives

Jared M. Cox, MD; Birmingham, AL	2021
Tracey S. Wilson, MD, FACS; Birmingham, AL	2021

Alabama Alternate Representatives

Lauren N. Hendrix, MD; Gadsden, AL	2021
John Patrick Selph, MD; Birmingham, AL	2021

Florida Representatives

Adam J. Ball, MD; Port St. Lucie, FL	2021
Lawrence S. Hakim, MD, FACS; Weston, FL	2021
Kevin Ki-Dong Lee, MD, FACS; Winter Haven, FL	2020
Vipul R. Patel, MD, FACS; Celebration, FL	2019
Christopher R. Williams, MD; Jacksonville, FL	2020

Florida Alternate Representatives

Gregory A. Broderick, MD; Jacksonville, FL	2021
Paul L. Crispen, MD; Gainesville, FL	2021
Michael S. Grable, MD; DeLand, FL	2020
Alan K. Miller, MD, FACS; Bradenton, FL	2019
David D. Thiel, MD; Jacksonville, FL	2020

Georgia Representatives

Rabii Madi, MD; Augusta, GA	2021
Joshua A. Perkel, MD; Macon, GA	2021
Chad W.M. Ritenour, MD; Atlanta, GA	2020

Georgia Alternate Representatives

Kenneth J. Carney, MD, PharmD; Atlanta, GA	2020
Cara B. Cimmino, MD; Atlanta, GA	2021
Viraj A. Master, MD, PhD, FACS; Atlanta, GA	2021

Kentucky Representative

Murali K. Ankem, MD, MBA; Louisville, KY	2021
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Kentucky Alternate Representative

Jason R. Bylund, MD; Louisville, KY	2021
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Louisiana Representatives

Chris P. Fontenot, MD; Lafayette LA	2019
Jonathan Henderson, MD; Shreveport, LA	2019

Louisiana Alternate Representatives

Kenneth L. Perego II, MD; Alexandria, LA	2019
Joanna M. Togami, MD; New Orleans, LA	2019

Mississippi Representative

Christopher M. Bean, MD; Jackson, MS	2021
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Mississippi Alternate Representative

To Be Determined	2021
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North Carolina Representatives

Brian S. Cope, MD; Hillsborough, NC	2021
Aaron Lentz, MD; Raleigh, NC	2020
Matthew E. Nielsen, MD, MS; Chapel Hill, NC	2020

North Carolina Alternate Representatives

Lydia Labocetta, MD; Bolivia, NC	2021
Thomas J. Polascik, MD, FACS; Durham, NC	2020
Stephen Riggs, MD, FACS; Charlotte, NC	2020

Panama Representative

Tristan Pinzon, MD; Panama	2020
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Panama Alternate Representative

Elias Bodden Munoz Sr., MD; Panama	2020
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Puerto Rico Representative

Eduardo I. Canto, MD; San Juan, PR	2021
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Puerto Rico Alternate Representative

Gilberto Ruiz-Deya, MD; Ponce, PR	2021
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South Carolina Representatives

Ross A. Rames, MD; Charleston, SC	2020
Alexander W. Ramsay, MD; Charleston, SC	2020

South Carolina Alternate Representatives

David H. Lamb, MD; West Columbia, SC	2020
Bradley W. Steele, MD; Charleston, SC	2020

Tennessee Representatives

Sam S. Chang, MD, MBA; Nashville, TN	2019
Melissa R. Kaufman, MD, PhD; Nashville, TN	2020

Tennessee Alternate Representatives

Timothy K. Duffin, MD; Clarksville, TN	2019
Wesley M. White, MD; Knoxville, TN	2020

REPRESENTATIVE TO THE AUA BOARD OF DIRECTORS

Thomas F. Stringer, MD, FACS; Gainesville, FL	2019
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RESIDENT REPRESENTATIVES

Jason H. Frischhertz, MD; Jackson, MS	2019
Ruiyang Jiang, MD; Durham, NC	2019
Gopal Lakhi Narang, MD; Chapel Hill, NC	2019
Vincent Xavier Rodriguez Bury, MD; San Juan, PR	2019

STANDING COMMITTEES**Bylaws Committee**

Nicole L. Miller, MD; Nashville, TN (Committee Chair)	2021 (T1)
Jonathan Henderson, MD; Shreveport, LA	2019 (T2)
S. Duke Herrell III, MD, FACS (Secretary)	2021
Alexander W. Ramsay, MD; Charleston, SC	2021 (T1)
Ryan P. Terlecki, MD, FACS	2021 (T1)
Michael J. Wehle, MD; Jacksonville, FL	2020 (T2)

Committee on Education and Science

Chad W.M. Ritenour, MD; Atlanta, GA (Committee Chair)	2021 (T1)
Christopher S. Gomez, MD; Miami, FL (Young Urologists Representative)	2019 (T2)
David F. Penson, MD, MPH; Nashville, TN	
(Committee Member - Montague Boyd Essay)	2021 (T2)
Thomas J. Polascik, MD, FACS; Chapel Hill, NC (Committee Member - Videos)	2019 (T1)
Raj S. Pruthi, MD; Chapel Hill, NC (Member at Large)	2021 (T2)
Stephen J. Savage, MD; Charleston, SC (Committee Member - Residents)	2020 (T2)
David D. Thiel, MD; Jacksonville, FL (Member at Large)	2019 (T1)
Wesley M. White, MD; Knoxville, TN (Committee Member - Imaging)	2021 (T1)

Finance Committee

Gerard D. Henry, MD; Shreveport, LA (Committee Chair)	2020
David M. Kraebber, MD; Wilmington, NC	2020
Brant Inman, MD, MS; Durham, NC	2019
Donald T. McKnight Jr., MD; Jackson, TN	2020
John F. Pirani, MD; Gadsden, AL	2019
Stephen Riggs, MD, FACS; Charlotte, NC	2021

Health Policy Council

Jonathan Henderson, MD; Shreveport, LA (Chair)	2021
Terrence C. Regan, MD; Palm Coast, FL (Vice Chair)	2021
Brian E. Richardson, MD; Montgomery, AL (Alabama Representative)	2021
To Be Determined (Alabama Alternate Representative)	
Martin K. Dineen, MD; Daytona Beach, FL (Consultant)	
Terrence C. Regan, MD; Palm Coast, FL (Florida Representative)	2019
Vincent G. Bird, MD; Gainesville, FL (Florida Alternate Representative)	2019
Edward W. Killorin Jr., MD; Columbus, GA (Georgia Representative)	2019
William B. Gilbert, MD; Rome, GA (Georgia Alternate Representative)	2019
John M. Patterson, MD; Frankfort, KY (Kentucky Representative)	2019
Jason R. Bylund, MD; Lexington, KY (Kentucky Alternate Representative)	2019
Lester J. Prats, MD; New Orleans, LA (Louisiana Representative)	2019
Donald A. Elmajian, MD; Shreveport, LA (Louisiana Alternate Representative)	2019
Charles R. Moore, MD; Hattiesburg, MS (Mississippi Representative)	2019
To Be Determined (Mississippi Alternate Representative)	
Thomas H. Phillips, MD; Matthews, NC (North Carolina Representative)	2019
Steve J. Hodges, MD; Winston-Salem, NC (North Carolina Alternate Representative)	2019
Tristan L. Pinzon, MD; Colón, Panama (Panama Representative)	2021
Elias Bodden Munoz, Sr., MD; Panama (Panama Alternate Representative)	2021
Gilberto Ruiz-Deya, MD; Ponce, PR (Puerto Rico Representative)	2019
Ricardo F. Sanchez-Ortiz, MD; Hato Rey, PR (Puerto Rico Alternate Representative)	2019
Ross A. Rames, MD; Mt. Pleasant, SC (South Carolina Representative)	2019
Bradley W. Steele, MD; Charleston, SC (South Carolina Alternate Representative)	2019
John W. Brock III, MD; Nashville, TN (Tennessee Representative)	2019
John M. Hassan, MD; Franklin, TN (Tennessee Alternate Representative)	2019

Membership Committee

Chad W.M. Ritenour, MD; Atlanta, GA (Committee Chair)	2019
Paul L. Crispen, MD; Gainesville, FL	2020
Thomas J. Polascik, MD, FACS; Chapel Hill, NC	2021
Rolando Rivera, MD, FACS; Bonita Springs, FL	2020
John P. Selph, MD; Birmingham, AL	2021
T. Brian Willard, MD; West Columbia, SC	2021

Nominating Committee

Jack M. Amie, MD; Brunswick, GA (Committee Chair)	2019
Dean G. Assimios, MD; Birmingham, AL	2020
Jerry E. Jackson, MD, FACS; Sumter, SC	2021
Gregory F. Murphy, MD, FACS; Greenville, NC	2019
Rolando Rivera, MD, FACS; Bonita Springs, FL	2021

Site Selection Committee

Jack M. Amie, MD; St. Simons Island, GA (Committee Chair)	2021
S. Duke Herrell III, MD, FACS; Nashville, TN	2021
David M. Kraebber, MD; Wilmington, NC	2020

REPRESENTATIVES TO AUA COMMITTEES

AUA Board of Directors

Thomas F. Stringer, MD, FACS; Gainesville, FL (Representative)	2019
Raymond J. Leveillee, MD, FRCS-G; Cooper City, FL (Alternate Representative)	2019

AUA Bylaws Committee

Rafael E. Carrion, MD; Tampa, FL	2020 (T1)
Lee N. Hammontree, MD; Homewood, AL	2020 (T2)
Donald T. McKnight Jr., MD; Jackson, TN	2020 (T1)

AUA Editorial Board Committee

Wayne J. G. Hellstrom, MD, FACS; New Orleans, LA	2021
Nicole L. Miller, MD; Nashville, TN	2020
Ramakrishna Venkatesh, MD, MS, FRCS; St. Louis, MO	2022

AUA Public Policy Council

Vincent Gerard Bird, MD	2020
Andrew C. Peterson, MD, FACS; Durham, NC	2019
Terrence C. Regan, MD; Palm Coast, FL	2019

AUA History Committee

Paul W. F. Coughlin, MD, FACS; High Point, NC	2019
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AUA Judicial & Ethics Council

Peter E. Clark, MD; Nashville, TN	2021
Gregory F. Murphy, MD, FACS; Greenville, NC	2021
Stephen E. Strup, MD, FACS; Lexington, KY	2019

AUA Practice Management Committee

Matthew J. Resnick, MD, MPH; Nashville, TN	2020
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AUA Research Council

Benjamin K. Canales, MD, MPH; Gainesville, FL (Representative)	2020
Peter E. Clark, MD; Nashville, TN (Representative)	2019
Sunil Sudarshan, MD; Birmingham, AL (Representative)	2021

AUA Resident's Committee

Eugene B. Cone, MD; Durham, NC (Representative)	2019
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AUA Young Urologist Committee

John P. Selph, MD; Birmingham, AL (Representative)	2019
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Numerical Membership of the SESAUA

Active

Active Member	1,345
Active Member - Transfer Internal	8
Active Member - Transfer into Section	10
Total Active Count:	1,363

Affiliate

Affiliate Member	2
Total Affiliate Count:	2

Allied

Allied Member	1
Total Allied Count:	1

Associate

Associate Member	87
Associate Member - Transfer into Section	2
Total Associate Count:	89

Honorary

Honorary	92
Honorary - Transfer Internal	2
Total Honorary Count:	94

Senior

Senior Member	704
Senior Member - Transfer Internal	22
Total Senior Count:	726

Total Membership Count: 2,275

General Meeting Information

Registration/Information Desk Hours

Location: FLW Registration Desk

Wednesday, March 13, 2019	7:00 a.m. – 5:00 p.m.
Thursday, March 14, 2019	6:00 a.m. – 5:10 p.m.
Friday, March 15, 2019	6:30 a.m. – 6:00 p.m.
Saturday, March 16, 2019	6:30 a.m. – 1:00 p.m.

Exhibit Hall Hours

Location: FLW Salons A-F

Thursday, March 14, 2019	9:00 a.m. – 4:00 p.m. 6:00 p.m. – 8:00 p.m.
Friday, March 15, 2019	9:00 a.m. – 4:00 p.m.
Saturday, March 16, 2019	9:00 a.m. – 11:30 a.m.

Speaker Ready Room Hours

Location: FLW McDowell

Wednesday, March 13, 2019	10:30 a.m. – 5:00 p.m.
Thursday, March 14, 2019	6:00 a.m. – 5:10 p.m.
Friday, March 15, 2019	6:30 a.m. – 6:00 p.m.
Saturday, March 16, 2019	6:30 a.m. – 1:00 p.m.

Spouse/Guest Hospitality Suite Hours

Location: Taliesin

Wednesday, March 13, 2019	7:30 a.m. – 10:30 a.m.
Thursday, March 14, 2019	7:30 a.m. – 10:30 a.m.
Friday, March 15, 2019	7:30 a.m. – 10:30 a.m.
Saturday, March 16, 2019	7:30 a.m. – 10:30 a.m.

BOARD OF DIRECTORS AND COMMITTEE MEETINGS

Executive Committee Lunch

Location: Valley

Tuesday, March 12, 2019	12:00 p.m. – 1:00 p.m.
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Executive Committee Meeting

Location: Mystery

Tuesday, March 12, 2019	1:00 p.m. – 5:00 p.m.
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Board of Directors Meeting

Location: McArthur 5-7

Wednesday, March 13, 2019	7:00 a.m. – 11:00 a.m.
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Health Policy Council Meeting

Location: FLW South Mountain

Thursday, March 14, 2019	5:10 p.m. – 6:00 p.m.
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Residents Committee Meeting

Location: FLW Salons G-J

Thursday, March 14, 2019	5:10 p.m. – 6:00 p.m.
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Nominating Committee Meeting

Location: FLW Black Canyon

Friday, March 15, 2019	11:55 a.m. – 1:10 p.m.
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Annual Business Meeting

The SESUA Annual Business Meeting will be held on Saturday, March 16, 2019, from 10:15 a.m. - 10:45 a.m. at the Arizona Biltmore in **FLW Salons G-J**. Only Members of the Section are able to attend. Please note that only active, senior members, and those Active and Senior members who are elected to Honorary Membership are eligible to vote. Members do not need to be registered for the scientific portion of the conference to attend the Annual Business Meeting.

Evening Functions

One ticket to each function is included in your registration fee. Individual tickets may be purchased at the registration/information desk.

Welcome Reception

Thursday, March 14, 2019

6:00 p.m. – 8:00 p.m.

Location: Frank Lloyd Wright Salons A-F

Attire: Business Casual

Cost: One (1) ticket included in registration, additional tickets are \$150.00 for adults and complimentary for children.

Description: Welcome to Phoenix! Come enjoy a glass of wine, local cuisine and entertainment while catching up with colleagues and exhibitors.

Annual Reception and Banquet

Saturday, March 16, 2019

6:30 p.m. – 7:30 p.m. Cocktails and Hors d'Oeuvres

7:30 p.m. – 10:00 p.m. Dinner and Entertainment

Location: Gold Patio and Room

Attire: Cocktail Attire

Cost: One (1) ticket included in registration, additional tickets are \$185.00.

Description: The closing social event of the 83rd Annual Meeting of the SESAUA is sure to please everyone with an expertly crafted menu, musical entertainment and dancing.

Optional Events

Availability of tours is subject to change.

Optional events are not included in the registration fee, except for the Presentation on the Foundation for Hospital Art "PaintFest."

*All optional tours depart from the convention center entrance of the Arizona Biltmore unless otherwise noted. **Please arrive 15 minutes prior to the scheduled time.***

Foundation for Hospital Art "PaintFest"

Wednesday, March 13 – Friday, March 15, 2019

Hospital Art "Paintfest" will be open during Spouse/Guest Hospitality Suite Open Hours

Location: Taliesin — Spouse/Guest Hospitality Room

The traditional hospital setting is exemplified by white, sterile walls and ceilings. Examining rooms, waiting rooms, corridors – areas where health professionals and other caregivers work, where families and patients wait – are too often colorless, lifeless and certainly not inviting. The Foundation for Hospital Art was officially established in 1984, and is dedicated to involving patients and volunteers worldwide to create colorful, soothing artwork donated to hospitals to help soften the often stressful hospital experience. Information above, along with other information, can be found at www.hospitalart.com.

Cost: Complimentary

Arizona Biltmore History Tour

Thursday, March 14, 2019 and Saturday, March 16, 2019

10:00 a.m. – 11:30 a.m.

Location: Meet in hotel lobby

Arizona Biltmore is among the world's most recognized resorts, heralded for its Frank Lloyd Wright-inspired architecture, luxurious facilities, and storied history as a playground of the rich and famous. Known as "The Jewel of the Desert", The Arizona Biltmore was constructed in grand form and has been host to vibrant social events for 86 years. Come on a private tour led by a certified historian and experience the lure and architectural significance first hand!

Cost: Complimentary

Desert Botanical Garden Tour

Saturday, March 16, 2019

12:30 p.m. – 4:00 p.m.

Location: Meet at the Convention Center Entrance

Suggested Attire: Comfortable walking shoes

The tour includes transportation, private guided tour and admission to the Desert Botanical Garden.

Discover the incredible display of a remarkable collection of desert plants at the Desert Botanical Garden. The Living Desert illustrates examples of the Saguaro forest, a mesquite thicket, a desert stream environment, and an upland chaparral habitat. The Sonoran Desert contains more than 400 edible plants and hundreds more with medicinal and utilitarian uses. This tour demonstrates how native people used the unique plants of this region. The guided tour takes the group through an Apache Wickiup and a Pima Household, revealing native cooking and gardening techniques alongside hands-on activities such as, twisting a rope made from Agave leaves and pounding mesquite beans to make flour. Beautiful at every season of the year, the Garden is sure to delight and entertain while lending itself to an educational southwestern experience.

Cost: \$105 per person

Industry Satellite Symposium Events

WEDNESDAY, MARCH 13, 2019

11:00 a.m. - 12:00 p.m. Industry Sponsored Lunch Symposium
Sponsored by: Merck & Co
Location: McArthur 4

THURSDAY, MARCH 14, 2019

12:15 p.m. - 1:30 p.m. Industry Sponsored Lunch Symposium
Sponsored by: Astellas Pharma and Pfizer Oncology
Location: McArthur 4

“A Treatment Option for Castration-Resistant Prostate Cancer (CRPC)”

William Aronson, MD
UCLA Department of Urology
Los Angeles, CA

12:15 p.m. - 1:30 p.m. Industry Sponsored Lunch Symposium
Sponsored by: TOLMAR Pharmaceuticals
Location: McArthur 1-3

“Androgen Targeted Therapy Across the Continuum of Prostate Cancer”

Vahan S. Kassabian, MD
Georgia Urology, PA
Atlanta, GA

FRIDAY, MARCH 15, 2019

11:55 a.m. - 1:10 p.m. Industry Sponsored Lunch Symposium
Sponsored by: Genomic Health
Location: McArthur 4

“Biomarkers for Early- and Late-Stage Prostate Cancer Patients”

Richard C. Sarle, MD
Michigan Institute of Urology, PC
Dearborn, MI

11:55 a.m. - 1:10 p.m. Industry Sponsored Lunch Symposium
Sponsored by: Janssen Biotech
Location: McArthur 1-3

“Treating Patients with Non-Metastatic Castration-Resistant Prostate Cancer: New HRQoL Data”

Jonathan Henderson, MD
Regional Urology, LLC
Shreveport, LA

Bryan A. Mehlhaff, MD
Oregon Urology Institute
Springfield, OR

SATURDAY, MARCH 16, 2019

1:00 p.m. - 2:00 p.m.

Industry Sponsored Lunch Symposium

Sponsored by: AbbVie

Location: McArthur 4

“Promoting Wellness in 2019 Save Time Reviewing What Works and What Is Worthless”

Mark Moyad, MD, MPH

Jenkins/Pokempner

Director of Complementary and Alternative Medicine

Department of Urology, University of Michigan

Ann Arbor, MI

2:00 p.m. - 4:00 p.m.

Industry Sponsored Course

Sponsored by: Pusen Medical Technology

Location: McArthur 1-3

“PUSEN Single-Use Digital Ureteroscope Hand's On Training”

2019 Exhibits

Alphabetical as of 2/26/2019

AbbVie	Hitachi Healthcare
Advanced Urology Institute, LLC	Janssen Biotech, Inc.
Allergan, Inc.	KARL STORZ
Amylam Pharmaceuticals	Koelis
American HIFU/Southern Litho	LABORIE
American Urological Association, Inc.	Lumenis, Inc.
Antares Pharma	MenMD
Astellas Pharma and Pfizer Oncology	Merck & Co.
Astellas Pharma US, Inc.	MicroGenDX
Bayer HealthCare	Myriad Genetics, Inc.
BD Medical	NeoTract Teleflex
BK Medical	Olympus America, Inc.
Blue Earth Diagnostics, Inc	OPKO Health
Boston Scientific/Augmenix	Pacey MedTech Ltd
Boston Scientific Corporation	Pacific Edge Diagnostics USA Ltd.
CAREstream America	PathRight Medical
Cellay, Inc.	Photocure
Coloplast	PSS Urology
Cook Medical	Pusen Medical Technology
Dendreon	Rejuvenation Med
Dornier MedTech	Retrophin
EDAP TMS	Richard Wolf Medical Instruments, Corp.
Endo Pharmaceuticals	Siemens Healthineers
Exact Imaging	Surgimate
Exosome Diagnostics Inc	TOLMAR Pharmaceuticals
Ferring Pharmaceuticals	UC-CARE (USA)
ForTec Medical	United Medical Systems
Genomic Health	University Compounding Pharmacy
Guerbet, LLC	UroGen Pharma
HealthTronics, Inc.	UroMedica

Industry Partners

The SESAUA wishes to thank and recognize our 2019 Industry Partners

Platinum Level Partners

AbbVie
Astellas Pharma and Pfizer Oncology
Genomic Health
Janssen Biotech, Inc.
Merck & Co.
TOLMAR Pharmaceuticals

Gold Level Partner

Pusen Medical Technology

Silver Level Partners

Astellas Pharma US, Inc.
Bayer HealthCare
Exosome Diagnostics Inc.
Lumenis, Inc.

Thank You to Our 2019 Contributors

PROCEPT BioRobotics

Named Lectures and Contests



The Ballenger Memorial Lecture

Dr. Edgar Ballenger was the Southeastern Section president in 1935 and president of the AUA in 1939. The Annual Ballenger Memorial Lectureship was established after his death in 1946 and serves as our major scientific presentation.



Dr. Leonard Gomella is the Bernard W. Godwin, Jr. Professor of Prostate Cancer and Chairman of the Department of Urology at the Sidney Kimmel Medical College. He joined the Jefferson faculty in 1988 and was appointed Chair in 2002. He serves as Senior Director for Clinical Affairs for the Sidney Kimmel Cancer at Jefferson, Clinical Director of the SKCC Network and Urology Chair for NRG (RTOG). Dr. Gomella is involved in translational basic science and clinical research in the development of new diagnostic techniques and treatments for prostate and bladder cancer through the Sidney Kimmel Cancer Center as Co-Leader of the Biology of Prostate Cancer Program. He has given over 500 presentations, written over 400

papers, and edited chapters and monographs in the field of Urology. Dr. Gomella has authored and edited 63 editions of 17 different books for medical students, residents, and practicing physicians. He is currently President of the Society of Urologic Oncology. In 2015 he received a "Distinguished Contribution Award" from the AUA and Thomas Jefferson University Jefferson honored him with the "Jefferson Achievement Award in Medicine". In 2018 he received a "Distinguished Service Award" from the Society of Urologic Oncology at the AUA Meeting in San Francisco.



The T. Leon Howard Imaging Conference

Dr. T. Leon Howard was president of the South Central Section in 1932. He was a founding trustee of the American Board of Urology in 1934 and AUA president in 1941. He became an honorary member of the Southeastern Section in 1947.



The Gee-Dineen Health Policy Forum

The Gee-Dineen Health Policy Forum will examine the impact of government health policy, physician payment reform, and the interaction between quality patient care and the pressures of trying to practice medicine amid ever increasing government regulation. These sessions serve to honor Drs. William Gee and Martin Dineen, past presidents of the Section, for the major contributions they have made to the socioeconomic issues at both the section and national levels.



The Montague Boyd Prize Essay Contest

Dr. Montague Boyd was the founder of the Southeastern Section, and he served as president in 1933 and 1934. The prize was established in 1967 and is given to a resident, fellow, or urologist in private practice less than 10 years.



The Ambrose-Reed Lecture

Dr. Samuel Ambrose was the Southeastern Section president in 1975 and in 1981 became the first chairman of the AUA Public Relations Committee, later to be called the Socioeconomic Committee. Dr. Mason, who served as president, formed this committee, which later became the Health Policy Council.

Dr. Josiah Reed was the Southeastern Section president in 1992 and chairman of the AUA Socioeconomic Committee in 1986. This award honors these two pioneers in the field of health policy.



David C. Miller, MD, MPH is Professor and Chief of the Dow Division of Health Services Research in the Department of Urology at the University of Michigan. He also serves the role of Chief Clinical Officer for University Hospital and the Frankel Cardiovascular Center.

After graduating from Washington University School of Medicine, Dr. Miller completed his general surgery internship and urology residency training at the University of Michigan Medical Center. He then undertook fellowship training in urological oncology at the David Geffen School of Medicine at UCLA. His clinical practice focuses on the diagnosis and management of patients with prostate and kidney cancer. In addition to his clinical practice,

Dr. Miller serves as Director of the Michigan Urological Surgery Improvement Collaborative (MUSIC). Funded by Blue Cross Blue Shield of Michigan (BCBSM), MUSIC is a consortium of more than 40 urology practices aiming to improve the quality and cost-efficiency of prostate cancer care in the state of Michigan.

Dr. Miller has a broad background in health services research, including substantial experience using claims data and formal training in the advanced statistical methods used in observational data analyses. Dr. Miller's research training includes both a Masters in Public Health (MPH) in Epidemiology, and completion of health services research fellowships at the University of Michigan and University of California, Los Angeles/RAND Corporation. With longitudinal funding from the Agency for Healthcare Research & Quality and the National Cancer Institute, Dr. Miller's empirical research agenda focuses on comparative effectiveness research, physician-led collaborative quality improvement, and understanding the relationship between physician organizations, integrated delivery systems, and the quality and cost of specialty care.



2019 Presidential Lecturer: Stephen Y. Nakada, MD, FACS, FRCS (Glasg.)

Dr. Nakada is Professor and Chairman of the Department of Urology and the David T. Uehling Chair of Urology at the University of Wisconsin School of Medicine and Public Health in Madison, WI. He received his medical degree from the University of Rochester School of Medicine and Dentistry, and completed his residency training at Strong Memorial Hospital in Rochester, NY. Dr. Nakada went on to complete his Endourology Fellowship at Washington University prior to joining the faculty at the University of Wisconsin in 1995. Dr. Nakada has been the Chairman of Urology in Madison since 2001.

Dr. Nakada's research focuses on urolithiasis and renal aspects of minimally invasive urology. He has authored or co-authored over 250 scientific articles, 50 book chapters, and he has edited more than 10 textbooks in those areas. In 2004, Dr. Nakada received the Gold Cystoscope Award from the AUA and in 2017 the AUA Distinguished Service Award. He is currently an editorial consultant for Urology Times and an assistant editor of the Journal of Endourology.

Dr. Nakada has served in leadership roles in the R.O.C.K. Society, Society of Academic Urologists and the Endourological Society. He has served on the AUA Staghorn Stone and Ureteral Stones Guidelines Committees, the AUA/ABU Examination Committee, and he served as the Chair of the AUA Laparoscopy and Robotic Surgery Committee. Currently, Dr. Nakada is President of the American Board of Urology and a member of the Advisory Council in Urology to the American College of Surgeons. Dr. Nakada is an active member of the American Association of Genitourinary Surgeons and the Clinical Society of Genitourinary Surgeons, among other societies.

Full Scientific Program

All sessions will be located in **FLW Salons G-J** unless otherwise noted.

Speakers and times are subject to change.

WEDNESDAY, MARCH 13, 2019

OVERVIEW

- 7:00 a.m. - 5:00 p.m.** **Registration/Information Desk Open**
Location: FLW Registration Desk
- 7:00 a.m. - 11:00 a.m.** **Board of Directors Meeting**
Location: McArthur 5-7
- 7:30 a.m. - 10:30 a.m.** **Spouse/Guest Hospitality Suite Open**
Location: Taliesin
- 10:30 a.m. - 5:00 p.m.** **Speaker Ready Room Open**
Location: FLW McDowell

GENERAL SESSION

- | | |
|--------------------------------|--|
| 11:00 a.m. - 12:00 p.m. | Industry Sponsored Lunch Symposium
<i>Location: McArthur 4</i> |
|--------------------------------|--|
- 12:05 p.m. - 12:15 p.m.** **Opening Remarks**
President: Scott B. Sellinger, MD, FACS
Tallahassee, FL
- 12:15 p.m. - 1:30 p.m.** **Panel Discussion: Office Female Urology: A Day in the Life**
Moderator: Katie N. Ballert, MD
Lexington, KY
- Vaginal Lasers: The Science Behind the Lasers**
Panelist: Michael J. Kennelly, MD, FACS
Charlotte, NC
- Recurrent UTI Prevention: Fact vs. Fiction**
Panelist: Melissa R. Kaufman, MD, PhD, FACS
Nashville, TN
- What's Keeping You Up at Night? Nocturia as the Primary Complaint**
Panelist: Alexander Gomelsky, MD
Shreveport, LA
- OAB - Therapeutic Algorithm Third-Line Therapies: When I Use What and Why?**
Panelist: M. Louis Moy, MD
Gainesville, FL
- 1:30 p.m. - 2:15 p.m.** **State-of-the-Art Lecture: BPH/BOO in 2019: What I Do When?**
Guest Speaker: Mitchell R. Humphreys, MD
Phoenix, AZ

- 2:15 p.m. - 3:15 p.m.** **Panel Discussion: The Narcotic/Opioid Crisis and Urology**
Moderator: Stephen Riggs, MD, FACS
Charlotte, NC
Panelists: Donald T. McKnight Jr., MD
Jackson, TN
Stephen Riggs, MD, FACS
Charlotte, NC
Jennifer Robles, MD
Nashville, TN
- 3:15 p.m. - 3:30 p.m.** **Break**
Location: FLW Foyer

Concurrent Sessions Begin

Concurrent Session 1 of 5

- 3:30 p.m. - 5:00 p.m.** **Socioeconomics and Health Services Research Podium Session**
Location: FLW Salons G-J
Moderators: Nazih P. Khater, MD
Shreveport, LA
Aaron A. Laviana, MD
Nashville, TN
- 3:30 p.m. #1 UROLOGISTS LEAD SURGICAL SUBSPECIALISTS IN MEDICARE PRESCRIPTION DRUG COSTS**
George Wayne, MD, Maurilio Garcia, MD, Juan Cedenio, MD, Elizabeth Nagoda, MD, Jorge Pereira, MD
Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL
Presented By: George Wayne, MD
- 3:37 p.m. #2 ANALGESIC PRESCRIBING PATTERNS IN EMERGENCY DEPARTMENTS FOR ACUTE SYMPTOMATIC UROLITHIASIS IN THE UNITED STATES, 2006-2014**
Leonid I. Aksenov^{1,2}, Ashley W. Johnston, MD^{1,2}, Brenton B. Winship, MD¹, Russell S. Terry, MD¹, Michael E. Lipkin, MD, MBA¹, Jonathan C. Routh, MD, MPH¹, Glenn M. Preminger, MD¹, Charles D. Scales, MD, MSHS^{1,2}
¹*Duke University School of Medicine, Division of Urologic Surgery*, ²*Duke Clinical Research Institute*
Presented By: Leonid I. Aksenov
- 3:44 p.m. #3 POST-OPERATIVE OPIOID PRESCRIBING IN UROLOGY: ARE WE CONTRIBUTING TO THE NATIONAL CRISIS?**
Kathryn Hacker¹, Jae Jung¹, J. Lee Graves¹, Hannah Cook¹, Peggy McNaull¹, Brooke Chidgey¹, Jami Mann¹, Michael Woods², Scott Stoioff¹, Brian Cope¹, Davis Viprakasit¹, Hung-Jui Tan¹, Mathew Raynor¹, Brad Figler¹, R. Matthew Coward¹, Kristy Borawski¹, Eric Wallen¹, Raj Pruthi¹, Angela Smith¹, Matthew Nielsen¹
¹*University of North Carolina at Chapel Hill*, ²*Loyola University Medical Center*
Presented By: Kathryn E. Hacker Gessner, MD, PhD

- 3:51 p.m. #4 UNDERSTANDING PATIENT EXPECTATIONS AND DETERMINANTS OF SATISFACTION IN A UROLOGY CLINIC AT AN ACADEMIC MEDICAL CENTER**
 Andrew Rabley¹, Haley Oberhofer², Scott Rizzi², Shahab Bozorgmehri¹, Samantha Larson³, Julia Han¹, M. Louis Moy¹
¹Department of Urology, University of Florida, Gainesville, FL,
²College of Medicine, University of Florida, Gainesville, FL,
³College of Public Health, University of Florida
 Presented By: Andrew Rabley, MD
- 3:58 p.m. #5 COMPARISON OF UROLOGICAL PATIENTS TRANSFERRED TO THREE DIFFERENT TERTIARY CARE CENTERS OVER A 2 YEAR PERIOD**
 Marilyn Hopkins, MD¹, Ian Berger, BS², Justin Ziemba, MD², Utsav Bansal, MD³, Adithya Balasubramanian, MD³, Jessie Chen, MD³, Wesley Mayer, MD³, Andrew James, MD¹, Andrew Harris, MD¹
¹University of Kentucky, ²University of Pennsylvania, ³Baylor College of Medicine
 Presented By: Marilyn K. Hopkins, MD
- 4:05 p.m. #6 BURDEN OF UROLOGIC DISEASE AND EFFICACY OF SHORT-TERM SURGICAL MISSIONS IN RURAL HAITI**
 Adam Lorentz¹, Steven Gerhard¹, Lee Hugar², Justine Broecker³, Jyotirmay Sharma³, Jahnvi Srinivasan³, Cinnamon Sullivan⁴, Viraj Master¹, John Pattaras¹, Jeff Carney¹
¹Department of Urology, Emory University, Atlanta, GA,
²Department of Urology, University of Pittsburgh Medical Center, Pittsburgh, PA, ³Department of Surgery, Emory University, Atlanta, GA, ⁴Department of Anesthesiology, Emory University, Atlanta, GA
 Presented By: Charles Adam Lorentz, MD
- 4:12 p.m. #7 CRITICAL EXAMINATION OF INDICATIONS FOR URINALYSIS IN THE UNITED STATES**
 Peter Kolettis, MD¹, Kyle Gennaro, MD¹, Gerald McGwin, Jr., MS, PhD²
¹Department of Urology, ²Department of Epidemiology
 Presented By: Kyle Harrison Gennaro, MD
- 4:19 p.m. #8 ACCEPTABILITY, APPROPRIATENESS AND APPEAL OF IMPLEMENTING SUPPORT FOR GUIDELINE-BASED CANCER CARE IN RURAL AND MINORITY UROLOGY PRACTICES**
 Jessie Gills¹, Kelly Stratton², J. Brantley Thrasher³, Tomas L. Griebing³, Charles McWilliams², Andrew Zganjar³, Muger Geana⁴, Christine Mackay⁵, Ariel Shifter⁶, Shellie D. Ellis⁶
¹Department of Urology, Louisiana State University Health Sciences Center, ²Stephenson Cancer Center, University of Oklahoma, Oklahoma City, OK, ³Department of Urology, University of Kansas, Kansas City, KS, ⁴White School of Journalism and Mass Communications, University of Kansas, Lawrence, KS, ⁵Kansas University Cancer Center, University of Kansas, Kansas City, KS, ⁶Department of Health Policy and Management, University of Kansas, Kansas City, KS
 Presented By: Jessie R. Gills, MD

- 4:26 p.m. #9 UNDERSTANDING THE CONTEMPORARY UROLOGIC WORKFORCE: ASSOCIATION BETWEEN UROLOGIST GENDER AND PRACTICE PATTERNS FOR MEDICARE BENEFICIARIES**
Catherine Nam, BS, Frances Kim, MPH, P Filson, MD, MS
Dept of Urology, Emory University School of Medicine, Atlanta, GA
Presented By: Catherine Soorim Nam
- 4:33 p.m. #10 ARE THERE GENDER DISPARITIES IN UROLOGIC SURGEONS WHO DO MINIMALLY INVASIVE SURGERY?**
Jennifer Robles, MD¹, Ryan Terlecki, MD², Brant Inman, MD, MS³, Nicole Miller, MD¹
¹*Vanderbilt University Medical Center*, ²*Wake Forest Baptist Health*, ³*Duke University Medical Center*
Presented By: Jennifer Robles, MD
- 4:40 p.m. #11 CORRELATION OF RELATIVE VALUE UNITS WITH SURGICAL COMPLEXITY AND PHYSICIAN WORKLOAD IN UROLOGY**
Zoe Gan, BA¹, Case Wood, MD², Allison Deal, MS³, Chang Xu, MS³, Yue Wang, PhD³, Angela Smith, MD, MS, FACS², Raj Pruthi, MD, FACS²
¹*University of North Carolina at Chapel Hill School of Medicine*, ²*Department of Urology, University of North Carolina at Chapel Hill*, ³*University of North Carolina Lineberger Comprehensive Cancer Center*
Presented By: Case Wood, MD

Concurrent Session 2 of 5

- 3:30 p.m. - 5:00 p.m. Bladder Cancer Podium Session**
Location: McArthur 1-3
Moderators: Kelvin A. Moses, MD, PhD, FACS
Nashville, TN
Alan M. Nieder, MD
Miami Beach, FL
- 3:30 p.m. #12 APPLICATION OF AUA RISK STRATIFICATION FOR NON-MUSCLE INVASIVE BLADDER CANCER: LONG-TERM RESULTS IN A CONTEMPORARY SINGLE INSTITUTION COHORT**
Maria C. Velasquez Escobar¹, Deukwoo Kwon², Nachiketh Soodana-Prakash³, Maria Becerra⁴, Marcelo Barboza¹, Luis Savio¹, Sanoj Punnen¹, Dipen J. Parekh¹, Mark L. Gonzalgo⁵, Chad R. Ritch¹
¹*University of Miami Miller School of Medicine, Urology Department, Miami, FL.*, ²*University of Miami Miller School of Medicine, Sylvester Comprehensive Cancer Center, Miami, FL.*, ³*University of Miami Miller School of Medicine, Urology Department, Miami, FL.*, ⁴*University of Miami Miller School of Medicine, Urology Department, Miami, FL.*, ⁵*University of Miami Miller School of Medicine, Urology Department, Miami, FL.*
Presented By: Maria Camila Velasquez Escobar

- 3:37 p.m. #13 FIRST IMPRESSIONS: COMPARING BLADDER TUMOR APPEARANCE TO FINAL PATHOLOGY**
Elizabeth Tourville¹, Matthew Strain^{1,2}, Christian Dewan¹, Howard Hasen¹, Christopher Ledbetter¹, Anthony Patterson¹, Robert Wake¹
¹University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN, ²West Jefferson Urology Specialists, Marrero, LA
Presented By: Elizabeth Tourville, MD
- 3:44 p.m. #14 BLUE LIGHT CYSTOSCOPY IMPROVES DETECTION RATES FOR UROTHELIAL BLADDER CANCER COMPARED TO WHITE LIGHT CYSTOSCOPY: UPDATED RESULTS FROM A PROSPECTIVE MULTICENTER REGISTRY**
Shane Pearce, MD¹, Zhoobin Bateni, MD², Soroush Bazargani, MD², Trinity Bivalacqua, MD, PhD³, Kamal Pohar, MD⁴, Badrinath Konety, MD, MBA⁵, John Fitzgerald, MD, MSCI⁶, T. Brian Willard, MD^{7,8}, Jennifer Taylor, MD, MPH⁹, Joseph Liao, MD¹⁰, Jeff Holzbeierlein, MD FACS¹¹, John Taylor III, MD¹¹, James Tierney, DO¹², Maxwell Meng, MD¹³, Sima Porten, MD, MPH¹³, Kristen Greene, MD, MS¹³, Hooman Djaladat, MD, MS², Anne Schuckman, MD², Sia Daneshmand, MD²
¹University of Southern California, ²University of Southern California, ³Johns Hopkins School of Medicine, James Bruchanan Brady Urological Institute, ⁴The Ohio State University Wexner Medical Center, ⁵University of Minnesota, ⁶Stony Brook University Hospital, ⁷Carolina Urology Partners, ⁸Lexington Medical Center, ⁹Baylor College of Medicine, ¹⁰Stanford University, ¹¹The University of Kansas Medical Center, ¹²Charleston Area Medical Center, ¹³University of California San Francisco
Presented By: Thomas Brian Willard, MD
- 3:51 p.m. #15 WITHDRAWN**
- 3:58 p.m. #16 EVALUATION OF FALSE POSITIVE REFLEX UROVYSION TESTING DURING SURVEILLANCE OF UROTHELIAL CARCINOMA**
Andrew Rabley, Kevin Campbell, Jennifer Kuo, Padraic O'Malley, Paul Crispin
University of Florida
Presented By: Andrew Rabley, MD
- 4:05 p.m. #17 TRENDS IN UTILIZATION OF NEOADJUVANT CHEMOTHERAPY FOR BLADDER CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE**
Thomas FitzGibbon, MD¹, Samarjit Rai, MD¹, Jaimin Trivedi, PhD², Jamie Messer, MD¹, Murali Ankem, MD¹, Ahmed Haddad, MD, PhD¹
¹University of Louisville Department of Urology, ²University of Louisville Department of Cardiovascular and Thoracic Surgery
Presented By: Thomas Michael FitzGibbon, Jr., MD, MS

- 4:12 p.m. #18 THE ASSOCIATION BETWEEN PATIENT BMI AND PERIOPERATIVE OUTCOMES FOLLOWING RADICAL CYSTECTOMY: AN ANALYSIS USING THE AMERICAN COLLEGE OF SURGEONS NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE**
Benjamin Harper¹, Matthew Lenardis², Raj Satkunasingam³, Martha Terris¹, Christopher Wallis², Zachary Klaassen²
¹*Division of Urology, Department of Surgery, Medical College of Georgia - Augusta University, Augusta, GA, USA,* ²*Division of Urology, Department of Surgery, University of Toronto, Toronto, ON, Canada,* ³*Department of Urology and Center for Outcomes Research, Houston Methodist Hospital, Houston, TX, USA*
Presented By: Benjamin Thomas Harper, MD
- 4:19 p.m. #19 PRE-OPERATIVE NARCOTIC USE IS ASSOCIATED WITH INCREASING LENGTH OF STAY AND POST-OPERATIVE COMPLICATIONS IN PATIENTS UNDERGOING RADICAL CYSTECTOMY**
Elizabeth Green, Petria Thompson, Kristen Scarpato, Kirk Keegan, Sam Chang, David Penson, Daniel Barocas, Matthew Resnick
Vanderbilt University Medical Center
Presented By: Elizabeth Green, MD
- 4:26 p.m. #20 CHARACTERIZATION OF POST-OPERATIVE INPATIENT NARCOTIC CONSUMPTION FOR CYSTECTOMY PATIENTS IN A DEDICATED ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM**
Blair Townsend, MD, MBA¹, William WorriLOW, BA¹, Myra Robinson, MSPH², Hamza Beano, MD¹, Shelby Jones, APRN, AG-ACNP-BC¹, Blair Parker, MSN, RN, CNL¹, Kris Gaston, MD¹, Peter Clark, MD¹, Stephen Riggs, MD¹
¹*Department of Urology, Levine Cancer Institute/Atrium Health,* ²*Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health*
Presented By: William Blair Townsend, MD
- 4:33 p.m. #21 PROPENSITY-MATCHED ANALYSIS OF STAGE-SPECIFIC EFFICACY OF ADJUVANT CHEMOTHERAPY FOR BLADDER CANCER FOLLOWING RADICAL CYSTECTOMY**
Felix Chen¹, Tulay Koru-Sengul², Feng Miao², Joshua Jue¹, Mahmoud Alameddine³, Devina Dave², Sanoj Punnen³, Dipen Parekh³, Chad Ritch³, Mark Gonzalgo³
¹*University of Miami Miller School of Medicine, Miami, FL,* ²*University of Miami Miller School of Medicine, Department of Public Health Sciences, Miami, FL,* ³*University of Miami Miller School of Medicine, Department of Urology, Miami, FL*
Presented By: Felix Victor Chen, BS
- 4:40 p.m. #22 ASSESSMENT OF FINANCIAL TOXICITY IN BLADDER CANCER PATIENTS USING A VALIDATED QUESTIONNAIRE**
Mark Ehlers¹, John Gore², Stephanie Chisolm³, Allison Deal¹, Karen Sachse³, Robert Lipman³, Patient Survey Network⁴, Angela Smith¹
¹*University of North Carolina - Chapel Hill, Chapel Hill North Carolina,* ²*University of Washington, Seattle, WA,* ³*Beacon,* ⁴*Bladder Cancer Advocacy Network, SC*
Presented By: Mark Ehlers, MD

3:30 p.m. - 5:00 p.m.

Nephrolithiasis Poster Session

Location: McArthur 5

Moderators: Vincent G. Bird, MD

Gainesville, FL

Raymond W. Pak, MD, MBA

Jacksonville, FL

Poster #1

MOSES AND THE STONE: IN VITRO COMPARISON OF A NOVEL LASER TECHNOLOGY TO SHORT AND LONG PULSE IN AN AUTOMATED, HANDS-FREE MODEL

Brenton Winship, MD¹, Daniel Wollin, MD¹, Russell Terry, MD¹, Evan Carlos, MD¹, Jingqiu Li², Chloe Peters³, W. Neal Simmons, PhD⁴, Glenn Preminger, MD¹, Micheal Lipkin, MD¹

¹Duke University Division of Urology, ²Duke-NUS Medical School- Singapore, ³Duke University School of Medicine, ⁴Duke University Department of Mechanical Engineering

Presented By: Brenton Winship, MD

Poster #2

24-HOUR URINE CALCIUM OXALATE SUPERSATURATION RISK CORRELATES WITH CT VOLUMETRIC CALCIUM OXALATE STONE GROWTH

Stanislav Yuzhakov, BS, Shavano Steadman, BS, Brandon Otto, MD, Vincent Bird, MD, Benjamin Canales, MD, MPH

University of Florida, Gainesville, FL

Presented By: Stanislav Yuzhakov

Poster #3

SPECIFIC GUT BACTERIA ARE RESPONSIBLE FOR ABSORPTIVE HYPERCALCIURIA USING A NEW ANTIBIOTIC RODENT MODEL

Paul Dominguez Gutierrez, PhD, Pedro Espino-Grosso, MD, Raghav Pai, BS, William Donelan, PhD, Benjamin Canales, MD

University of Florida

Presented By: Paul Dominguez-Gutierrez, PhD

Poster #4

RNA INTERFERENCE OF HEPATIC LACTATE DEHYDROGENASE AND LIVER METABOLOMIC EFFECTS

Carter Boyd¹, John Knight, PhD², Ross Holmes, PhD², Dean Assimios, MD², Kyle Wood, MD²

¹UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama

Presented By: Carter Boyd, BS

Poster #5

PREMATURE BONE AGING: AND THE CUMULATIVE EFFECTS OF KIDNEY STONES AND CHRON'S DISEASE AND RELATED BOWEL DISORDERS ON THE PREVALENCE OF OSTEOPOROSIS: THE KIDNEY-BOWEL-BONE AXIS

Elizabeth Kwenda¹, Yaroub Fayoub, MD², Paul Dominguez, PhD², Zhaoyi Chen³, Sara Glover, MD², Abdel Alli, PhD², Victoria Bird, MD⁴

¹University of Florida School of Medicine, ²COM University of Florida, ³Dept. of Epidemiology, College of Public Health, University of Florida, ⁴NMARG, Division of Urology

Presented By: Elizabeth Kwenda, BS

Poster #6

THE RISE AND FALL OF DANGEROUS TEMPERATURE CHANGES DURING URETEROSCOPIC LASER LITHOTRIPSY

Brenton Winship, MD¹, Russell Terry, MD¹, Daniel Wollin, MD¹, Evan Carlos, MD¹, Jingqiu Li, MD², Glenn Preminger, MD¹, Michael Lipkin, MD¹

¹Duke University Division of Urology, ²Duke-NUS Medical School - Singapore

Presented By: Brenton Winship, MD

Poster #7

PSYCHIATRIC DIAGNOSES AND OTHER FACTORS ASSOCIATED WITH EMERGENCY DEPARTMENT RETURN WITHIN 30 DAYS OF URETEROSCOPY

Evan Carlos, MD¹, Chloe Peters, BS², Daniel Wollin, MD¹, Brenton Winship, MD¹, Leah Davis, MS¹, Jingqiu Li, BS³, Charles Scales, MD, MSHS¹, Samuel Eaton, MD¹, Glenn Preminger, MD¹, Michael Lipkin, MD, MBA¹

¹Duke University Medical Center, ²Duke University School of Medicine, ³Duke NUS Medical School

Presented By: Evan Carlos, MD

Poster #8

INCIDENCE AND RISK OF PROLONGED OPIOID USE AMONG OPIOID NAIVE PATIENTS FOLLOWING UROLOGIC STONE SURGERY

Mohammed Said, Andrew Leung, Dattatraya Patil, Kenneth Ogan, Akanksha Mehta, Christopher Filson, Aaron Lay
Emory University School of Medicine

Presented By: Mohammed Adnan Said, MD

Poster #9

ASSOCIATION OF OBESITY WITH INCREASED ENDOGENOUS OXALATE SYNTHESIS

Carter Boyd¹, John Knight, PhD², Ross Holmes, PhD², Dean Assimios, MD², Kyle Wood, MD²

¹UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama

Presented By: Carter Boyd, BS

Poster #10

OXALATE DECARBOXYLASE, EFFECTIVE AT REDUCING BOTH EXOGENOUS AND ENDOGENOUS SOURCES OF OXALATE

Matthew Lindeblad, PhD¹, Victoria Bird, MD², Meekah Chaderton, MS³, Ming Yang, MS³, Qing-Shan Li, PhD⁴, Aaron Cowley, PhD³

¹University of Chicago, ²NMARG, Division of Urology,

³Captozyme, ⁴Wuhan Kangfude Bio-Tech Co

Presented By: Victoria Yvonne Bird, MD

Poster #11

ENZYMATIC CHANGES IN ENDOGENOUS OXALATE PATHWAY IN OBESE MOUSE MODEL

Carter Boyd¹, John Knight, PhD², Ross Holmes, PhD², Dean Assimios, MD², Kyle Wood, MD²

¹UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama

Presented By: Carter Boyd, BS

Poster #12

EXPRESSION OF BARLEY OXALATE OXIDASE ENZYME USING A PICHIA PASTORIS SECRETION SYSTEM

William Donelan, PhD¹, ShiWu Li, PhD², Paul Dominguez-Gutierrez, PhD¹, Augustus Anderson IV¹, Cuong Nguyen, PhD³, Benjamin Canales, MD, MPH¹

¹University of Florida, Department of Urology, Gainesville, FL, ²University of Florida, Department of Pathology, Immunology and Laboratory Medicine, Gainesville, FL, ³University of Florida, Department of Infectious Diseases and Pathology, Gainesville, FL

Presented By: William Donelan, PhD

Poster #13

TISSUE MACROPHAGES AND ALKALINE PHOSPHATASE IN PAPILLARY BIOPSIES OF A STONE FORMER

Paul Dominguez-Gutierrez, Sergei Kusmartsev, Benjamin Canales

University of Florida

Presented By: Paul Dominguez-Gutierrez, PhD

Poster #14

EFFECTIVENESS OF PREVENTATIVE COUNSELING IN RECURRENT STONE FORMERS

Gopal Narang¹, Catherine Wiener², Elizabeth Stephenson¹, Gary Koch², Davis Viprasit¹

¹University of North Carolina School of Medicine, ²UNC Gillings School of Global Public Health

Presented By: Gopal Lakhi Narang, MD

Concurrent Session 4 of 5

3:30 p.m. - 5:00 p.m.

Andrology I Poster Session

Location: McArthur 6

Moderators: Peter N. Kolettis, MD

Birmingham, AL

Justin L. Parker, MD

Tampa, FL

Poster #15

IS AN OVERNIGHT STAY NECESSARY AFTER PENILE PROSTHESIS INSERTION? FEASIBILITY OF OUTPATIENT PENILE PROSTHESIS INSERTION

Benjamin Dropkin, MD¹, William French, BS², Sophia Delpe, MD¹, Douglas Milam, MD¹, Melissa Kaufman, MD, PhD¹

¹Vanderbilt University Medical Center, ²Vanderbilt University School of Medicine

Presented By: Benjamin M. Dropkin, MD

Poster #16

INFLATABLE PENILE PROSTHESIS USING REAR-TIP EXTENDERS: DEVICE OUTCOMES WITH 5-YEAR FOLLOW-UP DATA FROM A SINGLE HIGH-VOLUME IMPLANTER

Andrew Gabrielson, Nickolas Scherzer, Laith Alzweri, Jacob W Greenberg, Matthew Cowper, Wayne J. G. Hellstrom

Tulane University School of Medicine

Presented By: Andrew Gabrielson, BA

- Poster #17** **DEVELOPMENT OF A CATALOG OF DISTAL CYLINDER COMPLICATIONS REQUIRING REVISION PENILE PROSTHESIS SURGERY**
Bruce Kava, MD¹, Amanda Levine, BS¹, Diana Lopategui, MD^{1,2}, Maria Becerra, MD¹
¹University of Miami Miller School of Medicine, ²Mt Sinai Medical Center Miami, Florida
Presented By: Bruce R. Kava, MD
- Poster #18** **COMPARISON OF COMPLICATION RATES RELATED TO PENILE PROSTHESIS AND ADVANCE MALE SLINGS VERSUS PENILE PROSTHESIS AND ARTIFICIAL URINARY SPHINCTERS: NATIONAL MULTI-INSTITUTIONAL ANALYSIS OF NSQIP DATABASE**
Omer Raheem, MD¹, Mahmoud Khalil², Mohammed Kamel, MD
¹Tulane Urology, ²UAMS
Presented By: Omer Raheem, MD
- Poster #19** **CURVATURE CORRECTION TECHNIQUES FOR RESIDUAL CURVATURE AFTER PENILE PROSTHESIS PLACEMENT: INTRAOPERATIVE OBJECTIVE DATA**
Gerard Henry, Bryan Kansas, Tobias Kohler, Edward Karpman, William Brant, Brian Christine, Mohit Khera, LeRoy Jones, Nelson Bennett, Eugene Rhee, Kavina Jani, Anthony Bella
Presented By: Gerard D. Henry, MD
- Poster #20** **EVALUATION OF COMPLICATION RATES RELATED TO SURGICAL MANAGEMENT OF CONCURRENT ERECTILE DYSFUNCTION AND PEYRONIE'S DISEASE: NATIONAL MULTI-INSTITUTIONAL ANALYSIS OF THE NSQIP DATABASE**
Omer Raheem, MD¹, Mahmoud Khalil, MD², Mohamed Kamel, MD²
¹Tulane Urology, ²UAMS
Presented By: Omer Raheem, MD
- Poster #21** **OUTCOMES OF RESTOREX PENILE TRACTION THERAPY IN MEN WITH PD: A RANDOMIZED, CONTROLLED TRIAL**
Kevin Hebert, Jason Joseph, Matthew Ziegelmann, Joshua Savage, Tobias Kohler, Landon Trost
Mayo Clinic Rochester
Presented By: Kevin Joseph Hebert, MD
- Poster #22** **COMBINATION OF COLLAGENASE CLOSTRIDIUM HISTOLYTICUM AND PENILE TRACTION WITH RESTOREX RESULTS IN GREATER IMPROVEMENTS IN CURVATURE AND LENGTH IN MEN WITH PEYRONIE'S DISEASE**
Jack Andrews, MD, Manof Alom, M.B.BS, Tobias Kohler, MD, Landon Trost, MD
Mayo Clinic
Presented By: Jack Andrews, MD
- Poster #23** **COLLAGENASE CLOSTRIDIUM HISTOLYTICUM (CCH) ATTENUATES HUMAN CORPUS CAVERNOSUM CONTRACTION IN VITRO**
Laith Alzweri¹, Serap Gur², Sudha Talwar¹, Suresh Sikka¹, Asim Abdel-Mageed¹, Wayne J. G. Hellstrom¹
¹Tulane University School of Medicine, ²Ankara University
Presented By: Laith Alzweri, MD

Poster #24

CONDITIONED MEDIA OF MESENCHYMAL STEM CELLS AS A NOVEL THERAPEUTIC FOR ERECTILE DYSFUNCTION

Ethan Matz, MD¹, Xin Gu, MD PhD², Lei Dou, MD², Cara Clouse, DVM², Ryan Terlecki, MD³, Yuanyuan Zhang, MD PhD², James Yoo, MD PhD², Anthony Atala, MD³, John Jackson, PhD²
¹Wake Forest School of Medicine, ²Wake Forest Institute for Regenerative Medicine, ³Wake Forest Baptist Medical Center
Presented By: Ethan Matz, MD

Poster #25

PHOSPHODIESTERASE-5 INHIBITORS AND THE RISK OF MELANOMA: NO SIGNIFICANT PUBLIC HEALTH RISK

George Wayne, MD¹, Bryan Herzog, BS², Juan Cedeno, MD¹, Maurilio Garcia, MD¹, Elizabeth Nagoda, MD¹, Alan Polackwich, MD¹
¹Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL, ²Florida International University College of Medicine, Miami, FL
Presented By: George Wayne, MD

Poster #26

ASSOCIATION OF PHOSPHODIESTERASE 5 INHIBITORS WITH SKIN CANCERS IN THE US VETERAN POPULATION

Margaret Higgins, MD¹, Alexander Christie, MD, Pedro Vera, PhD², Matthew Lane, PharmD², Sandeep Kumar, MD², David Preston, MD¹
¹Univ of Kentucky, Department of Urology, ²VA Medical Center, Lexington KY
Presented By: Margaret Higgins, MD

Poster #27

AGE RELATED PRESENCE OF SPERMATOGONIA IN KLINEFELTER SYNDROME PATIENTS: A SYSTEMATIC REVIEW OF THE LITERATURE AND META-ANALYSIS

Nicholas Deebel, MD^{1,2}, Guillermo Galdon, MD¹, Kimberly Stogner-Underwood, MD³, Stuart Howards, MD², Stanley Kogan, MD^{1,2}, Anthony Atala, MD^{1,2}, Hooman Sadri-Ardekani, MD, PhD^{1,2}
¹Wake Forest Institute for Regenerative Medicine (WFIRM), Winston-Salem, NC, ²Wake Forest School of Medicine, Department of Urology, Winston-Salem, NC, ³Wake Forest School of Medicine, Department of Pathology, Winston-Salem, NC
Presented By: Nicholas Allen Deebel, MD

Poster #28

NUMBERS OF SPERMATOGONIAL CELLS IN UNDESCENDED TESTES ARE LOWER THAN NORMAL, REGARDLESS TO THE AGE OF ORCHIOPEXY

Abinav Udayar¹, Demetri Hodges¹, Barber Heather¹, Guillermo Galdon¹, Nima Pourhabibi Zarandi¹, Kimberly Stogner-Underwood², Shadi Qasem², Stanley Kogan^{1,3}, Anthony Atala^{1,3}, Hooman Sadri-Ardekani^{1,3}
¹Wake Forest Institute for Regenerative Medicine (WFIRM), ²Department of Pathology, ³Department of Urology, Wake Forest School of Medicine, Winston-Salem, NC
Presented By: Hooman Sadri, MD, PhD

4:00 p.m. - 5:00 p.m.

Video Session I

Location: McArthur 4

Moderators: David D. Thiel, MD
Jacksonville, FL
Davis P. Viprakasit, MD
Chapel Hill, NC

Video #1

ROBOT-ASSISTED LAPAROSCOPIC EXCISION OF INTRAVESICAL BLADDER MESH

Ahmad Azzawe, MD, Julia Willingham, MD, Alexander Gomelsky, MD
LSUHealth Department of Urology, Shreveport, LA
Presented By: Ahmad Azzawe, MD

Video #2

ROBOTIC ASSISTED LAPAROSCOPIC LEFT BUCCAL MUCOSAL URETEROPLASTY

Adnan Dervishi, MD, Jamie Messer, MD, Kellen Choi, DO
University of Louisville School of Medicine, Department of Urology, Louisville, KY
Presented By: Adnan Dervishi, MD

Video #3

ROBOTIC-ASSISTED LAPAROSCOPIC REPAIR OF BLADDER NECK STENOSIS USING A BUCCAL MUCOSA GRAFT

Omotola Ashorobi, M.D., Nathan Mendoza, M.D., Patrick Selph, M.D.
University of Alabama at Birmingham Department of Urology
Presented By: Omotola Ashorobi, MD

Video #4

ROBOT ASSISTED URETEROURETEROSTOMY WITH NEPHROPEXY FOR RECURRENT PROXIMAL URETERAL STRICTURE

Russell Libby¹, Amanda Raines¹, Weil Lai², Raju Thomas, MD, FACS, MHA
¹Tulane University, ²Hunterdon Healthcare
Presented By: Russell Phip Libby, MD

Video #5

ROBOTIC EXCISION OF A PROSTATIC UTRICLE CYST

John Moore, Raymond Pak
Mayo Clinic Florida
Presented By: John R. Moore, MD

Video #6

ROBOTIC-ASSISTED LAPAROSCOPIC URETEROCALICOSTOMY IN NON-DILATED COLLECTING SYSTEM

Mohammed Said, Aaron Lay
Department of Urology
Presented By: Mohammed Adnan Said, MD

Concurrent Sessions End

THURSDAY, MARCH 14, 2019

OVERVIEW

6:00 a.m. - 5:10 p.m.	Registration/Information Desk Open <i>Location: FLW Registration Desk</i>
6:00 a.m. - 5:10 p.m.	Speaker Ready Room Open <i>Location: FLW McDowell</i>
7:30 a.m. - 10:30 a.m.	Spouse/Guest Hospitality Suite Open <i>Location: Taliesin</i>
9:00 a.m. - 4:00 p.m.	Exhibit Hall Open <i>Location: FLW Salons A-F</i>
6:00 p.m. - 8:00 p.m.	Welcome Reception <i>Location: FLW Salons A-F</i>

Concurrent Sessions Begin

Concurrent Session 1 of 4

7:00 a.m. - 8:30 a.m.	Imaging, Simulation, and Training Poster Session <i>Location: McArthur 5</i> Moderators: John R. Bell, MD <i>Lexington, KY</i> Marcos R. Perez-Brayfield, MD, FAAP, FACS <i>Caguas, PR</i>
Poster #29	UTILITY OF ENDOUROLOGIC TRAINING SIMULATION AMONG UROLOGY TRAINEES Jeff Goodwin, Jason Bylund, Amul Bhalodi, John Roger Bell <i>University Of Kentucky</i> Presented By: Jeffrey D. Goodwin, MD
Poster #30	EVALUATION OF PATIENT VARIABLES THAT INFLUENCE PREDICTIVE FORMULAS FOR DETERMINING URETERAL STENT LENGTH Jennifer Kuo, MD, Andrew Rabley, MD, Paula Domino, MD, Brandon Otto, MD, M. Louis Moy, MD, Vincent G. Bird, MD <i>University of Florida, Department of Urology, Gainesville, FL</i> Presented By: Jennifer Kuo, MD
Poster #31	PELVIC DIGITAL TOMOSYNTHESIS FOR THE EVALUATION OF DISTAL URETERAL CALCULI: ORGAN SPECIFIC DOSES AND EFFECTIVE DOSE COMPARED WITH NON-CONTRAST COMPUTED TOMOGRAPHY Brenton Winship, MD ¹ , Justin Raudabaugh ² , Giao Nguyen ² , Russell Terry, MD ¹ , Daniel Wollin, MD ¹ , Evan Carlos, MD ¹ , Terry Yoshizumi, PhD ² , Glenn Preminger, MD ¹ , Michael Lipkin, MD ¹ <i>¹Duke University Division of Urology, ²Duke University Medical Physics</i> Presented By: Brenton Winship, MD

Poster #32

ASSESSMENT OF RADIATION SAFETY KNOWLEDGE AMONG UROLOGY RESIDENTS IN THE UNITED STATES

Marilyn Hopkins, John Loomis, Andrew Harris, Jason Bylund
University of Kentucky

Presented By: Marilyn K. Hopkins, MD

Poster #33

IMPROVING RESIDENT COMPLIANCE WITH REPORTING OF RADIATION EXPOSURE BY LINKING DOSIMETERS TO MOBILE DEVICES

Aaron Bloch^{1,2}, Paul Bloch¹, Elizabeth Tourville¹, Cynthia Sharadin¹, Kristen Marley¹, W. Scott Rone³, Cheri Lowe⁴, Howard Hasen¹, Christopher Ledbetter¹, Anthony Patterson¹, Robert Wake¹

¹*University of Tennessee Health Science Center, Department of Urology, Memphis, TN*, ²*University of California San Diego, College of Medicine, San Diego, CA*, ³*University of Tennessee Health Science Center, Department of Radiation Safety, Memphis, TN*, ⁴*University of Tennessee Health Science Center, Department of Graduate Medical Education, Memphis, TN*
Presented By: Paul J. Bloch, MD

Poster #34

PATIENT CRITERIA ON EMERGENCY PHYSICIAN ASSESSMENT TO REDUCE CT UTILIZATION: AN E-QUAL STUDY

John Fisher, MD¹, Matthew Sorensen, MD¹, Michael Jennings, MD¹, Jonathan Angelle, MD¹, Jerry Edwards, DO², James Biennu, MD¹

¹*University of Tennessee Medical Center-Knoxville Department of Urology*, ²*University of Tennessee Medical Center-Knoxville Department of Emergency Medicine*
Presented By: Matthew Sorensen, MD

Poster #35

EVALUATING THE CLINICAL UTILITY OF MRI PREDICTING CLINICAL TO PATHOLOGIC TUMOR STAGE CHANGES

Brendon Gros, Jessie Gills, Danica May, Robert Helm, David Thompson, Scott Delacroix

LSUHSC - New Orleans, Dept of Urology
Presented By: Brendon J. Gros

Poster #36

PROSTATE IMAGING REPORTING AND DATA SYSTEM VERSION 2: A PREDICTOR OF BIOPSY OUTCOME?

Joshua A Earl, MD¹, Oliver Benton IV, MD¹, Matthew D Sorensen, MD¹, Cassidy J Clark, BS², Ryan B Pickens, MD¹, Wesley M White, MD¹

¹*University of Tennessee Graduate School of Medicine, Department of Urology, Knoxville, TN*, ²*University of Tennessee Health Science Center, College of Medicine, Memphis, TN*
Presented By: Joshua Adam Earl, MD

Poster #37

ACCURACY OF CONTRAST-ENHANCED ULTRASOUND (CEUS) TO DETECT RENAL CELL CARCINOMAS (RCC) IN PATIENTS WITH END STAGE RENAL DISEASE (ESRD)

Andrew Ostrowski, Amanda Kahn, Isabella Galler, Melanie Caserta, and David Thiel
Mayo Clinic Florida

Presented By: Andrew K. Ostrowski, MD, MSc

Poster #38

**SIMULATION TRAINING IN PROSTHETIC UROLOGY:
CADAVERIC LABORATORY TRAINING IMPROVES
TRAINEE'S SURGICAL CONFIDENCE AND KNOWLEDGE**

Aaron Lentz, MD¹, Dayron Rodriguez, MD, MPH², Leah Davis, MS¹, Michel Apoj², Evan Carlos, MD¹, Price Kerfoot, MD³, Paul Perito, MD⁴, Gerard Henry, MD⁵, Leroy Jones, MD⁶, Rafael Carrion, MD⁷, John Mulcahy, MD, PhD⁵, Ricardo Munarriz, MD⁹
¹Duke University Medical Center, ²Boston Medical Center, ³VA Boston Healthcare System, ⁴Coral Gables Hospital, ⁵ArkLaTex Urology, ⁶Urology San Antonio, ⁷University of South Florida, ⁸University of Alabama, ⁹Boston Medical Center, Boston, MA
Presented By: Evan Carlos, MD

Poster #39

**ESTABLISHING A FUNCTIONAL AND REPRODUCIBLE
ANATOMICAL CLASSIFICATION SYSTEM FOR PEYRONIE'S
DISEASE WITH DUPLEX DOPPLER ULTRASOUND**

Katherine Cockerill¹, Colleen Ball¹, Grace Edwards², Peter Cannizzo², Jordan Cochuyt¹, Gregory Broderick¹
¹Mayo Clinic Jacksonville, ²Mayo Clinic
Presented By: Katherine Cockerill, MD

Poster #40

**USING A ROOT CAUSE ANALYSIS LEARNING
CURRICULUM FOR QUALITY IMPROVEMENT IN UROLOGY
RESIDENCY**

Vince DiCarlo, Andrew Harris
Department of Urology, University of Kentucky, Lexington, Kentucky
Presented By: Vince DiCarlo

Poster #41

**THE CAREER EXPECTATIONS AND PREFERENCES OF
UROLOGY APPLICANTS**

Julia Han¹, Andrew Rabley¹, Alex Vlasak², Shahab Bozorgmehri¹, Vincent Bird¹, Louis Moy¹
¹University of Florida Department of Urology, ²University of Florida College of Medicine
Presented By: Julia Han, MD

Poster #42

**BURNOUT AND EMPATHY AMONG ACADEMIC UROLOGY
FACULTY AND TRAINEES**

Andrew Leung, Mark Henry, Chad Ritenour, Christopher Filson
Emory University Department of Urology
Presented By: Andrew K. Leung, MD, MPH

Concurrent Session 2 of 4

7:00 a.m. - 8:30 a.m.

Prostate Cancer Poster Session

Location: McArthur 6

Moderators: John G. Pattaras, MD, FACS

Atlanta, GA

Jonathan Silberstein, MD, MBA, FACS

New Orleans, LA

Poster #43

**OPTIMIZING SURGICAL MARGINS IN HIGH RISK PROSTATE
CANCER PATIENTS USING PREOPERATIVE MRI FOR
SURGICAL PLANNING**

John Moore, Joseph Ivey, Ryan Peacock, Raymond Pak
Mayo Clinic Florida
Presented By: John R. Moore, MD

Poster #44

COMPARISON OF MICRO-ULTRASOUND AND MULTIPARAMETRIC MRI IMAGING FOR PROSTATE CANCER: AN INTERNATIONAL META-ANALYSIS

Giovanni Lughezzani, MD¹, Ander Astobieta, MD², Frederic Staerman, MD³, Eric Klein, MD⁴, Robert Abouassaly, MD⁴, Ahmed El-Shefai, MD⁴, Gregg Eure, MD, FACS⁵
¹*Instituto Clinico Humanitas, Rozzano, Italy*, ²*Urología Clínica, Clínica IMQ Zorrotzaurre, Spain*, ³*Polyclinique les Bleuets, Reims, France*, ⁴*Glickman Urological Institute, Cleveland Clinic, Cleveland, USA*, ⁵*Urology of Virginia, Virginia Beach, USA*
Presented By: Gregg R. Eure, MD

Poster #45

CELL CYCLE PROGRESSION SCORE FROM BIOPSY SPECIMEN OUTPERFORMS UPGRADING OR UPSTAGING POST-RP FOR PREDICTING BIOCHEMICAL RECURRENCE AFTER SURGERY

Kristen Gurtner, MD, Stephen Bardot, MD, Jay Bishoff, MD, Stephen Freedland, Saradha Rajamani, MStat, Steven Stone, PhD, Thorsten Schlomm, MD, Daniel Canter, MD
Presented By: Kristen Elizabeth Gurtner, MD

Poster #46

VALIDATION OF MSKCC PRE-PROSTATECTOMY NOMOGRAM IN MEN WHO UNDERGO TARGETED BIOPSY USING LESION-BASED AGGREGATE CORE HISTOLOGY REPORTING

Zachary Glaser, MD¹, Jennifer Gordetsky, MD², Sejong Bae, PhD³, Jeffrey Nix, MD¹, Soroush Rais-Bahrami, MD^{1,4}
¹*University of Alabama at Birmingham, Department of Urology*, ²*University of Alabama at Birmingham, Department of Pathology*, ³*University of Alabama at Birmingham, Division of Preventative Medicine*, ⁴*University of Alabama at Birmingham, Department of Radiology*
Presented By: Zachary A. Glaser, MD

Poster #47

INTERPRETATION OF DOMAIN SCORES ON THE EXPANDED PROSTATE CANCER INDEX COMPOSITE: HOW DOES THE DOMAIN SCORE TRANSLATE INTO FUNCTIONAL OUTCOME?

Aaron Laviana¹, Agustin Hernandez¹, Zhiguo Zhao¹, Li-Ching Huang¹, Tatsuki Koyama¹, Ralph Conwill², Irene Fuerer¹, Karen Hoffman³, David Penson¹, Daniel Barocas¹
¹*Vanderbilt University Medical Center*, ²*Vanderbilt Ingram Cancer Center*, ³*MD Anderson Cancer Center*
Presented By: Aaron Laviana, MD

Poster #48

SHOULD PATIENTS WITH HIGH RISK PROSTATE CANCER UNDERGO A MODIFIED BLADDER NECK DISSECTION DURING ROBOTIC ASSISTED LAPAROSCPOIC PROSTATECTOMY (RALP)?

John Moore, Ryan Peacock, Joseph Ivey, Raymond Pak
Mayo Clinic Florida
Presented By: Joseph Ivey

Poster #49

SALVAGE PELVIC LYMPHADENECTOMY IN PROSTATE CANCER PATIENTS WITH PERSISTENT BIOCHEMICAL RECURRENCE FOLLOWING PRIOR RADICAL PROSTATECTOMY AND SALVAGE RADIOTHERAPY WHO HAVE ISOLATED FLUCICLOVINE-PET DETECTED PELVIC NODES

Mehrdad Alemozaffar, MD, MS¹, Timothy Quinn, MD¹, Martin Sanda, MD¹, David Schuster, MD²

¹*Emory University School of Medicine, Department of Urology,*

²*Emory University School of Medicine, Department of Radiology*

Presented By: Mehrdad Alemozaffar, MD, MS

Poster #50

PREDICTORS OF CONTINENCE AFTER SALVAGE ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY FOR RECURRENT PROSTATE CANCER

Fikret Onol, MD, Hariharan Ganapathi, MD, Seetharam Bhat, MD, Travis Rogers, MD, Cathy Jenson, Vipul Patel, MD
Florida Hospital Global Robotics Institute

Presented By: Fikret Fatih Onol, MD, FEBU

Poster #51

WITHDRAWN

Poster #52

EVALUATING THE SAFETY OF SPACEOAR® FROM A UROLOGIC PERSPECTIVE

John Moore, Kevin Parikh, Ronak Patel, Kaitlynn Custer, Todd Igel

Mayo Clinic Florida

Presented By: John R. Moore, MD

Poster #53

SALVAGE CRYOABLATION OR PROSTATE WITH TRANSPERINEAL DENONVILLIERS' SPACE EXPANSION WITH SPACEOAR: POSTOPERATIVE OUTCOMES

Caitlin Shepherd, Harry Clarke, Professor of Urology
Medical University of South Carolina

Presented By: Caitlin Shepherd, MD

Poster #54

HIGH INTENSITY FOCUSED ULTRASOUND FOR PATIENTS FOR FOCAL PROSTATE CANCER IN ALL GRADE GROUPS

Bruno Nahar, Maria Becerra, Abhishek Bhat, Diana Lopategui, Nachiketh Soodana Prakash, Mark Gonzalgo, Chad Ritch, Sanno J Punnen, Dipen Parekh

Department of Urology, Jackson Memorial Hospital/University of Miami Miller School of Medicine, Miami, FL 33136, USA.

Presented By: Maria F. Becerra, MD

Poster #55

THE PROSPER TRIAL: PROSTATE-SPECIFIC ANTIGEN (PSA)- AND CHEMOTHERAPY-RELATED ENDPOINTS IN PATIENTS WITH NONMETASTATIC CASTRATION-RESISTANT PROSTATE CANCER TREATED WITH ENZALUTAMIDE

Kelvin Moses¹, David Penson¹, Neal Shore², Fred Saad³, Jennifer Sugg⁴, Joyce Steinberg⁴, Katharina Modelska⁵, Maha Hussain⁶

¹*Vanderbilt University,* ²*Carolina Urologic Research Center,*

³*University of Montreal Hospital Center (CHUM),* ⁴*Astellas*

Pharma, Inc., ⁵*Pfizer Inc.,* ⁶*Robert H. Lurie Comprehensive*

Cancer Center

Presented By: Kelvin A. Moses, MD, PhD, FACS

Poster #56

UPGRADING RATES OF A RACIALLY DIVERSE GROUP OF VETERANS ON ACTIVE SURVEILLANCE

Jacob W. Greenberg, Amanda R. Raines, MD, Allison H. Feibus, Gabriel Z. Leinwand, MD, L. Spencer Krane, MD, Jonathan L. Silberstein, MD, FACS, MBA

Tulane University School of Medicine

Presented By: Jonathan Silberstein, MD, MBA, FACS

Concurrent Session 3 of 4

7:00 a.m. - 8:30 a.m.

Urethral Disease and Voiding Dysfunction Podium Session

Location: FLW Salons G-J

Moderators: Shubham Gupta, MD

Lexington, KY

John M. Lacy, MD

Knoxville, TN

7:00 a.m. #23

A CRITICAL ANALYSIS OF FEMALE URETHRAL STRICTURE DISEASE: PATHOLOGIC AND HISTOLOGIC PARAMETERS FROM 7 PATIENTS UNDERGOING DORSAL VAGINAL GRAFT URETHROPLASTY

Steven Petrou, MD¹, Xochiquetza Geiger, MD¹, Ram Pathak, MD², David Thiel, MD¹

¹Mayo Clinic, ²Wake Forest

Presented By: Ram Pathak, MD

7:07 a.m. #24

FEMALE URETHRAL STRICTURE IS DECREASING IN THE UNITED STATES: ANALYSIS OF THE HEALTH CARE COST AND UTILIZATION PROJECT

Urszula Kowalik, MD, Andrew Peterson, MD, FACS

Duke University Medical Center

Presented By: Urszula Kowalik, MD

7:14 a.m. #25

ASSOCIATED MORBIDITIES OF URETHRAL STRICTURE AND URETHRAL INJURY IN A HIGH-RISK POPULATION

Ramphis Morales-López, Sonia Cornier-Martinez, Antonio Puras-Baez, Timoteo Torres-Santiago

Urology Section, University of Puerto Rico, San Juan, PR

Presented By: Ramphis Morales-Lopez, MD

7:21 a.m. #26

A RETROSPECTIVE ANALYSIS OF COMBINED VENTRAL FASCIOTANEOUS SKIN FLAP AND DORSAL BUCCAL MUCOSA GRAFT VS. OVERLAPPING BUCCAL MUCOSA GRAFT FOR URETHRAL STRICTURE DISEASE

Alexander Nocera, MS¹, Omotola Ashorobi, MD², Patrick Selph, MD²

¹University of Alabama School of Medicine, ²UAB Department of Urology

Presented By: Alexander Nocera, MS

7:28 a.m. #27

LONG TERM OUTCOMES OF ONE-STAGE AUGMENTATION ANTERIOR URETHROPLASTY: A META-ANALYSIS

Cooper Benson, MD¹, Gen Li, PhD², Steven Brandes, MD³

¹Tulane University Department of Urology, ²Columbia University Department of Biostatistics, ³Columbia University Department of Urology

Presented By: Cooper Roth Benson, MD

- 7:35 a.m. #28 PROPHYLACTIC ANTIBIOTICS AFTER URETHROPLASTY DO NOT REDUCE URETHRAL STRICTURE DISEASE RECURRENCE**
 Omotola Ashorobi, MD¹, Joseph Fougousse, MD¹, Kimberly Martin, PhD², John Selph, MD¹
¹University of Alabama at Birmingham, Dept. of Urology,
²University of Alabama at Birmingham, Dept. of Epidemiology
 Presented By: Omotola Ashorobi, MD
- 7:42 a.m. #29 ENGINEERING OF VOLUMETRIC SKELETAL MUSCLE TISSUE FOR ACCELERATED RESTORATION OF PELVIC FLOOR MUSCLE FUNCTION**
 Ji Hyun Kim, Myung Jae Jeon, Ickhee Kim, Sang Jin Lee, James Yoo, John Jackson, In Kap Ko, Anthony Atala
 Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD
- 7:49 a.m. #30 STRIKING DIFFERENCES IN THE EFFECTS OF β 3-ADRENOCEPTOR AGONISTS AND ANTIMUSCARINCS ON BLADDER FILLING/VOIDING FUNCTION IN CHRONIC SPINAL CORD INJURED RATS**
 Bradley Potts, MD¹, Danielle Degoski, BS², Jillene Brooks, BS², Matthew Fraser, PhD^{1,3}
¹Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC, ²Institute for Medical Research, Durham, NC, ³Durham VA Medical Center, Durham, NC
 Presented By: Bradley A. Potts, MD
- 7:56 a.m. #31 CLINICAL EXAMINATION OF THE FEET AND PELVIC ANATOMY CAN PREDICT SEVERITY OF URINARY INCONTINENCE: INTRODUCING THE NEURO-UROLOGICAL INDEX**
 Madeline Cancian, R. Grady Bruce, Rizk El-Galley, Niall Galloway
 Emory University
 Presented By: Madeline Jones Cancian, MD
- 8:03 a.m. #32 LONG-TERM OUTCOMES AND COMPLICATIONS OF THE TRANSOBTURATOR MIDURETHRAL SLING**
 Librado Valadez, Department of Urology, Trapper Munn, School of Medicine, Clifton Frilot II, School of Allied Health, Alex Gomelsky, Department of Urology
 LSUHSC-Shreveport
 Presented By: Librado Valadez, MD
- 8:10 a.m. #33 OUTCOMES OF MIDURETHRAL SLINGS IN THE OBESE WOMAN**
 James Pilkington, MD, Adnan Fazili, Clifton F. Frilot II, PhD, Alex Gomelsky, MD
 LSUHSC-Shreveport
 Presented By: James E. Pilkington, MD

- 8:17 a.m. #34 URODYNAMICS ON YOU TUBE: WHAT ARE PATIENTS WATCHING?**
 Julia Han¹, Hayley Oberhofer², Ashley Gordon², Andrew Rabley¹, Scott Rizzi², Shahab Bozorgmehri³, Louis Moy¹
¹University of Florida Department of Urology, ²University of Florida College of Medicine, ³University of Florida Department of Urology
 Presented By: Julia Han, MD
- 8:24 a.m. #35 URODYNAMIC TESTING AFFECTS TREATMENT DECISIONS IN PROSTATE CANCER SURVIVORS PRESENTING WITH INCONTINENCE**
 Urszula Kowalik, MD¹, Arman Kahokehr, MD, PhD², Andrew Peterson, MD, FACS¹
¹Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC, ²Division of Surgical Specialties Anaesthetics, University of Adelaide, Adelaide, Australia
 Presented By: Urszula Kowalik, MD

Concurrent Session 4 of 4

- 7:30 a.m. - 8:30 a.m. Kidney Cancer Podium Session**
 Location: McArthur 1-3
 Moderators: Peter E. Clark, MD
 Charlotte, NC
 Ashok Hemal, MD
 Winston-Salem, NC
- 7:30 a.m. #36 ASSOCIATION OF CONTACT SURFACE AREA WITH ROBOTIC PARTIAL NEPHRECTOMY OUTCOMES**
 Ashley Shumate, MD¹, Isabella Galler², Colleen Ball, MS³, Kaitlynn Custer², David Thiel, MD¹
¹Department of Urology, Mayo Clinic, Jacksonville, FL, ²Department of Health Sciences Research, Mayo Clinic, Jacksonville, FL, ³Division of Biomedical Statistics and Informatics, Mayo Clinic
 Presented By: Ashley Shumate, MD
- 7:37 a.m. #37 OUTCOMES IN PATIENTS UNDERGOING CYTOREDUCTIVE NEPHRECTOMY**
 Danica May, MD, Marc Matrana, MD, Kathleen Lata-Arias, MPH, Daniel Canter, MD
 Ochsner Health Systems
 Presented By: Danica May, MD

- 7:44 a.m. #38 IMPACT OF CYTOREDUCTIVE NEPHRECTOMY ON OVERALL SURVIVAL OUTCOMES IN PATIENTS WITH METASTATIC RENAL CELL CARCINOMA AND BONE METASTASES**
 JG Pavlinec¹, CJD Wallis², B Bhindi³, R Satkunasingam⁴, Z Klaassen⁵, JK Lee⁶, J Nayak⁷, S Bozorgmehr⁸, PL Crispen¹, P O'Malley¹
¹Dept of Urology, University of Florida, ²Div of Urology, University of Toronto, ³Dept of Urology, University of Calgary, ⁴Dept of Urology, Houston Methodist Hospital, ⁵Div of Urology, Augusta University Medical Center, ⁶Dept of Urology, Lionsgate Hospital, British Columbia, ⁷Dept of Urology, University of Manitoba, ⁸Div of Nephrology, Hypertension and Renal Transplantation, University of Florida
 Presented By: Jonathan George Pavlinec, MD
- 7:51 a.m. #39 IMPACT OF TREATMENT FACILITY VOLUME ON OVERALL SURVIVAL OUTCOMES IN PATIENTS UNDERGOING CYTOREDUCTIVE NEPHRECTOMY FOR METASTATIC RENAL CELL CARCINOMA**
 JG Pavlinec¹, CJD Wallis², B Bhindi³, R Satkunasingam⁴, Z Klaassen⁵, JK Lee⁶, J Nayak⁷, S Bozorgmehr⁸, PL Crispen¹, P O'Malley¹
¹Dept of Urology, University of Florida, ²Div of Urology, University of Toronto, ³Dept of Urology, University of Calgary, ⁴Dept of Urology, Houston Methodist Hospital, ⁵Div of Urology, Augusta University Medical Center, ⁶Dept of Urology, Lionsgate Hospital, British Columbia, ⁷Dept of Urology, University of Manitoba, ⁸Div of Nephrology, Hypertension and Renal Transplantation, University of Florida
 Presented By: Jonathan George Pavlinec, MD
- 7:58 a.m. #40 NOVEL MIRCO RNA BASED SIGNATURE CORRELATES WITH SURVIVAL IN PATIENTS WITH CLEAR CELL RENAL CELL CARCINOMA**
 Jacob W. Greenberg^{1,2}, Stephen Proctor, MD^{1,2}, Ibifiri Wilcox^{1,2}, Jonathan Silberstein, MD^{1,2}, L. Spencer Krane, MD^{1,2}
¹Tulane University School of Medicine, ²Urology Department
 Presented By: Louis Spencer Krane, MD
- 8:05 a.m. #41 MICRORNA SIGNATURE PROVIDES A NOVEL BIOMARKER FOR OVERALL SURVIVAL IN PAPILLARY RENAL CELL CARCINOMA**
 Jacob W. Greenberg, Stephen Proctor, MD, Ibifiri Wilcox, Jonathan L. Silberstein, MD, FACS, MBA, L. Spencer Krane, MD
 Tulane School of Medicine
 Presented By: Louis Spencer Krane, MD

8:12 a.m. #42

RACIAL DIFFERENCES IN THE PROGNOSTIC CAPABILITIES OF SARCOPENIA IN PREDICTING OVERALL SURVIVAL AFTER SURGERY FOR PATIENTS WITH LOCALIZED RENAL CELL CARCINOMA

Milton Williams¹, Amir Khan¹, Dattatraya Patil, MBBS, MPH¹, KC Biebighauser, MD¹, Sara Psutka, MD, MSCR¹, Aarti Sekhar, MD², Kenneth Ogan, MD¹, Mehmet Bilen, MD³, Viraj Master, MD¹

¹Department of Urology, Emory University School of Medicine, Atlanta, GA, USA, ²Department of Radiology, Emory University School of Medicine, Atlanta, GA, USA, ³Department of Hematology and Medical Oncology, Emory University School of Medicine, Atlanta, GA, USA

Presented By: Milton A'Keem Williams

Concurrent Sessions End

8:30 a.m. - 9:30 a.m.

AUA Course of Choice Lecture: Management of Non-Muscle Invasive Bladder Cancer: Practical Solutions for Common Problems

AUA Course of Choice

Guest Speaker: Cheryl T. Lee, MD
Columbus, OH

9:30 a.m. - 9:45 a.m.

SESAUA Update

President: Scott B. Sellinger, MD, FACS
Tallahassee, FL

9:45 a.m. - 10:15 a.m.

Break/Visit Exhibits

Location: FLW Salons A-F

10:15 a.m. - 11:30 a.m.

Panel Discussion: Bladder Cancer 2019

Moderator: Stephen E. Strup, MD, FACS
Lexington, KY

Panelists: Mark L. Gonzalgo, MD, PhD
Miami, FL
Andrew C. James, MD
Lexington, KY
Cheryl T. Lee, MD
Columbus, OH

11:30 a.m. - 12:15 p.m.

State-of-the-Art Lecture: Prostate Cancer Active Surveillance and MRI-Targeted Biopsy

Speaker: Soroush Rais-Bahrami, MD
Birmingham, AL

12:15 p.m. - 1:30 p.m.

Industry Sponsored Lunch Symposium

Location: McArthur 1-3

12:15 p.m. - 1:30 p.m.

Industry Sponsored Lunch Symposium

Location: McArthur 4

Concurrent Sessions Begin

Concurrent Session 1 of 5

- 1:30 p.m. - 5:00 p.m. Endourology Sub-Plenary Session**
Location: FLW Salons G-J
Moderators: Benjamin K. Canales, MD, MPH
Gainesville, FL
Charles D. Scales Jr., MD, MSHS
Durham, NC
- 1:30 p.m. - 2:50 p.m. Endourology Podium Session**
Location: FLW Salons G-J
Moderators: Benjamin K. Canales, MD, MPH
Gainesville, FL
Aaron H. Lay, MD
Atlanta, GA
- 1:30 p.m. #53 CALCIUM OXALATE DISOLUTION AGENT AS AN IRRIGANT DURING URETEROSCOPIC STONE DUSTING: EFFICIENCY AND TOXICOLOGIC ANALYSIS**
Michelle Dill¹, Rachel DeNapoli, BME BS², Steven Arce, PhD¹, Victoria Bird, MD³
¹BME Univestiy of Florida, ²BME Univestiy of Virginia, ³NMARG, Urology Division
Presented By: Michelle Dill
- 1:37 p.m. #54 AVOIDING A LEMON: PERFORMANCE CONSISTENCY OF SINGLE-USE URETEROSCOPES**
Brenton Winship, MD, Russell Terry, MD, Daniel Wollin, MD, Evan Carlos, MD, Glenn Preminger, MD, Michael Lipkin, MD
Duke University Division of Urology
Presented By: Brenton Winship, MD
- 1:44 p.m. #55 URIC ACID NEPHROLITHIASIS: LONG-TERM METABOLIC AND CLINICAL OUTCOMES**
Brandon Otto, MD, Benjamin Canales, MD, Nitin Sharma, MD, Shahab Bozorgmehri, MD, PhD, Vincent Bird, MD
University of Florida
Presented By: Brandon J. Otto, MD
- 1:51 p.m. #56 A COMPARISON OF PATIENT DESIRED OUTCOMES BETWEEN PAIN AND NON-PAIN-FOCUSED PATIENTS FOLLOWING NEPHROLITHIASIS SURGERY**
Nicholas B. Koch¹, Elaine K. Kearney², Catherine Wiener², Gary G. Koch², Leslie D. Lorbacher³, Davis P. Viprakasit³
¹University of North Carolina School of Medicine, Chapel Hill, NC, ²Department of Biostatistics, University of North Carolina, Chapel Hill, NC, ³Department of Urology, University of North Carolina, Chapel Hill, NC
Presented By: Nicholas Burke Koch
- 1:58 p.m. #57 RATE OF OPIOID PRESCRIPTION REFILLING FOLLOWING UROLOGIC STONE SURGERY**
Mohammed Said, Dattatraya Patil, Kenneth Ogan, Akanksha Mehta, Christopher Filson, Aaron Lay
Emory University School of Medicine
Presented By: Mohammed Adnan Said, MD

- 2:05 p.m. #58 THE IMPACT OF ALTERNATIVE ALKALINIZING AGENTS ON 24-HOUR URINE COLLECTION PARAMETERS**
Kohldon Boydston, MD, Brenton Winship, MD, Russell Terry, MD, Leah Davis, MS, Michael Lipkin, MD, Glenn Preminger, MD, Sara Yttri, NP
Duke University Division of Urology
Presented By: Kohldon Boydston, MD
- 2:12 p.m. #59 ASSESSMENT OF ACUTE KIDNEY INJURY RISK IN PATIENTS UNDERGOING PERCUTANEOUS NEPHROLITHOTOMY**
Andrew Rabley¹, Nitin Sharma¹, Shahab Bozorgmehri², Tezcan Ozrazgat-Baslanti², Amir Motaei², Brandon J. Otto¹, Azra Bihorac², Vincent Bird¹
¹*University of Florida, Department of Urology, Gainesville, FL,*
²*University of Florida, Division of Nephrology, Hypertension, and Renal Transplantation, Department of Medicine, Gainesville, FL*
Presented By: Andrew Rabley, MD
- 2:19 p.m. #60 IDENTIFYING A BREAK IN THE CHAIN: AN ANALYSIS OF URETEROSCOPE DAMAGE IN THE HOSPITAL CYCLE**
Margaret Higgins, Jason Bylund, John Roger Bell, Andrew Harris, Amul Bhalodi
Department of Urology, Univ. of Kentucky/Lexington KY USA
Presented By: Margaret Higgins, MD
- 2:26 p.m. #61 CAN ROUTINE POST-OPERATIVE DRAINS AND LABORATORIES BE ELIMINATED FOLLOWING ROBOTIC ASSISTED LAPAROSCOPIC PYELOPLASTY?**
John Moore, Brittany Pace, Kevin Parikh, Colleen Thomas, Kaitlynn Custer, David Thiel
Mayo Clinic Florida
Presented By: John R. Moore, MD
- 2:33 p.m. #62 COST AND UTI RATE FOLLOWING OFFICE CYSTOSCOPY BEFORE AND AFTER IMPLEMENTING NEW STANDARDIZED HANDLING AND STORAGE PRACTICES**
Vincent Roth, BS¹, Benjamin Canales, MD, MPH¹, Pedro Espino-Grosso, MD^{2,1}, Carl Henriksen, MS¹
¹*University of Florida,* ²*University of South Florida*
Presented By: Benjamin Kirk Canales, MD, MPH
- 2:40 p.m. - 2:50 p.m. Q&A**
- 2:50 p.m. - 3:10 p.m. State-of-the-Art Lecture: Big Data: Opportunities and Challenges for Stone Disease**
Location: FLW Salons G-J
Speaker: Ryan S. Hsi, MD
Nashville, TN
- 3:10 p.m. - 3:40 p.m. Break/Visit Exhibits**
Location: FLW Salons A-F

3:40 p.m. - 5:00 p.m. Endourology Panel Discussion
Location: FLW Salons G-J
 Moderator: Brandon J. Otto, MD
Gainesville, FL
 Panelists: Robert Marcovich, MD
Miami, FL
 Nicole L. Miller, MD
Nashville, TN
 Charles D. Scales Jr., MD, MSHS
Durham, NC
 Kyle D. Wood, MD
Birmingham, AL

Concurrent Session 2 of 5

1:45 p.m. - 5:00 p.m. Pediatric Sub-Plenary Session I
Location: McArthur 4

1:45 p.m. - 3:15 p.m. Pediatric Podium Session
Location: McArthur 4

Moderators: Emily Blum, MD
Atlanta, GA
 Luis M. Perez, MD
Charlotte, NC

1:45 p.m. #43 ANALYSIS OF SPERMATOGONIA QUANTITY IN PEDIATRIC TESTES: ESTABLISHING REFERENCE VALUES AND A CLINICAL TOOL TO EVALUATE IMMATURE TESTES

Barber Heather¹, Abinav Udaiyar¹, Demetri Hodges¹, Guillermo Galdon¹, Nima Pourhabibi Zarandi¹, Kimberly Stogner-Underwood², Shadi Qasem², Stanley Kogan^{1,3}, Anthony Atala^{1,3}, Hooman Sadri-Ardekani^{1,3}

¹Wake Forest Institute for Regenerative Medicine, ²Department of Pathology, ³Department of Urology, Wake Forest School of Medicine, Winston-Salem, NC

Presented By: Hooman Sadri, MD, PhD

1:52 p.m. #44 HOW MANY BOYS NEED TO UNDERGO ORCHIOPEXY TO IMPACT TESTICULAR CANCER OUTCOMES?

Margaret Higgins, MD¹, Derek Smith, MS², Dexiang Gao, PhD², Duncan Wilcox, MD³, Nicholas Cost, MD³, Amanda Saltzman, MD¹

¹Dept. of Urology, Univ of Kentucky/Lexington KY, USA, ²Dept. of Pediatrics, Children's Hospital Colorado/Denver CO, USA,

³Dept. of Urology, Children's Hospital Colorado/Denver CO, USA

Presented By: Margaret Higgins, MD

1:59 p.m. #45 OUTCOMES OF AN INTESTINAL CLEAN OUT AND MAINTENANCE (ICOM) PROGRAM IN CHILDREN WITH LOWER URINARY TRACT DYSFUNCTION

Daniel Herz, MD¹, Kelly Stokes, DNP¹, Amanda Carter, MD²

¹UT Erlanger Department of Urology, ²UT Erlanger Department of Urology

Presented By: Daniel Brandon Herz, MD

- 2:06 p.m. #46 OPIOID PRESCRIBING AND USAGE TRENDS IN PEDIATRIC UROLOGY**
 Brandon Garren, MD¹, Marley Lawrence, MD², Peggy McNaull, MD², Richard Sutherland, MD¹, Matthew Nielsen, MD¹, Timothy Bukowski, MD¹, Nathan Woody, CSSBB², Clark McCall, MHA², Karene Ricketts, MD², Brooke Chidgey, MD², Sherry Ross, MD¹
¹University of North Carolina at Chapel Hill, Department of Urology, ²University of North Carolina at Chapel Hill, Department of Anesthesiology
 Presented By: Brandon Garren, MD
- 2:13 p.m. #47 THE ROLE OF HIGH-RESOLUTION DOPPLER ULTRASOUND FOR TESTICULAR LOCALIZATION IN NON-PALPABLE CRYPTORCHID TESTES**
 J. Margaret Lovin, MD¹, Alayna Dauzat¹, Emily F. Kelly, MD¹, Lindsey Leeper, RT, ARDMS¹, Clifton F. Frilot II, PhD¹, John A. Mata, MD¹
¹LSU Health-- Shreveport, Department of Urology, Shreveport, LA, ²LSU Health-- Shreveport, Department of Rehabilitation Sciences, Shreveport, LA
 Presented By: J. Margaret Lovin, MD
- 2:20 p.m. #48 PRELIMINARY RESULTS OF DIFFUSION TENSOR IMAGING IN PEDIATRIC SPINA BIFIDA PATIENTS**
 Ching Man Carmen Tong, DO¹, Bryson Reynolds, PhD², Seth Smith, PhD², Aashim Bhatia, MD³, Sam By, PhD², Quinn Weinberg, BS², Atlee Witt², John Brock III, MD¹, John Pope, MD¹, John Thomas, MD¹, Stacy Tanaka, MD¹, Douglass Clayton, MD¹, Mark Adams, MD¹
¹Department of Pediatric Urology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN, ²Institute of Imaging Science, Vanderbilt University, Nashville TN, ³Department of Radiology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN
 Presented By: Ching Man Carmen Tong, DO
- 2:27 p.m. #49 SURGICAL MANAGEMENT OF PEDIATRIC RENAL MASSES: NATIONAL DATABASE REVIEW OF INCIDENCE AND OUTCOMES BY SURGEON SPECIALTY AND SURGICAL MODALITY**
 Patrick Hensley, Amanda Saltzman, Megan Stout, Ali Ziada
 Department of Urology, University of Kentucky College of Medicine
 Presented By: Patrick Hensley, MD
- 2:34 p.m. #50 IMMUNE EXPRESSION IN CHILDREN WITH WILMS TUMOR**
 Ashley W. Johnston, MD¹, Stephanie J. Sexton, MD¹, Jonathan C. Routh, MD, MPH¹, Smrita K. Nair, PhD², Eda K. Holl, PhD²
¹Division of Urologic Surgery, Department of Surgery, Duke University School of Medicine, Durham, NC, ²Division of Surgical Sciences, Department of Surgery, Duke University School of Medicine, Durham, NC
 Presented By: Ashley W. Johnston, MD

- 2:41 p.m. #51 A PROSPECTIVE STUDY TO DETERMINE BIOFEEDBACK SUCCESS AND EVALUATING PREDICTORS OF OUTCOMES IN THE PEDIATRIC UROLOGY PATIENT POPULATION**
Shuvro De, William French, Abby Taylor, Chelsea Lauderdale, Mark Adams, John Brock, III, John Thomas, John Pope, IV, Stacy Tanaka, Chevis Shannon, Douglass Clayton
Monroe Carell Jr. Children's Hospital at Vanderbilt University Medical Center
Presented By: Shuvro De, MD
- 2:48 p.m. #52 REPAIR OF PENOSCROTAL WEBBING UNDER LOCAL ANESTHESIA DURING INFANCY**
Luis Perez¹, Winifred Owumi¹, Judy McLendon²
¹Atrium and Novant Health, ²Children's Urology of Carolinas
Presented By: Luis Manuel Perez, MD
- 3:15 p.m. - 3:45 p.m. Break/Visit Exhibits**
Location: FLW Salons A-F
- 3:45 p.m. - 5:00 p.m. Expert Panel Discussion: Frontiers of Bladder Function and Dysfunction**
Location: McArthur 4
Moderator: Edwin A. Smith, MD
Atlanta, GA
- Sacral Neuromodulation in the Pediatric Patient**
Panelist: John C. Pope IV, MD, FAAP
Nashville, TN
- Characterizing and Treating Bladder Dysfunction: A Modern Approach**
Panelist: Douglass B. Clayton, MD
Nashville, TN
- Can Bladder Dysfunction Exist Without Inflammation?**
Panelist: J. Todd Purves, MD, PhD
Durham, NC

Concurrent Session 3 of 5

- 1:45 p.m. - 5:00 p.m. Testis Cancer/Penile Cancer Sub-Plenary Session**
Location: McArthur 1-3
- 1:45 p.m. - 2:50 p.m. Testis/Penile/Urethral and Miscellaneous Cancer Podium Session**
Location: McArthur 1-3
Moderators: Scott E. Delacroix Jr., MD
New Orleans, LA
Kirk A. Keegan, MD, MPH
Nashville, TN

- 1:45 p.m. #63 UTILIZATION OF PSYCHIATRIC RESOURCES PRIOR TO GENITOURINARY (GU) CANCER DIAGNOSIS: IMPLICATIONS FOR SURVIVAL OUTCOMES**
 Zachary Klaassen, MD^{1,2}, Christopher J. D. Wallis³, Hanan Goldberg³, Thenappan Chandrasekar⁴, Rashid K. Sayyid¹, Stephen B. Williams⁵, Kelvin A. Moses⁶, Martha K. Terris^{1,2}, Robert K. Nam⁷, Paul Kurdyak⁸, Girish S. Kulkarni³
¹Augusta University - Medical College of Georgia, Augusta, GA, ²Georgia Cancer Center, Augusta, GA, ³University of Toronto, Toronto, ON, Canada, ⁴Thomas Jefferson University Hospital, Philadelphia, PA, ⁵University of Texas Medical Branch, Galveston, TX, ⁶Vanderbilt University Medical Center, Nashville, TN, ⁷Sunnybrook Hospital, Toronto, ON, Canada, ⁸Centre for Addiction and Mental Health, Toronto, ON, Canada
 Presented By: Zachary Klaassen, MD, MSc
- 1:52 p.m. #64 UNDERSTANDING VALUE: THE FINANCIAL IMPLICATIONS OF COMPLICATIONS FOLLOWING COMMON UROLOGIC ONCOLOGIC PROCEDURES**
 Jeff Goodwin, Patrick Hensley, Adan Dugan, Mauro Hanaoka, Jason Bylund, Andrew Harris
University of Kentucky
 Presented By: Jeffrey D. Goodwin, MD
- 1:59 p.m. #65 ROBOTIC VS. OPEN SURGICAL MANAGEMENT OF URETEROENTERIC ANASTOMOTIC STRICTURES**
 Nickolas D. Scherzer, Eric J. Shaw, MD, Jacob W. Greenberg, Jonathan L. Silberstein, MD, MBA, Raju Thomas, MD, FACS, FRCS, MHA, L. Spencer Krane, MD
Tulane University School of Medicine
 Presented By: Nickolas D. Scherzer
- 2:06 p.m. #66 COMPARATIVE PERIOPERATIVE OUTCOMES OF PATIENTS UNDERGOING ADRENALECTOMY WITH AND WITHOUT DISSEMINATED CANCER**
 Kristen Gurtner, MD, Danica May, MD, Dunia Khaled, MD, Kathleen Lata, Daniel Canter, MD
Ochsner Clinic Foundation
 Presented By: Kristen Elizabeth Gurtner, MD
- 2:13 p.m. #67 POST-OPERATIVE HEART RATE PREDICTS EJACULATORY FUNCTION IN PATIENTS UNDERGOING RETROPERITONEAL LYMPH NODE DISSECTION**
 Elizabeth Green, Kelvin Moses
Vanderbilt University Medical Center
 Presented By: Elizabeth Green, MD
- 2:20 p.m. #68 DEMOGRAPHIC DISPARITIES IN THE INCIDENCE AND OUTCOMES OF PENILE CANCER IN APPALACHIAN KENTUCKY**
 John Loomis, Patrick Hensley, Andrew James
University of Kentucky
 Presented By: John Charles A. Loomis, MD

- 2:27 p.m. #69 PERINEAL URETHROSTOMY: A SINGLE CANCER INSTITUTION EXPERIENCE OVER A DECADE**
 Julio Slongo, MD¹, Frank Boyd, MS², Peter A. Johnstone, MD³, Philippe E. Spiess⁴
¹Department of Urology, University of South Florida, Tampa, FL,
²Morsani College of Medicine, University of South Florida, Tampa, FL, ³Department of Radiation Oncology, Moffitt Cancer Center, Tampa, FL, ⁴Department of Genitourinary Oncology, Moffitt Cancer Center, Tampa, FL
 Presented By: Julio Slongo, MD
- 2:34 p.m. #70 CLINICAL TRANSLATION OF ENGINEERED PENILE TISSUE FOR BATTLEFIELD INJURY**
 Sita Somara, Teresa Burnette, Namrata Sangha, Lindsey Creahan, Tsghe Abraha, Kathryn Krupp, Tiana Stewart, Torie Westendorf, Brad Damratowski, Lisa Hinshaw, Todd Meinecke, Darren Hickerson, Cynthia Wilkins-Port, Ryan Terlecki, James Yoo, Anthony Atala, Julie Allickson, John Jackson
 Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD
- 2:41 p.m. #71 CHARACTERIZATION OF TREATMENT AND PROGNOSTIC FACTORS OF PRIMARY ADENOCARCINOMA OF THE URETHRA: A SEER POPULATION-BASED STUDY**
 Caleb Natale, BA, Mohamed Adnan, BA, Farid Zeineddine, BS, Jason Chiang, MD, Jonathan Silberstein, MD, Louis Krane, MD
 Tulane University School of Medicine
 Presented By: Caleb Natale
- 2:50 p.m. - 3:10 p.m. State-of-the-Art Lecture: Robotic RPLND Update**
Location: McArthur 1-3
 Guest Speaker: Erik P. Castle, MD, FACS
 Phoenix, AZ
- 3:10 p.m. - 3:40 p.m. Break/Visit Exhibits**
Location: FLW Salons A-F
- 3:40 p.m. - 5:00 p.m. Panel Discussion: Penile Cancer Update 2019**
Location: McArthur 1-3
 Moderator: Daniel J. Canter, MD
 New Orleans, LA
 Panelists: Peter A. Johnstone, MD, FACR, FASTRO
 Tampa, FL
 Viraj A. Master, MD, PhD, FACS
 Atlanta, GA
 Kelvin A. Moses, MD, PhD, FACS
 Nashville, TN

Concurrent Session 4 of 5

- 3:50 p.m. - 5:00 p.m. Health Services Research Poster Session**
Location: McArthur 5
 Moderators: Bruce R. Kava, MD
 Miami, FL
 Jennifer Robles, MD
 Nashville, TN

Poster #57

EXAMINING AND UNDERSTANDING VALUE: THE COST OF PREOPERATIVE CHARACTERISTICS, INTRAOPERATIVE VARIABLES, AND POSTOPERATIVE COMPLICATIONS OF ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY

Leslie Peard, MD¹, Jeffrey Goodwin, MD¹, Patrick Hensley, MD¹, Adam Dugan², Jason Bylund, MD¹, Andrew Harris, MD¹

¹University of Kentucky, Urology Department, Lexington, KY,

²University of Kentucky, Department of Surgery, Lexington, KY

Presented By: Leslie McFann Peard, MD

Poster #58

COST IMPLICATIONS OF PERIOPERATIVE INTRAVESICAL CHEMOTHERAPY FOR BLADDER TUMOR RESECTION: GEMCITABINE VERSUS MITOMYCIN-C

KC Biebighauser¹, Elizabeth Traoré¹, Mohammed Said¹, Louis Aliperti¹, Jeffrey Pearl^{1,2}, Mehrdad Alemozaffar^{1,3}, Christopher Filson^{1,4}

¹Emory University School of Medicine, Department of Urology, Atlanta, GA, ²Lutheran General Hospital, Des Plaines, IL,

³Winship Cancer Institute, Emory Healthcare, Atlanta, GA,

⁴Atlanta VA Medical Center, Decatur, GA

Presented By: KC Biebighauser, MD

Poster #59

IMPACT OF DEMOGRAPHIC FACTORS AND SYSTEMIC DISEASE ON URINARY STONE RISK PARAMETERS AMONGST STONE FORMERS

Carter Boyd¹, Dustin Whitaker¹, Omotola Ashorobi, MD², Robert Oster, PhD³, John Knight, PhD², Ross Holmes, PhD², Dean Assimos, MD², Kyle Wood, MD²

¹UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama,

³Department of Medicine, University of Alabama-Birmingham, Birmingham, Alabama

Presented By: Carter Boyd, BS

Poster #60

EVALUATION OF PATIENT SAFETY EVENT REPORTING IN A UROLOGICAL PATIENT POPULATION

Timothy Stark, MD¹, Dustin Whitaker², Andrew Harris, MD¹

¹University of Kentucky Department of Urology, ²University of Kentucky College of Medicine

Presented By: Timothy William Stark, MD

Poster #61

TRENDS IN UTILIZATION AND SURGICAL SUBSPECIALTY PERFORMING ADRENALECTOMY IN PATIENTS WITH DISSEMINATED CANCER: AN ANALYSIS OF THE NSQIP DATABASE

Kristen Gurtner, MD, Danica May, MD, Dunia Khaled, MD, Kathleen Lata, Daniel Canter, MD

Ochsner Clinic Foundation

Presented By: Kristen Elizabeth Gurtner, MD

Poster #62

SCRUTINIZING MEDICARE PAYMENTS TO THE HIGHEST PAID UROLOGISTS UTILIZING THE CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS) PUBLIC USE DATASET

Case Wood, Yousef Abu-Salha, Hung-Jui Tan, Raj Pruthi
University of North Carolina

Presented By: Case Wood, MD

Poster #63

RACIAL DISPARITIES IN CANCER-RELATED MORTALITY IN PATIENTS WITH URINARY BLADDER MALIGNANCY IN THE US

Juliana Morales, BS¹, Aaron Malles, MA¹, Marrell Kimble, BS¹, Alan Nieder, MD², Pura Rodriguez de la Vega, MPH¹, Noël Barengo, MD, PHD, MPH¹

¹FIU HWCOR, ²Mount Sinai Medical Center

Presented By: Alan Nieder, MD

Poster #64

REPEAT PROSTATE BIOPSY PATTERNS IN MEN WITH A SINGLE NEGATIVE PROSTATE BIOPSY: A POPULATION-BASED ANALYSIS

Rashid Sayyid, MD, MSc¹, Zachary Klaassen, MD, MSc¹, Matthew Kaufman, MD¹, Martha Terris, MD¹, Rabii Madi, MD, MBA¹, Shabbir Alibhai, MD, MSc², Rinku Sutradhar, PhD³, David Urbach, MD, MSc², Neil Fleshner, MD, MPH²

¹Division of Surgery, Section of Urology, Augusta University, Augusta, GA, 30912, ²University Health Network, Toronto, ON, M5G2C1, ³Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto, Toronto, ON,

Presented By: Rashid Sayyid, MD, MSc

Poster #65

CRITICAL ANALYSIS ON THE ROLE AND SEVERITY OF BODY MASS INDEX ON COST FOR PATIENTS UNDERGOING ROBOT-ASSISTED RADICAL PROSTATECTOMY

Ram Pathak, MD, Catherine Robey, BS, Marc Colaco, MD, Ashok Hemal, MD

Wake Forest

Presented By: Marc Colaco, MD, MBA

Poster #66

ANALYZING PATIENT SPECIFIC FACTORS CONTRIBUTING TO EXTENDED PACU LENGTH OF STAY AND SUBSEQUENT COST: A QUALITY IMPROVEMENT INITIATIVE

Patrick Hensley¹, Jeffrey Goodwin¹, Adam Dugan², Mauro Hanaoka², Jason Bylund¹, Andrew Harris¹

¹Department of Urology, University of Kentucky College of Medicine, ²Department of Surgery, University of Kentucky College of Medicine

Presented By: Patrick Hensley, MD

Poster #67

IMPACT OF SURGEON AGE ON PREFERENCE FOR OPEN VERSUS LAPAROSCOPIC/ROBOTIC PARTIAL AND RADICAL NEPHRECTOMY

Jason Lomboy, MD¹, J. Lee Graves, B.A.², Hung-Jui Tan, MD¹, Eric Wallen, MD¹, Matthew Nielsen, MD, MS¹, Angela Smith, MD, MS¹, Mathew Raynor, MD¹, Raj Pruthi, MD¹

¹University of North Carolina Department of Urology, ²University of North Carolina School of Medicine

Presented By: Jason R. Lomboy, MD

- Poster #68** **PERI-OPERATIVE OUTCOMES AND DISCHARGE DESTINATIONS OF OCTOGENARIANS UNDERGOING RADICAL CYSTECTOMY: AN ANALYSIS OF THE NSQIP DATABASE**
 Hayden Hill, Kathleen Lata-Arias, Daniel Canter
Olchsher Clinic Foundation, Department of Urology, Jefferson, LA
 Presented By: Hayden Matthews Hill, MD
- Poster #69** **LOWER PREVALENCE OF METABOLIC COMORBIDITIES AMONG MEN WITH ERECTILE DYSFUNCTION FOLLOWING PROSTATE CANCER THERAPY**
 Robert Sineath, Dattatraya Patil, Akanksha Mehta
Emory University School of Medicine
 Presented By: Robert Craig Sineath, MPH
- Poster #70** **INCREASED OPERATIVE DURATION IN MINIMALLY INVASIVE PARTIAL NEPHRECTOMY IS ASSOCIATED WITH SIGNIFICANTLY INCREASED RISK OF MORBIDITY, AN ANALYSIS OF 12,018 PATIENTS**
 Andrew Harris, MD, Andrew James, MD, Jason Bylund, MD
University of Kentucky
 Presented By: Andrew Mitchell Harris, MD

Concurrent Session 5 of 5

3:50 p.m. - 5:00 p.m. Basic Science Research Poster Session

Location: McArthur 6
 Moderators: Peter E. Clark, MD
Charlotte, NC
 Martin G. Sanda, MD
Atlanta, GA

- Poster #71** **DEFINING THE ROLE OF ANDROGEN RECEPTOR SIGNALING IN BLADDER CANCER**
 Samarjit Rai, Chendil Damodaran, Jamie Messer, Murali Ankem, Ahmed Haddad
Department of Urology, University of Louisville School of Medicine, Louisville, KY
 Presented By: Samarjit Rai, MD
- Poster #72** **PD-L1 EXPRESSION IN NON-MUSCLE-INVASIVE BLADDER CANCER, IS THERE A PROGNOSTIC ROLE?**
 Maria Becerra¹, David Gajzer², Maria Velasquez¹, DeDeukwoo Kwon³, Nachiketh Soodana-Prakash¹, Merce Jorda², Chad Ritch¹
¹*Department of Urology, Jackson Memorial Hospital/University of Miami Miller School of Medicine, Miami, FL 33136, USA.,*
²*Department of Pathology, Jackson Memorial Hospital/University of Miami Miller School of Medicine, Miami, FL 33136, USA.,*
³*Biostatistics and Bioinformatics Shared Resource, Sylvester Comprehensive Cancer Center, University of Miami Miller School of Medicine, Miami, Florida.*
 Presented By: Maria F. Becerra, MD

Poster #73

SOX4 REGULATES INVASION OF BLADDER CANCER CELLS VIA REPRESSION OF WNT5A

Josue Moran¹, Hannah Kim², Zhenghong Li², Carlos Moreno^{2,3}

¹PhD Program in Cancer Biology, Emory University, ²Dept. Pathology and Laboratory Medicine, Emory University, ³Winship Cancer Institute of Emory University

Presented By: Carlos Sanchez Moreno, PhD

Poster #74

THE PIONEER TRANSCRIPTION FACTOR FOXA2 REGULATES INTEGRIN ALPHA 1 EXPRESSION FACILITATING PROSTATE CANCER BONE COLONIZATION

Zachary M. Connelly, BS¹, Shu Yang, MD¹, Nazih Khater, MD², A. Wayne Orr, PhD³, Renjie Jin, MD/PhD⁴, David Degraff, PhD⁵, Colm Morrissey, PhD⁶, Eva Corey, PhD⁶, Robert Matusik, PhD⁴, Xiuping Yu, PhD¹

¹Dept of Biochemistry LSUHSC Shreveport, ²Dept of Urology LSUHSC Shreveport, ³Dept of Pathology LSUHSC Shreveport, ⁴Dept of Urology VUMC, ⁵Dept of Pathology PSUCOM, ⁶Dept of Urology UW

Presented By: Zachary Connelly, BS

Poster #75

TRANSCRIPTOME-WIDE COMPARISON OF PROSTATE TUMORS AND POST-DRE URINE EXTRACELLULAR VESICLES

Kathryn Pellegrini¹, Dattatraya Patil¹, Marguerite du Plessis², Kristen Douglas¹, Kristin Larsen¹, Ella Anastasiades¹, Frances Kim¹, Almira Catic¹, Mersiha Torlak¹, Eugene Huang^{3,4}, Carlos Moreno^{4,5}, Elai Davicioni², Martin Sanda^{1,4}

¹Department of Urology, School of Medicine, Emory University, Atlanta, GA, ²GenomeDx Biosciences, Vancouver, Canada,

³Department of Biostatistics and Bioinformatics, Rollins School of Public Health, Emory University, Atlanta, GA, ⁴Winship Cancer Institute, Emory University, Atlanta, GA, ⁵Department of Pathology and Laboratory Medicine, School of Medicine, Emory University, Atlanta, GA

Presented By: Martin George Sanda, MD

Poster #76

EXTRACELLULAR VESICLES FROM PC3 CELLS INDUCE AN IMMUNOSUPPRESSIVE PHENOTYPE IN HUMAN MACROPHAGES

Kathryn Pellegrini¹, Kristen Douglas¹, Haydn Kissick^{1,2,3}, Martin Sanda¹

¹Department of Urology, School of Medicine, Emory University, Atlanta, GA, ²Department of Microbiology and Immunology, School of Medicine, Emory University, Atlanta, GA, ³Winship Cancer Institute, Emory University, Atlanta, GA

Presented By: Martin George Sanda, MD

Poster #77

THE LANDSCAPE OF CADMIUM INDUCED PROSTATE CARCINOGENESIS

Kristy Nguyen, MD, Thomas FitzGibbon, MD, Adnan Dervishi, MD, Jamie Messer, MD, Murali Ankem, MD, Ahmed Haddad, MD University of Louisville

Presented By: Kristy Nguyen, MD

Poster #78

BIOENGINEERED STIMULATED-CANCER CELL MEMBRANE COATED NANOPARTICLES FOR ENHANCED DELIVERY TO THE BONE

Jamboor Vishwanatha, Amalendu Ranjan, Andrew Gdowski UNT Health Science Center

Presented By: Jamboor K. Vishwanatha, PhD

- Poster #79** **EXPLORING THERMODYNAMIC THEORIES OF KIDNEY STONE COMPOUNDS TO OPTIMIZE CALCIUM OXALATE STONE DISSOLUTION AND CRYSTALLIZATION**
 Noa Grooms, BME, BS¹, Michelle Dill², Nicole Bohmann, BME, BS², Steven Arce, PhD², Victoria Bird, MD³
¹North Eastern University, ²BME Univestiy of Florida, ³NMARG Division of Urology
 Presented By: Noa Grooms, BS
- Poster #80** **NAD+ INDUCES RELAXATION IN ISOLATED HUMAN CORPUS CAVERNOSUM**
 Serap Gur¹, Laith Alzweri², Suresh Sikka², Sudha Talwar², Asim Abdel-Mageed², Wayne J. G. Hellstrom²
¹Ankara University, ²Tulane University School of Medicine
 Presented By: Laith Alzweri, MD
- Poster #81** **BROMELAIN INDUCES IN VITRO RELAXATION OF HUMAN CORPUS CAVERNOSUM TISSUE VIA A NITIRC OXIDE-cGMP INDEPENDENT PATHWAY**
 Serap Gur, Suresh Sikka, Laith Alzweri, Asim Abdel-Mageed, Sudha Talwar, Wayne J. G. Hellstrom
Tulane University School of Medicine
 Presented By: Laith Alzweri, MD
- Poster #82** **BIOPRINTED OVARY-ON-A-CHIP PLATFORM AS A MODEL OF OVARIAN PHYSIOLOGY AND DISEASE**
 Young Sik Choi, Il Dong Kim, Young Joon Seol, Myung Jae Jeon, John Jackson, James Yoo, Anthony Atala
Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD
- Poster #83** **PROGRESSIVE MUSCLE CELL DELIVERY AS A SOLUTION FOR VOLUMETRIC MUSCLE DEFECT REPAIR**
 Ji Hyun Kim, In Kap Ko, John Jackson, Anthony Atala, James Yoo
Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD
- Poster #84** **IN VIVO EVALUATION OF FUNCTIONALIZED MUSCLE SCAFFOLDS FOR RECONSTRUCTION**
 Lindsey Shapiro, Young Min Ju, James Yoo, John Jackson, Anthony Atala, Sang Jin Lee
Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD

Concurrent Sessions End

- 5:00 p.m. - 5:10 p.m.** **The Evolution of Outpatient Lithotripsy and Its Origin in the Southeastern Section**
 Speaker: Paul W.F. Coughlin, MD, FACS
High Point, NC
- 6:00 p.m. - 8:00 p.m.** **Welcome Reception**
Location: FLW Salons A-F

FRIDAY, MARCH 15, 2019

OVERVIEW

6:30 a.m. - 6:00 p.m.	Registration/Information Desk Open <i>Location: FLW Registration Desk</i>
6:30 a.m. - 6:00 p.m.	Speaker Ready Room Open <i>Location: FLW McDowell</i>
7:30 a.m. - 10:30 a.m.	Spouse/Guest Hospitality Suite Open <i>Location: Taliesin</i>
9:00 a.m. - 4:00 p.m.	Exhibit Hall Open <i>Location: FLW Salons A-F</i>
6:30 p.m. - 10:00 p.m.	Residents Night Out <i>Location: Meet at Convention Center Entrance by 6:15 p.m.</i>

Concurrent Sessions Begin

Concurrent Session 1 of 4

7:00 a.m. - 8:00 a.m.	Urologic Oncology I Poster Session <i>Location: McArthur 5</i> Moderators: Mehrdad Alemozaffar, MD, MS <i>Atlanta, GA</i> Paul L. Crispen, MD <i>Gainesville, FL</i>
Poster #85	THE IMPLICATIONS OF INCREASING SQUAMOUS HISTOLOGY AT TIME OF TRANSURETHRAL RESECTION FOR BLADDER CANCER: RESULTS FROM A HIGH-VOLUME REFERRAL CENTER Peter Reisz, MD ¹ , Valeria Tringali, MD ¹ , Diane Haddad, MD ² , Sam Chang, MD ¹ <i>¹Vanderbilt University Medical Center, Dept. of Urology, Nashville, TN, ²Vanderbilt University Medical Center, Dept. of General Surgery, Nashville, TN</i> Presented By: Peter A. Reisz, MD
Poster #86	EXPERIENCE WITH DRAINLESS CYSTECTOMY WITH ILEAL CONDUIT URINARY DIVERSION Katherine Cockerill, Max Hicks, Ryan Peacock, Paul Young <i>Mayo Clinic Jacksonville</i> Presented By: Katherine Cockerill, MD

Poster #87

REOPERATION WITHIN 30 DAYS OF RADICAL CYSTECTOMY: IDENTIFYING HIGH-RISK PATIENTS USING THE AMERICAN COLLEGE OF SURGEONS NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

Rashid Sayyid, MD, MSc¹, Benjamin Harper, MD¹, Eric Webb, MD¹, Martha Terris, MD¹, Rabii Madi, MD, MBA¹, Neil Fleshner, MD, MPH², Christopher Wallis, MD, PhD², Zachary Klaassen, MD, MSc¹

¹Department of Surgery, Section of Urology, Augusta University, Augusta, GA, 30907, ²University Health Network, Toronto, ON

Presented By: Rashid Sayyid, MD, MSc

Poster #88

EVALUATING POST-OPERATIVE OPIOID USE FOLLOWING RADICAL CYSTECTOMY

Kathryn Hacker¹, Jae Jung¹, J. Lee Graves¹, Hannah Cook¹, Peggy McNaull¹, Brooke Chidgey¹, Jami Mann¹, Michael Woods², Hung-Jui Tan¹, Raj Pruthi¹, Angela Smith¹, Matthew Nielsen¹

¹University of North Carolina at Chapel Hill, ²Loyola University Medical Center

Presented By: Kathryn E. Hacker Gessner, MD, PhD

Poster #89

30-DAY READMISSION CHARACTERISTICS, INTENSITY AND COST IN A DEDICATED ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM FOR RADICAL CYSTECTOMY PATIENTS

William Worrlow, BA¹, Blair Townsend, MD, MBA¹, Myra Robinson, MSPH², Elizabeth Ross, MSN, RN³, Shelby Jones, APRN, AG-ACNP-BC¹, Blair Parker, MSN, RN, CNL¹, Kris Gaston, MD¹, Peter Clark, MD¹, Stephen Riggs, MD¹

¹Department of Urology, Levine Cancer Institute/Atrium Health,

²Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, ³Department of Surgery, Cost Analytics, Atrium Health

Presented By: Blair Townsend, MD, MBA

Poster #90

ELEVATED JP DRAIN-TO-SERUM CREATININE RATIO PREDICTS FUTURE URETEROENETRIC LEAK AND GASTROINTESTINAL COMPLICATIONS FOLLOWING RADICAL CYSTECTOMY WITH URINARY DIVERSION

Hamza Beano¹, Jiaxian He², Caitin Hensel², William Worrlow¹, Rupali Bose², William Townsend¹, Madelon Haskin¹, Kirs Gaston¹, Clark Peter¹, Stephen Riggs¹

¹Department of Urology, Carolinas Medical Center/Atrium Health,

²Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health

Presented By: Hamza M. Beano, MD

Poster #91

EXPERIENCE WITH OVER 150 ROBOT-ASSISTED RADICAL CYSTECTOMIES AND INTRA-CORPOREAL URINARY DIVERSIONS

Jennifer Adouli, Dattatraya Patil, Viraj Master, Martin Sanda, John Pattaras, Kenneth Ogan, Mehrdad Alemozaffar

Department of Urology, Emory University School of Medicine, Atlanta, GA

Presented By: Mehrdad Alemozaffar, MD, MS

Poster #92

COMPARISON OF ROBOTIC ASSISTED DONOR RIGHT NEPHRECTOMY TO LAPAROSCOPIC LEFT NEPHRECTOMY IN PATIENTS UNDERGOING LIVING DONOR RENAL TRANSPLANT

John Fisher, MD¹, Eric Riedinger, MD¹, Oscar Grandas, MD², Ryan Pickens, MD¹

¹University of Tennessee Medical Center-Knoxville Department of Urology, ²University of Tennessee Medical Center-Knoxville Department of Transplant Surgery

Presented By: John Samuel Fisher, MD

Poster #93

RETROPERITONEAL APPROACH ROBOT ASSISTED PARTIAL NEPHRECTOMY: COMPARING OF TRIFECTA CRITERIA RATES IN MASSES

Jason H. Chiang, MD, Matthew G. Cowper, Jacob W. Greenberg, Jonathan L. Zurawin, MD, Jonathan L. Silberstein, MD, FACS, MBA

Tulane University School of Medicine

Presented By: Jason Chiang, MD

Poster #94

FACTORS ASSOCIATED WITH PROLONGED LENGTH OF STAY FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY: CREATION OF THE BLOT SCORE

Ashley Shumate, MD¹, Grayson Roth², Colleen Ball, MS³, Kaitlynn Custer², David Thiel, MD¹

¹Department of Urology, Mayo Clinic, Jacksonville, FL,

²Department of Health Sciences Research, Mayo Clinic,

Jacksonville, FL, ³Division of Biomedical Statistics and Informatics, Mayo Clinic

Presented By: Ashley Shumate, MD

Poster #95

HOW WOULD MRI-TARGETED PROSTATE BIOPSY ALTER RADIATION THERAPY APPROACHES IN TREATING PROSTATE CANCER?

Daniel Dix¹, Andrew McDonald, MD², Jennifer Gordetsky, MD^{1,3}, Jeffrey Nix, MD¹, John Thomas, MD³, Soroush Rais-Bahrami, MD^{1,3}

¹Department of Urology, University of Alabama at Birmingham, Birmingham, AL, USA, ²Department of Radiation Oncology,

University of Alabama at Birmingham, Birmingham, AL, USA,

³Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA

Presented By: Daniel Dix

Poster #96

TREATMENT OUTCOMES FOLLOWING PROGRESSION ON ACTIVE SURVEILLANCE OF A RACIALLY DIVERSE COHORT OF MEN

Jacob W. Greenberg, Amanda R. Raines, MD, Allison H. Feibus, L. Spencer Krane, MD, Jonathan L. Silberstein, MD, FACS, MBA
Tulane University School of Medicine

Presented By: Jonathan Silberstein, MD, MBA, FACS

Poster #97

PAIN CONTROL AFTER ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY: IS AN ULTRASOUND GUIDED TRANSABDOMINUS PERIPHERAL NERVE BLOCK WORTH THE HYPE?

Amanda Carter, MD, Amar Singh, MD
University of Tennessee College of Medicine, Dept. of Urology, Chattanooga, TN

Presented By: Amanda B. Carter, MD

Poster #98

PHOSPHODIESTERASE-5 INHIBITORS AND THE RISK OF MELANOMA FOLLOWING PROSTATE CANCER

George Wayne, MD¹, Bryan Herzog, BS², Juan Cedeno, MD¹, Maurilio Garcia, MD¹, Elizabeth Nagoda, MD¹, Alan Polackwich, MD¹

¹*Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL,*

²*Florida International University College of Medicine*

Presented By: George Wayne, MD

Concurrent Session 2 of 4

7:00 a.m. - 8:00 a.m.

Outpatient Urology Poster Session

Location: McArthur 6

Moderators: John M. Lacy, MD

Knoxville, TN

Douglas F. Milam, MD

Nashville, TN

Poster #99

TRENDS IN AMBULATORY CARE OF OLDER ADULTS WITH URINARY STONE DISEASE

Leonid I. Aksenov^{1,2}, Ashley W. Johnston, MD^{1,2}, Brenton B. Winship, MD¹, Russell S. Terry, MD¹, Michael E. Lipkin, MD, MBA¹, Jonathan C. Routh, MD, MPH¹, Glenn M. Preminger, MD¹, Charles D. Scales^{1,2}

¹*Duke University School of Medicine, Division of Urologic Surgery,* ²*Duke Clinical Research Institute*

Presented By: Ashley W. Johnston, MD

Poster #100

COMPLEMENTARY AND ALTERNATIVE MEDICINE USE AMONG KIDNEY STONE FORMERS

Joshua Calvert, Aditya Joshi, Taylor Winkler, Stanley Duke Herrell, Nicole Miller, Ryan Hsi

Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN

Presented By: Joshua Calvert, MD, MPH

Poster #101

A RANDOMIZED, CONTROLLED TRIAL FOR TRANSURETHRAL TREATMENT OF BLADDER TUMORS USING PLASMABUTTON(TM) VAPORIZATION ELECTRODE OR MONOPOLAR LOOP ELECTROCAUTERY

Gordon Hong¹, Kenneth Ogan¹, Mehrdad Alemozaffar¹, Christopher Filson¹, Datta Patil¹, Grace Lee², Daniel Canter³, Viraj Master¹

¹*Department of Urology, Emory University School of Medicine,*

²*Robert Wood Johnson Medical School, Rutgers University,*

³*Ochsner Medical Center, New Orleans, LA*

Presented By: Gordon Hong, BS

- Poster #102** **MANAGEMENT AND DIAGNOSIS OF PENILE FRACTURE AT A HIGH-VOLUME INSTITUTION: A 10-YEAR REVIEW**
 Monica O'Hanlon, MD, A.L. Patterson, MD, Elizabeth Tourville, MD, Robert Wake, MD
University of Tennessee Health Science Center - Memphis
 Presented By: Monica A. O'Hanlon, MD
- Poster #103** **HIGH ANXIETY WITH XIAFLEX: MEN SHOULDN'T WORRY**
 Katherine Cockerill¹, Colleen Ball², Grace Edwards¹, Peter Cannizzo¹, Gregory Broderick¹
¹Mayo Clinic Jacksonville, ²Mayo Clinic
 Presented By: Katherine Cockerill, MD
- Poster #104** **ASSESSMENT OF TRANSCUTANEOUS ULTRASOUND IN IDENTIFICATION OF THE POSTERIOR TIBIAL NERVE**
 Steven Petrou, Eric Robinson, Rachel Pung Page, Edsel Bittencourt, Steven Lomax, David Thiel
Mayo Clinic Florida
 Presented By: Steven Lomax, MD
- Poster #105** **FINANCIAL IMPLICATIONS OF BIPARAMETRIC PROSTATE MAGNETIC RESONANCE IMAGING**
 Kristin Porter¹, Alex King¹, Samuel Galgano¹, Rachael Sherrer², Jennifer Gordetsky^{2,3}, Soroush Rais-Bahrami^{1,2}
¹Department of Radiology, University of Alabama at Birmingham, Birmingham, AL, USA, ²Department of Urology, University of Alabama at Birmingham, Birmingham, AL, USA, ³Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA
 Presented By: Rachael Leigh Sherrer, BA
- Poster #106** **MRI/US FUSION PROSTATE BIOPSY VS. SYSTEMATIC TRUS PROSTATE BIOPSY: DETECTION OF CLINICALLY SIGNIFICANT PROSTATE CANCER AT A SINGLE INSTITUTION ACADEMIC SETTING IN SOUTH FLORIDA.**
 Maurilio Garcia-Gil¹, Christopher Febres-Aldana², Sarah Alghamdi³, Robert Poppiti^{2,4}, Emilio Lastarria¹, Akshay Bhandari¹, Alan M. Nieder¹
¹Division of Urology, Columbia University at Mount Sinai Medical Center, Miami Beach, FL, USA, ²Arkadi Rywlin Department of Pathology and Laboratory Medicine, Mount Sinai Medical Center, Miami Beach, FL, ³Department of Pathology and Laboratory Medicine, Miller School of Medicine, University of Miami, Miami, FL, ⁴FIU Herbert Wertheim College of Medicine, Miami, Florida
 Presented By: Maurilio Garcia-Gil, MD, MPH
- Poster #107** **COMPARISON OF CONVENTIONAL TRUS, MRI AND MICRO-ULTRASOUND FOR VISUALIZING PROSTATE CANCER IN AN ACTIVE SURVEILLANCE POPULATION: A FEASIBILITY STUDY**
 Gregg Eure, MD, FACS¹, Daryl Fanney, MD², Jefferson Lin, MD¹, Brian Wodlinger, PhD³, Sangeet Ghai, MD⁴
¹Urology of Virginia, Virginia Beach, Virginia, ²MRI CT Diagnostics, Virginia Beach, Virginia, ³Exact Imaging, Markham, Canada, ⁴University of Toronto, Toronto Canada
 Presented By: Gregg R. Eure, MD

Poster #108

**VASECTOMY UTILIZING RADIOFREQUENCY ABLATION:
INITIAL FDA ANIMAL STUDY**

William Shingleton, Gerard Henry
Presented By: Gerard D. Henry, MD

Poster #109

**VASAL ANASTOMOSIS UTILIZING A NOVEL SUPER
MICROSURGERY ROBOTIC PLATFORM**

Sijo Parekattil, Associate Professor¹, Ahmet Gudeloglu, Faculty²,
Mohammed Etafy, Fellow³, Richard Mendelson, Faculty⁴, Jamin
Brahmbhatt, Assistant Professor⁵
¹PUR Clinic, South Lake Hospital University of Central Florida,
Clermont, FL, ²Hacettepe University, Ankara, Turkey, ³PUR
Clinic, South Lake Hospital, Clermont, FL, ⁴Keiser University
Graduate School, ⁵PUR Clinic, South Lake Hospital University of
Central Florida

Presented By: Sijo J. Parekattil, MD

Poster #110

**PROSTATIC URETHRAL LIFT BASELINE PREDICTORS OF
RESPONSE**

Steven N Gange¹, Anthony L Cantwell², Claus G Roehrborn³
¹Summit Urology Group, ²Advanced Urology Institute, ³University
of Texas Southwestern Medical Center

Presented By: Steven N. Gange, MD, FACS

Poster #111

**METFORMIN USE IS ASSOCIATED WITH IMPROVED
INTERNATIONAL PROSTATE SYMPTOM SCORES IN MEN
WITH METABOLIC SYNDROME**

Rashid Sayyid, MD, MSc¹, Zachary Klaassen, MD, MSc¹, Martha
Terris, MD¹, Rabii Madi, MD, MBA¹, Ardalanejaz Ahmad, MD²,
Ricardo Leao, MD, PhD², Bimal Bhindi, MD, MSc², Neil Fleshner,
MD, MPH²

¹Division of Surgery, Section of Urology, Augusta University,
Augusta, GA, 30912, ²Department of Surgical Oncology,
University Health Network, Toronto, ON, Canada

Presented By: Rashid Sayyid, MD, MSc

Poster #112

**PRELIMINARY ASSESSMENT ON THE TREATMENT OF
ERECTILE DYSFUNCTION WITH BIMIX GEL**

Daniel Martinez, MD, Yekutieli Sandman, MD, Robert Puig, MD,
Cosme Gomez, MD

Urology Specialty Care

Presented By: Daniel R. Martinez, MD

Concurrent Session 3 of 4

7:00 a.m. - 8:00 a.m.

Prostate Cancer Podium Session

Location: FLW Salons G-J

Moderators: James M. Bienvenu, MD

Knoxville, TN

Li-Ming Su, MD

Gainesville, FL

7:00 a.m. #72

**PSA DENSITY PERFORMS BETTER IN CAUCASIAN MEN
THAN AFRICAN AMERICAN MEN IN PREDICTING
PROSTATE CANCER AND SIGNIFICANT CANCER**

Emily Kelly, Kevin Morgan, Zachary Connelly, Kara Babaian
LSU Shreveport

Presented By: Emily Fell Kelly, MD

7:07 a.m. #73

PROSPECTIVE MULTICENTER COMPARISON OF OPEN AND ROBOTIC RADICAL PROSTATECTOMY: THE PROST-QA/RP2 CONSORTIUM

Peter Chang, MD MPH¹, Dattatraya Patil, MBBS MPH², Andrew Wagner, MD¹, Meredith Regan, ScD³, Catrina Crociani, MPH¹, Larry Hembroff, PhD⁴, Linda Stork⁴, Kyle Davis⁴, John Wei, MD MS⁵, David Wood, MD⁶, Chris Saigal, MD MPH⁷, Mark Litwin, MD MPH^{7,8}, Jim Hu, MD MPH⁹, Eric Klein, MD¹⁰, Adam Kibel, MD¹¹, Gerald Andriole, MD¹², Matthew Cooperberg, MD MPH¹³, Peter Carroll, MD MPH¹³, Joseph Smith, MD¹⁴, Misop Han, MD¹⁵, Alan Partin, MD PhD¹⁵, Thomas Greenfield, PhD¹⁶, Martin Sanda, MD², PROST-QA Consortium¹⁷

¹Department of Surgery, Beth Israel Deaconess Medical Center and Harvard Medical School, ²the Department of Urology, Emory University School of Medicine, Atlanta, GA, ³the Department of Biostatistics and Computational Biology, Dana-Farber Cancer Institute and Harvard Medical School, Boston, ⁴the Office for Survey Research, Institute for Public Policy and Social Research, Michigan State University, East Lansing, ⁵the Department of Urology, University of Michigan, Ann Arbor, ⁶Beaumont Hospital, Royal Oak, ⁷the Departments of Urology, UCLA Center for Health Sciences, Los Angeles, ⁸Health Policy and Management, UCLA Center for Health Sciences, Los Angeles, ⁹Department of Urology, Weill Cornell Medicine, New York, NY, ¹⁰the Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, ¹¹the Division of Urology, Brigham and Women's Hospital and Harvard Medical School, ¹²the Department of Urology, Washington University, St. Louis, ¹³the Department of Urology, University of California-San Francisco, San Francisco, CA, ¹⁴the Department of Urological Surgery, Vanderbilt University Medical Center, Baltimore, MD, ¹⁵the Brady Urological Institute, Johns Hopkins University, Baltimore, MD, ¹⁶Alcohol Research Group, Public Health Institute, Emeryville, CA, ¹⁷Beth Israel Deaconess Medical Center and Harvard Medical School

Presented By: Martin George Sanda, MD

7:14 a.m. #74

INCREASED OPERATIVE TIMES IN MINIMALLY INVASIVE RADICAL PROSTATECTOMY ARE ASSOCIATED WITH SIGNIFICANTLY INCREASED RISK OF MORBIDITY, A STUDY OF 35,105 PATIENTS

Andrew Harris, MD, Jason Bylund, MD, Andrew James, MD
University of Kentucky

Presented By: Andrew Mitchell Harris, MD

7:21 a.m. #75

DEVELOPMENT AND VALIDATION OF A WEB-BASED TOOL TO PREDICT SEXUAL, URINARY, AND BOWEL FUNCTION LONGITUDINALLY AFTER RADIATION THERAPY, SURGERY, OR OBSERVATION

Aaron Laviana, Department of Urology¹, Zhiguo Zhao, Department of Biostatistics¹, Li-Ching Huang, Department of Biostatistics¹, Tatsuki Koyama, Department of Biostatistics¹, Ralph Conwill, Prostate Cancer Advocate², Irene Feurer, Department of Biostatistics¹, Karen Hoffman, Dept of Radiation Oncology³, David Penson, Department of Urology¹, Daniel Barocas, Department of Urology¹

¹Vanderbilt University Medical Center, ²Vanderbilt Ingram Cancer Center, ³University of Texas M. D. Anderson Center

Presented By: Aaron Laviana, MD

7:28 a.m. #76

EVALUATION OF FLUCICLOVINE (FACBC) PET SCAN FOR STAGING HIGH-RISK PROSTATE CANCER BEFORE PRIMARY TREATMENT

Mehrdad Alemozaffar, MD, MS¹, Akinyemi Akintayo, MD², Olayinka Abiodun, MD², Eugene Huang³, Stephanie Spetka¹, Dattatraya Patil, MD, MPH¹, Mersiha Toriak, MPH¹, Martin Sanda, MD¹, David Schuster, MD²

¹Emory University School of Medicine, Department of Urology,

²Emory University School of Medicine, Department of Radiology,

³Rollins Public Health

Presented By: Mehrdad Alemozaffar, MD, MS

7:35 a.m. #77

IDENTIFICATION OF TRANSCRIPTION FACTOR RELATIONSHIPS ASSOCIATED WITH ANDROGEN DEPRIVATION THERAPY RESPONSE AND METASTATIC PROGRESSION IN PROSTATE CANCER

Nitya Sharma¹, Kathryn Pellegrini², Veronique Ouellet³, Felipe Giuste⁴, Selvi Ramalingam⁵, Kenneth Watanabe⁵, Eloise Adam-Granger³, Lucresse Fossouo³, Sungyong You⁶, Michael Freeman⁶, Paula Vertino^{7,8}, Karen Conneely^{9,8}, Adeboye Osunkoya^{10,5,8,11}, Dominique Trudel³, Anne-Marie Mes-Masson³, John Petros^{10,8,11}, Fred Saad³, Carlos Moreno^{5,8}

¹PhD Program in Genetics and Molecular Biology, Emory

University, ²Dept. of Urology, Emory University, ³Centre de recherche du Centre hospitalier de l'Université de Montréal, Institut du cancer de Montréal and Université de Montréal, Montreal, QC, Canada, ⁴MSTP/MD PhD, Emory University,

⁵Dept. Pathology and Laboratory Medicine, Emory University,

⁶Division of Cancer Biology and Therapeutics, Departments of Surgery Biomedical Sciences, Samuel Oschin Comprehensive Cancer Institute, Cedars-Sinai Medical Center, Los Angeles, California, ⁷Dept. Radiation Oncology, Emory University,

⁸Winship Cancer Institute of Emory University, ⁹Dept. Human

Genetics, Emory University, ¹⁰Dept. Urology, Emory University,

¹¹Atlanta VA Medical Center

Presented By: Carlos Sanchez Moreno, PhD

7:42 a.m. #78

COMPARISON OF ABIRATERONE ACETATE AND DOCETAXEL WITH ANDROGEN DEPRIVATION THERAPY IN HIGH-RISK AND METASTATIC HORMONE-NAIVE PROSTATE CANCER: UPDATED RESULTS OF A NETWORK META-ANALYSIS

Eric Webb¹, Christopher Wallis², Hanan Goldberg², Thenu Chandrasekar², Rashid Sayyid¹, Raj Satkunasingam², Martha Terris¹, Zachary Klaassen^{1,2}

¹Augusta University, ²University of Toronto

Presented By: Eric D. Webb, MD

7:49 a.m. #79

META-ANALYSIS OF THE PROGNOSTIC UTILITY OF THE CELL CYCLE PROGRESSION SCORE GENERATED FROM NEEDLE BIOPSY IN MEN TREATED WITH DEFINITIVE THERAPY

Kristen Gurtner¹, Daniel Canter^{1,2}, Jay Bishoff³, Stephen Freedland⁴, Shams Halat¹, Steven Stone⁵, Thorsten Schlomm⁶, Stephen Bardot^{1,2}

¹Ochsner Clinic, Department of Urology, New Orleans, LA,

²Queensland School of Medicine, Queensland, Australia,

³Intermountain Urological Institute, Salt Lake City, UT, ⁴Cedars-Sinai Medical Center, Los Angeles, CA, ⁵Myriad Genetics, Salt Lake City, UT, ⁶Martini-Clinic, Prostate Cancer Center, University Medical Center Hamburg-Eppendorf

Presented By: Kristen Elizabeth Gurtner, MD

Concurrent Session 4 of 4

7:00 a.m. - 8:00 a.m.

Sexual Dysfunction and Infertility Podium Session

Location: McArthur 1-3

Moderators: Cara B. Cimmino, MD
Atlanta, GA

Gerard D. Henry, MD
Bossier City, LA

7:00 a.m. #80

EVALUATION OF FEMALE SEXUAL DYSFUNCTION IN ADULT ENTERTAINERS

Justin Dubin, MD¹, Aubrey Greer¹, Cadence Valentine², Ian O'Brien², Eric Leue², Ashley Winter, MD³, Lisa Paz, PhD¹, Ranjith Ramasamy, MD¹

¹University of Miami, ²The Free Speech Coalition, ³Northwest Kaiser Permanente

Presented By: Justin M. Dubin, MD

7:07 a.m. #81

HIGHER TRAIT EMOTIONAL INTELLIGENCE CORRELATES TO LOWER CHRONIC SCROTAL CONTENT PAIN AND BETTER WORK ENGAGEMENT

Richard Mendelson¹, Mohammed Etafy², Jamin Brahmabhatt³, Sijo Parekattil⁴

¹Keiser University Graduate School, Ft. Lauderdale, FL, ²PUR

Clinic, South Lake Hospital, Clermont, FL, ³PUR Clinic, South Lake Hospital University of Central Florida, Clermont, FL, ⁴PUR Clinic, South Lake Hospital University of Central Florida, Clermont, FL

Presented By: Richard Mendelson, PhD

7:14 a.m. #82

PREOPERATIVE NARCOTIC USE IS PREDICTIVE OF HIGH POSTOPERATIVE NARCOTIC REQUIREMENTS AFTER PENILE PROSTHESIS INSERTION

William French, BS¹, Benjamin Dropkin, MD², Sophia Delpe, MD², Douglas Milam, MD², Melissa Kaufman, MD, PhD²

¹Vanderbilt University School of Medicine, ²Vanderbilt University Medical Center

Presented By: Benjamin Dropkin, MD

- 7:21 a.m. #83 INTRA-OPERATIVE USE OF BETADINE IS ASSOCIATED WITH AN INCREASED RATE OF PENILE PROSTHESIS INFECTIONS**
Jack Andrews, MD, Madeleine Manka, MD, Tobias Kohler, MD, Landon Trost, MD
Mayo Clinic
Presented By: Jack Andrews, MD
- 7:28 a.m. #84 INTRALESIONAL COLLAGENASE CLOSTRIDIUM HISTOLYTICUM CAUSES MEANINGFUL IMPROVEMENT IN MEN WITH PEYRONIE'S DISEASE: THE RESULTS OF A MULTI-INSTITUTIONAL ANALYSIS**
Hoang Minh Tue Nguyen, Wayne J. G. Hellstrom, Laith Alzweri, Amanda Chung, Ramon Virasoro, Ashley Tapscott, Matthew Ziegelmann, Landon Trost, Martin Gelbard
Tulane University School of Medicine
Presented By: Hoang Minh Tue Nguyen, MD
- 7:35 a.m. #85 ADHERENCE TO XIAFLEX (COLLAGENASE CLOSTRIDIUM HISTOLYTICUM) LABEL RECOMMENDATIONS AND PROVIDER SATISFACTION: A SURVEY OF INTERNATIONAL SOCIETY FOR SEXUAL MEDICINE MEMBERS**
Alex Galante¹, Thomas Masterson², Mohit Butaney², Alexander Pastuszak³, Hossein Sadeghi-Nejad^{4,5}, Ranjith Ramasamy²
¹*Department of Urology, University of Florida*, ²*Department of Urology, University of Miami*, ³*Department of Urology, Baylor College of Medicine*, ⁴*Department of Surgery, Division of Urology, Rutgers New Jersey Medical School*, ⁵*Department of Urology, Hackensack University Medical Center*
Presented By: Alexander Galante, MD
- 7:42 a.m. #86 EVALUATION OF THE IMPACT OF MARIJUANA USE ON SEMEN QUALITY: A PROSPECTIVE ANALYSIS**
Omer Raheem, MD¹, Thomas Walsh, MD², Kevin Ostrowski, MD², Charles Muller, MD²
¹*Tulane Urology*, ²*University of Washington*
Presented By: Omer Raheem, MD
- 7:49 a.m. #87 IN VITRO PROPAGATION OF KLINEFELTER SYNDROME SPERMATOGENIAL STEM CELLS: A TRANSLATIONAL SYSTEM FROM MOUSE TO HUMAN**
Nicholas Deebel, MD^{1,2}, Guillermo Galdon, MD¹, Nima Pourhabibi Zarandi, MD¹, Mark Pettenati, PhD³, Stuart Howards, MD², William Kearns, PhD⁴, Stanley Kogan, MD^{1,2}, Yanhe Lue, MD⁵, Ronald Swerdloff, MD⁵, Anthony Atala, MD^{1,2}, Hooman Sadri-Ardekani, MD, PhD^{1,2}
¹*Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC*, ²*Wake Forest School of Medicine, Department of Urology, Winston-Salem, NC*, ³*Wake Forest School of Medicine, Section of Medical Genetics, Winston-Salem, NC*, ⁴*AdvaGenix and Johns Hopkins Medicine, Baltimore and Rockville, MD*, ⁵*Division of Endocrinology, Department of Medicine, Harbor-UCLA Medical Center and Los Angeles Biomedical Research Institute, Torrance, CA*
Presented By: Nicholas Allen Deebel, MD

Concurrent Sessions End

- 8:00 a.m. - 8:30 a.m. Montague Boyd Essay Contest**
Moderator: Chad W. M. Ritenour, MD
Atlanta, GA
- Novel Immunohistochemical Signatures Predict Response of Bladder Cancer to Cisplatin-Based Neoadjuvant Chemotherapy**
Presenter: Patrick Hensley, MD
Lexington, KY
- Diabetic Bladder Dysfunction is Associated with Bladder Inflammation Triggered Through Hyperglycemia not Polyuria**
Presenter: Brian M. Inouye, MD
Durham, NC
- Incidence and Risk Factors for Prolonged Opioid Use Among Opioid-Naïve Patients Following Urologic Stone Surgery**
Presenter: Mohammed A. Said, MD
Atlanta, GA
- 8:30 a.m. - 10:30 a.m. Gee-Dineen Health Policy Forum 1**
Moderators: Christopher P. Filson, MD, MS
Atlanta, GA
Matthew J. Resnick, MD, MPH
Nashville, TN
- 8:30 a.m. - 9:00 a.m. State-of-the-Art Lecture: Health Care Consolidation: The Good, the Bad and the Ugly**
Speaker: Matthew J. Resnick, MD, MPH
Nashville, TN
- 9:00 a.m. - 9:50 a.m. Ambrose-Reed Lecture: Making MUSIC: Collaborative Quality Improvement in Urology**
Guest Speaker: David C. Miller, MD, MPH
Ann Arbor, MI
- 9:50 a.m. - 10:00 a.m. Q&A**
- 10:00 a.m. - 10:30 a.m. State-of-the-Art Lecture: Burnout in Urology and Medicine**
Speaker: Scott A. MacDiarmid, MD
Greensboro, NC
- 10:30 a.m. - 11:00 a.m. Break/Visit Exhibits**
Location: FLW Salons A-F
- 11:00 a.m. - 11:45 a.m. Ballenger Lecture: Identification of Inherited Prostate Cancer Risk**
Introducer: Scott B. Sellinger, MD, FACS
Tallahassee, FL
Guest Speaker: Leonard G. Gomella, MD, FACS
Philadelphia, PA
- 11:45 a.m. - 11:55 a.m. Best Video Viewing and Award Presentation**
Moderator: David D. Thiel, MD
Jacksonville, FL

Video #1**ROBOTIC ASSISTED LAPAROSCOPIC CAVAL THROMBECTOMY FOR METASTATIC MELANOMA**

Nathan Jung, MD, Amar Singh, MD

The University of Tennessee College of Medicine, Department of Urology, Chattanooga, TN

Presented By: Michael Tonzi, MD

11:55 a.m. - 1:10 p.m.**Industry Sponsored Lunch Symposium***Location: McArthur 4***11:55 a.m. - 1:10 p.m.****Industry Sponsored Lunch Symposium***Location: McArthur 1-3***1:10 p.m. - 1:40 p.m.****State-of-the-Art Lecture: Genetics in Prostate Cancer**Guest Speaker: Oliver Sartor, MD
*New Orleans, LA***1:40 p.m. - 2:20 p.m.****Presidential Lecture: Urolithiasis 2019 - Keys for the Practicing Urologist**Introducer: Scott B. Sellinger, MD, FACS
Tallahassee, FL

Presidential

Guest Speaker: Stephen Y. Nakada, MD, FACS, FRCS(Glasg.)
*Madison, WI***2:20 p.m. - 2:50 p.m.****Break/Visit Exhibits***Location: FLW Salons A-F***2:50 p.m. - 3:45 p.m.****Panel Discussion: Prosthetics in Urology 2019**Moderator: Chad W. M. Ritenour, MD
*Atlanta, GA*Panelists: Sherita A. King, MD
Augusta, GA
Aaron C. Lentz, MD, FACS
Raleigh, NC
Ranjith Ramasamy, MD
Miami, FL
Marc J. Rogers, MD
*Charleston, SC***Breakout Session Begins**

Concurrent to General Session

3:45 p.m. - 5:30 p.m.**Pediatric Sub-Plenary Session II****3:45 p.m. - 4:15 p.m.****Pediatric Poster Session***Location: McArthur 5*Moderators: Timothy P. Bukowski, MD
Raleigh, NC
Ali Ziada, MD
Lexington, KY

- Poster #113** **ROBOTIC AND OPEN TAILORED URETERAL REIMPLANTATION WITH EQUIVALENT OUTCOMES**
 Hugh Smith, MD¹, Amar Singh, MD², Daniel Herz, MD²
¹University of Tennessee Chattanooga, ²University of Tennessee - Chattanooga
 Presented By: Amanda Carter, MD
- Poster #114** **OUTCOME ANALYSIS OF PEDIATRIC PYELOPLASTY COMPARING ASYMPTOMATIC MILD-TO-MODERATE OBSTRUCTION TO SEVERELY OBSTRUCTED, PALPABLE RENAL UNITS**
 Alyssa Greiman, Ryan Zipper, Andrew Stec
 Medical University of South Carolina
 Presented By: Alyssa Kay Greiman, MD
- Poster #115** **RESULTS, COMPLICATION AND LESSONS LEARNED DURING 3 YEARS REPAIR OF HYPOSPADIAS IN A LOW VOLUME CENTER. PEDIATRIC SPECIALITIES HOSPITAL: OMAR TORRIJOS HERRERA, PANAMA 2014-2017**
 Florin Rotar, Celeste Alston
 HEPOTH, CSS-Panama
 Presented By: Florin Andrei Rotar
- Poster #116** **DELAYED PRESENTATION OF URETHROCUTANEOUS FISTULA AFTER HYPOSPADIAS REPAIR**
 Ghalib A. Jibara, MD, Ashley W. Johnston, MD, J. Todd Purves, MD, PhD, Jonathan C. Routh, MD, MPH, John S. Wiener, MD
 Duke University School of Medicine, Division of Urologic Surgery
 Presented By: Ashley W. Johnston, MD
- Poster #117** **ROLE OF DUSTING DURING URETEROSCOPIC LASER LITHOTRIPSY IN ADOLESCENT PATIENTS**
 Marcos Perez-Marchan, MS¹, Karina Escudero-Chu, MD², Marcos Perez-Brayfield, MD FAAP FACS^{1,2}
¹University of Puerto Rico, ²HIMA San Pablo
 Presented By: Marcos Perez-Marchan
- Poster #118** **SOCIETIES FOR PEDIATRIC UROLOGY MEETINGS – HOW ARE WOMEN REPRESENTED?**
 Vi Tran, MD¹, Madeline Rovira Koerner, MD MBA², Elizabeth Brooke Tullos, MD MPH², Alison Rasper, MD¹, Katie Ballert, MD¹, Deborah Erickson, MD¹, Amanda F. Saltzman, MD¹
¹University of Kentucky, Department of Urology, Lexington, KY, ²Louisiana State University, Department of Urology, New Orleans, LA
 Presented By: Madeline Rovira Koerner, MD, MBA
- Poster #119** **ISCHIOPAGUS FORM OF CONJOINED TWINS**
 Paula Domino, Christopher Bayne, Romano DeMarco
 University of Florida, Department of Urology
 Presented By: Paula Domino, MD
- Poster #120** **TEMPORIZING VESICOSTOMY HAS A MAJOR IMPACT IN PEDIATRIC PATIENTS WITH NEUROPATHIC BLADDERS**
 Ramphis Morales-López¹, Marcos Pérez-Marchán, Patricia Maymi-Castrodad, Juan Tío-Pagan, Karina Escudero-Chu², Marcos Pérez-Brayfield¹
¹Urology Section, University of Puerto Rico, San Juan PR, ²HIMA San Pablo, Caguas, PR
 Presented By: Ramphis Morales-Lopez, MD

- Poster #121** **NEONATAL CIRCUMCISION TRENDS FROM A PEDIATRIC UROLOGIC PERSPECTIVE: RESULTS FROM A SURVEY OF MEMBERS OF THE SOCIETY OF PEDIATRIC UROLOGY**
 Heather Kraft¹, Pamela Ellsworth², Kaity Colon-Sanchez², Mark Barraza²
¹University of Central Florida, College of Medicine, Orlando, FL,
²Nemours Children's Hospital, Department of Pediatric Urology, Orlando, FL
 Presented By: Heather Kraft
- Poster #122** **FILLING THE GAPS IN NEONATAL CIRCUMCISIONS: A UROLOGIC PHYSICIAN ASSISTANT NEONATAL CIRCUMCISION CLINIC OUTCOMES**
 Kaity Colon-Sanchez, PA-C, Pamela Ellsworth, MD
 Nemours Children's Hospital
 Presented By: Kaity Colon-Sanchez, MPAS
- Poster #123** **POSTOPERATIVE OPIOID STORAGE AND DISPOSAL IN PEDIATRIC UROLOGIC SURGERY**
 Brandon Garren, MD¹, Marley Lawrence, MD², Peggy McNaull, MD², Richard Sutherland, MD¹, Timothy Bukowski, MD¹, Matthew Nielsen, MD¹, Nathan Woody, CSSBB², Clark McCall, MHA², Karene Ricketts, MD², Brooke Chidgey, MD², Sherry Ross, MD¹
¹University of North Carolina at Chapel Hill, Department of Urology, ²University of North Carolina at Chapel Hill, Department of Anesthesiology
 Presented By: Brandon Garren, MD
- Poster #124** **PEDIATRIC AND RECONSTRUCTIVE UROLOGY CAMPAIGN IN EL SALVADOR: A GLOBAL HEALTH RESIDENCY TRAINING OPPORTUNITY**
 Elizabeth Wendel, MD¹, Kenneth Carney, MD, PharmD¹, Louis Perez, MD², Jonathan Kaye, MD³, Michelle Lightfoot, MD⁴, Lindsey Hartsell, MD¹, Anna Perez, RN⁵, Patricia Sabio, MA⁶, Edwin Smith, MD⁷
¹Emory, ²Children's Urology of the Carolinas, ³Cook Children's Hospital, ⁴Providence Sacred Heart Children's Hospital, ⁵UNC Children's Hospital, ⁶Independent, ⁷Children's Healthcare of Atlanta
 Presented By: Elizabeth Chang Wendel, MD
- Poster #125** **ROBOTIC ASSISTED LAPAROSCOPIC VARICOCELE REPAIR FOR ADOLESCENT SCROTAL VARICOCELE: AN ANALYSIS OF TECHNIQUE AND SURGICAL OUTCOMES**
 Hugh Smith, MD¹, Daniel Herz, MD²
¹University of Tennessee - Chattanooga Resident, ²University of Tennessee - Chattanooga Faculty
 Presented By: Michael Tonzi, MD
- Poster #126** **DYSFUNCTIONAL ELIMINATION A MAJOR CAUSE OF CHILD ABUSE**
 Steve Hodges, MD
 Wake Forest University
 Presented By: Parth Thakker, MD

4:15 p.m. - 5:30 p.m. Ask the Experts
Location: McArthur 4
Moderator: Edwin A. Smith, MD
Atlanta, GA

The Consequences of Bladder Neck Dysfunction and Bladder Neck Surgery in the Neurogenic Bladder

Panelist: John S. Wiener, MD
Durham, NC

The Valve Bladder: Getting Past the Legacy of Congenital Bladder Outlet Obstruction

Panelist: David M. Kitchens, MD
Birmingham, AL

Breakout Session Ends

3:45 p.m. - 4:45 p.m. Panel Discussion: How to Use Genetic Tests in Urologic Oncology

Moderator: Thomas E. Keane, MB, ChB, FRCSI, FACS
Charleston, SC
Panelists: Leonard G. Gomella, MD, FACS
Philadelphia, PA
Oliver Sartor, MD
New Orleans, LA
Kristen R. Scarpato, MD, MPH
Nashville, TN

4:45 p.m. - 5:00 p.m. International Volunteerism Program: Resident Reports

Moderator: Lorie G. Fleck, MD
Mobile, AL
Presenters: Alan Carnes, MD
Augusta, GA
Eugene B. Cone, MD
Durham, NC
J. Margaret Lovin, MD
Shreveport, LA

Concurrent Sessions Begin

Concurrent Session 1 of 2

5:00 p.m. - 6:00 p.m. Urologic Oncology II Poster Session

Location: McArthur 5
Moderators: Rabii Madi, MD, MBA, FACS
Augusta, GA
Padraic O'Malley, MSc, MD, FRCSC
Gainesville, FL

Poster #127

TRENDS IN PATIENT POSITIONING FOR ROBOTIC PROSTATECTOMY: RESULTS FROM A SURVEY OF THE ENDOUROLOGICAL SOCIETY

George Wayne, MD¹, Jeffrey Wei, BS², Jorge Pereira, MD¹, Alan Nieder, MD¹, Akshay Bhandari, MD¹

¹*Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL,*

²*Florida International University, College of Medicine*

Presented By: George Wayne, MD

Poster #128

NERVE MONITORING DURING LAPAROSCOPIC PROSTATECTOMY LEADS TO DECREASED RISK OF UPPER EXTREMITY POSITIONING RELATED INJURIES

Matthew J. Watson, DO¹, Brandon Koch, BS², Raymond Xu, BS³, Gregory Heath, DHSc, MPH⁴, Amar Singh, MD¹

¹University of Tennessee College of Medicine-Chattanooga Department of Urology, Chattanooga, TN, ²Medsurant Health, Denver, CO, ³University of Tennessee College of Medicine, Memphis, Tennessee, ⁴University of Tennessee-Chattanooga Department of Health and Human Performance, Chattanooga, TN

Presented By: Michael Tonzi, MD

Poster #129

DEVELOPING A PREDICTIVE NOMOGRAM FOR OPERATIVE DURATION IN ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY

Leslie Peard, MD¹, Adam Dugan², Andrew Harris, MD¹

¹University of Kentucky, Department of Urology, Lexington, KY,

²University of Kentucky, Department of Surgery, Lexington, KY

Presented By: Leslie McFann Peard, MD

Poster #130

PREDICTORS OF SURVIVAL WITH RADICAL PROSTATECTOMY FOR CLINICALLY LOCALIZED PROSTATE CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE

Thomas FitzGibbon, MD, MS¹, Samarjit Rai, MD¹, Jaimin Trivedi, PhD², Jamie Messer, MD¹, Murali Ankem, MD¹, Ahmed Haddad, MD, PhD¹

¹University of Louisville Department of Urology, ²University of Louisville Department of Cardiovascular and Thoracic Surgery

Presented By: Thomas Michael FitzGibbon, Jr., MD, MS

Poster #131

DISEASE SEVERITY OF PROSTATE CANCER AT DIAGNOSIS IN UNINSURED AND LOW-INCOME PATIENTS

Kevin Morgan, Emily Kelly, Zachary Connelly, Kara Babaian
LSU Shreveport

Presented By: Kevin Morgan, MD

Poster #132

BIOCHEMICAL RECURRENCE RATES AFTER CRYOABLATION OF THE PROSTATE: HOW DOES IT MEASURE UP?

Elizabeth Tourville, Daniel Zapata, Kristen Marley, Bradley Houston, Christian Dewan, Andrew Gowdey, Anthony Patterson, Robert Wake
University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN

Presented By: Elizabeth Tourville, MD

Poster #133

PROSTATE CANCER DIAGNOSIS WITHOUT TISSUE EXAMINATION, AND SUBSEQUENT HORMONAL TREATMENT IN THE UNITED STATES

Leonid Aksenov¹, Ted Gansler², Jason Chandrapal¹, Helmhne M. Sineshaw², Stacey Fedewa², K. Robin Yabroff², Ahmedin Jemal², Judd Moul¹

¹Duke University School of Medicine, Division of Urologic Surgery, Durham, NC, ²Intramural Research, American Cancer Society, Atlanta, GA

Presented By: Jason Chandrapal, MD

Poster #134

**BIODEGRADABLE POLYMER-DELIVERED,
SUBCUTANEOUSLY-ADMINISTERED LEUPROLIDE
ACETATE CONSISTENTLY ACHIEVED LOW NADIR
TESTOSTERONE LEVELS $\leq 5\text{NG/DL}$**

Judd Moul¹, Jason Chandrapal¹, John McLane², Deborah Boldt-Houle³, Stuart Atkinson³, Mark O'Brien³

¹*Division of Urology, Department of Surgery and Duke Cancer Institute, Duke University,* ²*Tolmar, Inc.,* ³*Tolmar Pharmaceuticals, Inc.*

Presented By: Jason Chandrapal, MD

Poster #135

WITHDRAWN

Poster #136

**DOES NUMBER OF LYMPH NODES REMOVED IMPACT
SURVIVAL IN PATIENTS WITH MUSCLE INVASIVE
BLADDER CANCER UNDERGOING RADICAL
CYSTECTOMY? A NATIONAL CANCER DATABASE
ANALYSIS**

Samarpit Rai¹, Adnan Dervishi¹, Jaimin Trivedi², Thomas FitzGibbon¹, Jamie Messer¹, Murali Ankem¹, Ahmed Haddad¹

¹*Department of Urology, University of Louisville School of Medicine, Louisville, KY,* ²*Department of Cardiovascular and Thoracic Surgery, University of Louisville School of Medicine, Louisville, KY*

Presented By: Samarpit Rai, MD

Poster #137

**DISCORDANT DRUG APPROVALS BETWEEN EUROPE
(EMA) AND THE USA (FDA): THE CASE OF VINFLUNINE
FOR BLADDER CANCER**

Steven Brousell, Joseph Fantony, Megan Van Noord, Michael Harrison, Brant Inman

Duke University

Presented By: Steven Craig Brousell, MD

Poster #138

**INITIAL EXPERIENCE OF SINGLE SURGEON
IMPLEMENTATION OF TRANSVERSE ABDOMINIS PLANE
(TAP) BLOCKS DURING CYSTECTOMY IN A DEDICATED
ENHANCED RECOVERY AFTER SURGERY (ERAS)
PROGRAM**

Blair Townsend, MD, MBA¹, William Worrlow, BA¹, Myra Robinson, MSPH², Shelby Jones, APRN, AG-ACNP-BC¹, Blair Parker, MSN, RN, CNL¹, Kris Gaston, MD¹, Peter Clark, MD¹, Stephen Riggs, MD¹

¹*Department of Urology, Levine Cancer Institute/Atrium Health,* ²*Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health*

Presented By: William Blair Townsend, MD

Poster #139

**INTRATHECAL HYDROMORPHONE IN CYSTECTOMY
PATIENTS: A NOVEL CONCEPT TO REDUCE OR ELIMINATE
POST-OPERATIVE NARCOTIC ANALGESIC USE**

John Moore, Ryan Peacock, David Hodge, Kaitlynn Custer, Jordan Cochuyt, Paul Young

Mayo Clinic Florida

Presented By: John R. Moore, MD

Poster #140

POST-OPERATIVE NARCOTIC PRESCRIBING PATTERNS FOR PATIENTS UNDERGOING RADICAL CYSTECTOMY

Elizabeth Green, Petria Thompson, Kristen Scarpato, Kirk Keegan, Sam Chang, David Penson, Daniel Barocas, Matthew Resnick

Vanderbilt University Medical Center

Presented By: Elizabeth Green, MD

Concurrent Session 2 of 2

5:00 p.m. - 6:00 p.m.

Miscellaneous and Urologic Reconstruction Poster Session

Location: McArthur 6

Moderators: Andrew C. Peterson, MD, FACS

Durham, NC

Steven P. Petrou, MD

Jacksonville, FL

Poster #141

STATISTICAL INFERENCE FOR CLINICAL UTILITY OF BIOMARKERS AT CONTROLLED SENSITIVITY

Yijian Huang¹, Isaac Parakati², Martin Sanda¹

¹Emory University, ²Lurie Children's Hospital in Chicago

Presented By: Yijian Huang, PhD

Poster #142

EFFECT OF HIGHLY-ALIGNED NANOSCALE SURFACE STRUCTURES ON MICROBIAL ADHESION

Mohammed Shahait, MD¹, Carolyn Motley², Zhou Ye², Timothy Averch, MD³, Yinyan Yang², Amrinder Nain, PhD⁴, Bahareh Behkam, PhD⁵

¹Penn, ²Virginia Tech, ³PH USC MG, ⁴Virginia tech, ⁵Virginia Tech

Presented By: Timothy David Averch, MD, FACS

Poster #143

CYTOKINE ANALYSIS OF PLATELET RICH PLASMA FOR USE IN UROLOGIC THERAPEUTICS

Ethan Matz, MD¹, Trent VanHorn¹, Steve Walker, PhD², John Jackson, PhD², Ryan Terlecki, MD³

¹Wake Forest School of Medicine, ²Wake Forest Institute for Regenerative Medicine, ³Wake Forest Baptist Medical Center

Presented By: Ethan Matz, MD

Poster #144

USE OF INFORMATICS FOR INTEGRATING BIOLOGY AND THE BEDSIDE, I2B2: TO DETERMINE THE PREVALENCE OF HYDRONEPHROSIS AND KIDNEY INJURY IN BENIGN PROSTATIC HYPERTROPHY

Ryan Joseph¹, Victoria Bird, MD²

¹University of Florida School of Medicine, ²NMARG, Division of Urology

Presented By: Ryan Joseph

Poster #145

PERIOPERATIVE OUTCOMES OF OPEN VERSUS MINIMALLY-INVASIVE SIMPLE PROSTATECTOMY: AN ANALYSIS OF THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

Adnan Dervishi, MD, Samarpit Rai, MD, Paul Knoll, MD, Jamie Messer, MD, Murali Ankem, MD, Ahmed Haddad, MD

University of Louisville School of Medicine, Department of Urology, Louisville, KY

Presented By: Adnan Dervishi, MD

- Poster #146** **WORK RELATIVE UNITS IN UROLOGY: CHANGES FROM 2006-2016**
 Zoe Gan¹, Case Wood, MD², Angela Smith, MD², Raj Pruthi, MD² Solomon Hayon, MD¹
¹*University of North Carolina at Chapel Hill School of Medicine,*
²*Department of Urology, University of North Carolina at Chapel Hill*
 Presented By: Solomon Hayon, MD
- Poster #147** **FURTHER ANALYSIS OF UROLOGIC PATIENTS TRANSFERRED TO A TERTIARY CARE CENTER OVER A 2 YEAR PERIOD HIGHLIGHTS SERIOUS AND POSSIBLY UNNECESSARY COST BURDEN IN HEALTHCARE**
 Marilyn Hopkins, Anthony Donigian, Andrew James, Andrew Harris
University of Kentucky
 Presented By: Marilyn K. Hopkins, MD
- Poster #148** **3D URINARY TRACT MODELS FOR UROLOGIC RESEARCH APPLICATIONS**
 Nicolas Gregory, BME BS¹, Steven Arce, PhD¹, Victoria Bird, MD²
¹*BME Univestiy of Florida,* ²*NMARG, Division of Urology*
 Presented By: Nicolas Gregory, BS
- Poster #149** **SURGICAL MANAGEMENT OF SEVERE HIDRADENITIS SUPPURATIVA**
 Madeline Cancian, MD, K Jeff Carney, MD, PHr
Emory University
 Presented By: Madeline Jones Cancian, MD
- Poster #150** **FOURNIER'S WOUND MANAGEMENT: A MULTIDISCIPLINARY APPROACH FOR SHORTER LENGTH OF STAYS**
 Margaret Higgins, Shubham Gupta, Alison Rasper
Univ. of Kentucky, Dept of Urology
 Presented By: Margaret Higgins, MD
- Poster #151** **MANUFACTURING OF ENGINEERED BLADDER TISSUES FOR SOLDIERS WITH BATTLEFIELD INJURY**
 Chi Lo, Alex Baume, Dalia Alzebedeh, Nan Zhang, Namrata Sangha, Sarah Albertson, Jacob Scott, Niranjan Ghimire, Ryan Szczec, Tsghe Abraha, Teresa Burnette, Heather Herron, Kassondra Hickey, Kathryn Krupp, Lindsey Creahan, Tiana Stewart, Torie Westendorf, Ryan Wolsky, Brad Damratoski, Lisa Hinshaw, Ashley Walker, Shannon Sdao, Todd Meinecke, Darren Hickerson, Rich Payne, John Jackson, Anthony Atala, Julie Allickson, James Yoo
Wake Forest School of Medicine
 Presented By: John D. Jackson, PhD
- Poster #152** **COMPLETION OF THE ERAS PATHWAY IN PATIENTS UNDERGOING SURGERY FOR BENIGN URINARY DIVERSION IS LOW**
 Omotola Ashorobi, MD¹, Alexander Nocera, MS², John Selph, MD¹
¹*University of Alabama at Birmingham, Dept. of Urology,*
²*University of Alabama School of Medicine*
 Presented By: Omotola Ashorobi, MD

- Poster #153

MANAGEMENT OF UPPER AND MID URETERAL STRICTURES: THE ROBOTIC ADVANTAGE
Russell Libby, Eric Shaw, Amanda Raines, Raju Thomas
Tulane University School of Medicine
Presented By: Russell Phip Libby, MD
- Poster #154

ROBOTIC-ASSISTED URETERO-URETEROSTOMY: PRACTICAL NUANCES TO ENHANCE A TECHNICALLY CHALLENGING PROCEDURE
Nickolas Scherzer¹, Matthew Cowper¹, Jonathan Zurawin, MD², Raju Thomas, MD, FACS, FRCS, MHA²
¹*Tulane University School of Medicine*, ²*Tulane University Department of Urology*
Presented By: Nickolas D. Scherzer

Concurrent Sessions End

6:30 p.m. - 10:00 p.m. **Residents Night Out**
Location: Meet at Convention Center Entrance by 6:15 p.m.

SATURDAY, MARCH 16, 2019

OVERVIEW

- 6:30 a.m. - 1:00 p.m. **Registration/Information Desk Open**
Location: FLW Registration Desk
- 6:30 a.m. - 1:00 p.m. **Speaker Ready Room Open**
Location: FLW McDowell
- 7:30 a.m. - 10:30 a.m. **Spouse/Guest Hospitality Suite Open**
Location: Taliesin
- 9:00 a.m. - 11:30 a.m. **Exhibit Hall Open**
Location: FLW Salons A-F
- 6:30 p.m. - 7:30 p.m. **SESAUA Annual Reception**
Location: Gold Patio
- 7:30 p.m. - 10:00 p.m. **SESAUA Annual Banquet**
Location: Gold Room

Concurrent Sessions Begin

Concurrent Session 1 of 4

- 7:00 a.m. - 8:00 a.m. **Kidney Cancer Poster Session**
Location: McArthur 5
Moderators: Cary N. Robertson, MD, FACS
 Durham, NC
 Ornob Roy, MD, MBA
 Charlotte, NC

- Poster #155** **DIABETES AND OTHER FACTORS AFFECTING THE OUTCOMES OF PATIENTS ON ACTIVE SURVEILLANCE FOR SMALL KIDNEY TUMORS**
 Tiagpaul Bhambher, BA, Ornob Roy, MD, MBA
Levine Cancer Institute
 Presented By: Ornob Roy, MD, MBA
- Poster #156** **PROSPECTIVE EVALUATION OF THE MAYO ADHESIVE PROBABILITY SCORE IN PREDICTING THE PRESENCE OF ADHERENT PERINEPHRIC FAT AT THE TIME OF OPEN PARTIAL NEPHRECTOMY**
 Katherine Cockerill¹, Isabella Galler¹, Colleen Ball², David Thiel,¹
¹*Mayo Clinic Jacksonville*, ²*Mayo Clinic*
 Presented By: Katherine Cockerill, MD
- Poster #157** **SUBTYPING OF CLEAR CELL RENAL CELL CARCINOMA PATIENTS TO DETERMINE FACTORS ASSOCIATED WITH OVERALL SURVIVAL**
 Jacob W. Greenberg, Gabriel Z. Leinwand, MD, L. Spencer Krane, MD
Tulane University School of Medicine
 Presented By: Louis Spencer Krane, MD
- Poster #158** **DEVELOPING A PREDICTIVE NOMOGRAM FOR OPERATIVE DURATION IN MINIMALLY-INVASIVE PARTIAL NEPHRECTOMY**
 Spencer Larkin, MD, Andrew Harris, MD
University of Kentucky Dept of Urology
 Presented By: Spencer Larkin, MD
- Poster #159** **ACHIEVING PERFECTION: WHAT FACTORS PREDICT TRIFECTA AND PENTAFECTA IN ROBOTIC PARTIAL NEPHRECTOMY?**
 Ashley Shumate, MD¹, Isabella Galler², Colleen Ball, MS³, Kaitlynn Custer², David Thiel, MD¹
¹*Department of Urology, Mayo Clinic, Jacksonville, FL*,
²*Department of Health Sciences Research, Mayo Clinic, Jacksonville, FL*, ³*Division of Biomedical Statistics and Informatics, Mayo Clinic*
 Presented By: Ashley Shumate, MD
- Poster #160** **EFFECT OF THE NEED FOR PRE-OPERATIVE DIALYSIS ON PERI-OPERATIVE OUTCOMES ON PATIENTS UNDERGOING LAPAROSCOPIC NEPHRECTOMY: AN ANALYSIS OF THE NSQIP DATABASE**
 Danica May, Kathleen Lata, MS, Dunia Khaled, MD, Daniel Canter, MD
Ochsner Clinic
 Presented By: Danica May, MD

- Poster #161** **TRENDS AND PREDICTORS OF RADICAL AND PARTIAL NEPHRECTOMY FOR STAGE I AND II RENAL CELL CARCINOMA: A NATIONAL CANCER DATABASE ANALYSIS**
 Samarpit Rai¹, Adnan Dervishi¹, Jaimin Trivedi², Ahmed Haddad¹, Murali Ankem¹
¹Department of Urology, University of Louisville School of Medicine, Louisville, KY, ²Department of Cardiovascular and Thoracic Surgery, University of Louisville School of Medicine, Louisville, KY
 Presented By: Samarpit Rai, MD
- Poster #162** **DEFINING VALUE IN PARTIAL NEPHRECTOMY: THE COST OF COMORBIDITIES, INTRAOPERATIVE VARIABLES, AND COMPLICATIONS**
 Andrew Harris, Jeff Goodwin, Leslie Peard, Patrick Hensly, Adam Dugan, Amul Bhalodi, John Roger Bell, Jason Bylund
University of Kentucky
 Presented By: Andrew Mitchell Harris, MD
- Poster #163** **UTILITY OF CONTRAST ENHANCED ULTRASOUND FOR CHARACTERIZATION OF MALIGNANCY IN SUSPICIOUS CYSTIC AND SMALL SOLID RENAL LESIONS**
 Andrew Gowdey¹, Patrick Probst², Mohan Narayanan³, Anthony Patterson⁴
¹UTHSC Urology, ²UTHSC Urology, Memphis, TN, ³UTHSC Radiology, Memphis, TN, ⁴UTHSC Urology Dept. Professor
 Presented By: Andrew Gowdey, MD
- Poster #164** **LAPAROSCOPIC ASSISTED UROLOGIST CONTROLLED DYNA-CT GUIDED KIDNEY TUMOR BIOPSY AND MICROWAVE ABLATION: A SERIES OF TRULY HYBRID OPERATIONS**
 Raymond Leveillee, MD, Deborah Diaz, PA
Bethesda Hospital/Baptist Health South Florida
 Presented By: Raymond John Leveillee, MD
- Poster #165** **DEMOGRAPHIC DISPARITIES IN RENAL CELL CARCINOMA DIAGNOSIS AND CLINICAL OUTCOMES IN RURAL KENTUCKY**
 Patrick Hensley¹, Andrew James¹, Bin Huang², Quan Chen², Andrew Harris
¹Department of Urology, University of Kentucky College of Medicine, ²Department of Biostatistics, University of Kentucky College of Public Health
 Presented By: Patrick Hensley, MD

Poster #166

SARCOPENIA IS INDEPENDENTLY ASSOCIATED WITH DECREASED OVERALL SURVIVAL AFTER SURGERY FOR INFERIOR VENA CAVA TUMOR THROMBUS PATIENTS

Milton Williams¹, Amir Khan¹, Dattatraya Patil, MBBS, MPH¹, Reza Nabavizadeh, MD¹, Sarah Psutka, MD, MSCR², Aarti Sekhar, MD³, Kenneth Ogan, MD¹, Mehmet Bilen, MD⁴, Viraj Master, MD¹

¹Department of Urology, Emory University School of Medicine, Atlanta, GA, USA, ²Department of Urology, University of Washington School of Medicine, Seattle, WA, USA, ³Department of Radiology, Emory University School of Medicine, Atlanta, GA, USA, ⁴Department of Hematology and Medical Oncology, Emory University School of Medicine, Atlanta, GA, USA

Presented By: Milton A'Keem Williams

Poster #167

SARCOPENIA AND NEUTROPHIL-LYMPHOCYTE RATIO PREDICT OVERALL SURVIVAL AFTER SURGERY FOR LOCALIZED RENAL CELL CARCINOMA

Milton Williams¹, Amir Khan¹, Dattatraya Patil, MBBS, MPH¹, Sarah Psutka, MD, MSCR², Aarti Sekhar, MD³, Kenneth Ogan, MD¹, Mehmet Bilen, MD⁴, Viraj Master, MD¹

¹Department of Urology, Emory University School of Medicine, Atlanta, GA, USA, ²Department of Urology, University of Washington School of Medicine, Seattle, WA, USA, ³Department of Radiology, Emory University School of Medicine, Atlanta, GA, USA, ⁴Department of Hematology and Medical Oncology, Emory University School of Medicine, Atlanta, GA, USA

Presented By: Milton A'Keem Williams

Poster #168

VALIDATION OF BEARS INDEX FOR PREDICTION OF LIPID POOR ANGIOMYOLIPOMA IN SMALL RENAL MASSES

Ashley Shumate, MD¹, Colleen Ball, MS², Kaitlynn Custer³, David Thiel, MD¹

¹Department of Urology, Mayo Clinic, Jacksonville, FL, ²Division of Biomedical Statistics and Informatics, Mayo Clinic, ³Department of Health Sciences Research, Mayo Clinic, Jacksonville, FL

Presented By: Ashley Shumate, MD

Concurrent Session 2 of 4

7:00 a.m. - 8:00 a.m.

Andrology II Poster Session

Location: McArthur 6

Moderators: Eric L. Laborde, MD
New Orleans, LA
Douglas F. Milam, MD
Nashville, TN

Poster #169

PATIENT DEMOGRAPHICS DO NOT ALTER COMPLICATION RATES OR NEED FOR REPEAT SURGERY IN VIRGIN PENILE PROSTHESES CASES

Jacob W Greenberg, Amit Reddy, Brian Dick, Scott Brimley, Peter Tsambarlis, Connor Burkett, David Chernobylsky, Wayne J. G. Hellstrom
Tulane University School of Medicine

Presented By: Amit Reddy

Poster #170

OUTCOMES OF PENILE PROSTHESIS SURGERY IN THE OCTOGENARIAN POPULATION: A SINGLE INSTITUTION EXPERIENCE

Adam Baumgarten, MD, Meghan Cooper, DO, Jonathan Beilan, MD, Julio Slongo, MD, Aram Loeb, MD, Justin Parker, MD, Rafael Carrion, MD

University of South Florida, Department of Urology

Presented By: Adam S. Baumgarten, MD, MBA

Poster #171

TRANS-FASCIAL PLACEMENT OF A HIGH, SUBMUSCULAR RESERVOIR IS A SAFE, SATISFACTORY, AND ACCURATE TECHNIQUE FOR PLACING AN INFLATABLE PENILE PROSTHESIS (IPP) POST RADICAL CYSTECTOMY (RC)

Bruce Kava, MD¹, Diana Lopategui, MD^{1,2}, Amanda Levine, BS¹, Maria Becerra, MD¹

¹*University of Miami Miller School of Medicine, ²Mt Sinai Medical Center, Miami, Florida*

Presented By: Bruce R. Kava, MD

Poster #172

SIMULTANEOUS PLACEMENT OF VIRTUE MALE SLING AND INFLATABLE PENILE PROSTHESIS IN MEN FOLLOWING RADICAL PROSTATECTOMY

Amanda Carter, MD, Hugh Smith, MD, Anand Shridharani, MD
University of Tennessee College of Medicine, Chattanooga, TN

Presented By: Amanda B. Carter, MD

Poster #173

CORRELATIONS OF INTRAOPERATIVE MEASURED PENILE CORPORAL LENGTH WITH PREOPERATIVE DEMOGRAPHICS: RACIAL VARIATION AND COMORBIDITY PROFILE

Nickolas Scherzer, Jacob Greenberg, Laith Alzweri, Andrew Gabrielson, Matthew Cowper, Tan Le, Paul Minetos, Connor Burkett, Peter Tsambarlis, Wayne J. G. Hellstrom
Tulane University School of Medicine

Presented By: Nickolas D. Scherzer

Poster #174

REVISITING THE VALUE OF A SECOND SEMEN ANALYSIS FOR EVALUATION OF THE INFERTILE MAN

Carter Boyd, MD¹, Daniel Osula, MD², Peter Kolettis, MD²

¹*UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama*

Presented By: Carter Boyd, MD

Poster #175

IMPROVEMENTS IN ERECTILE FUNCTION, SPERM MOTILITY, AND REVERSAL OF MALE INFERTILITY IN POST-KIDNEY ALLOGRAFT MEN: A SYSTEMATIC REVIEW

David Chernobylsky, Jacob W Greenberg, Hoang Minh Tue Nguyen, Andrew Gabrielson, Rubin Zhang, Anil Paramesh, Joseph Buell, Laith Alzweri, Wayne J. G. Hellstrom, Amit Reddy
Tulane University School of Medicine

Presented By: Amit Reddy

Poster #176

EFFECT OF RACE ON TREATMENT CHOICE AND OUTCOMES FOR PEYRONIE'S DISEASE

Evan Mulloy, MD, Callan Brownfield, MD, Frances Kim, MPH, Cara Cimmino, MD, Chad Ritenour, MD, Akansha Mehta, MD
Emory University School of Medicine, Department of Urology, Atlanta, GA

Presented By: Evan A. Mulloy, MD

Poster #177 **IMPACT OF PENILE TRACTION THERAPY WITH RESTOREX ON ERECTILE DYSFUNCTION IN A COHORT OF MEN WITH PEYRONIE'S DISEASE**

Paige Nichols, MD, David Yang, MD, Yifan Meng, MD, Joshua Savage, P.A.-C, Tobias Kohler, MD, M.P.H, Landon Trost, MD
Mayo Clinic, Department of Urology
Presented By: Paige Elizabeth Nichols, MD

Poster #178 **FIGHTING THE CURVE: PRELIMINARY DATA OF A YOUNG PRACTICING UROLOGIST, TRAINED IN THE ERA OF XIAFLEX**

Daniel Martinez, MD, Yekutieli Sandman, MD, Robert Puig, MD, Cosme Gomez, MD
Urology Specialty Care
Presented By: Daniel R. Martinez, MD

Poster #179 **PEYRONIE'S DISEASE PICTORIAL INTAKE FORM: IMPROVING THE IDENTIFICATION AND DISCUSSION OF PENILE CURVATURE THROUGH ILLUSTRATIONS**

Mohamed Adnan, BA¹, Caleb Natale, BA¹, Farid Zeineddine, BS¹, Seth Cohen, MD²
¹Tulane University School of Medicine, ²New York University Urology Associates
Presented By: Mohamed Adnan

Poster #180 **PEYRONIE'S DISEASE AND MANUAL MODELING DO NOT AFFECT PATIENT OUTCOMES IN VIRGIN PENILE PROSTHESIS CASES**

Amit Reddy, Jacob W Greenberg, Brian Dick, Scott Brimley, Peter Tsambarlis, Connor Burkett, Wayne J. G. Hellstrom
Tulane University School of Medicine
Presented By: Amit Reddy, BS

Poster #181 **DIABETES AND ERECTILE DYSFUNCTION: A SPECIAL POPULATION ANALYSIS FROM A PENILE DOPPLER COHORT OF OVER 1000 PATIENTS**

Ashley Shumate, MD¹, Isabella Galler², Colleen Ball, MS², Gregory Broderick, MD¹
¹Department of Urology, Mayo Clinic, Jacksonville, FL, ²Department of Health Sciences Research, Mayo Clinic, Jacksonville, FL
Presented By: Ashley Shumate, MD

Poster #182 **INTRAPROSTATIC LYMPHOCYTE DENSITY CORRELATES WITH TOTAL TESTOSTERONE LEVELS**

Andrew Gabrielson, Amit Reddy, Andrew Sholl, Laith Alzweri, Asim Abdel-Mageed, Jonathan Silberstein, Wayne J. G. Hellstrom
Tulane University School of Medicine
Presented By: Amit Reddy

Concurrent Session 3 of 4

7:00 a.m. - 8:00 a.m.

Video Session II

Location: McArthur 1-3

Moderators: Kenneth Ogan, MD
Atlanta, GA
David D. Thiel, MD
Jacksonville, FL

- Video #7** **ROBOTIC ASSISTED LAPAROSCOPIC RIGHT COMPLEX ADRENALECTOMY WITH SYNCHRONOUS PARTIAL NEPHRECTOMY**
Kristy Nguyen, MD, Jamie Messer, MD
University of Louisville
Presented By: Kristy Nguyen, MD
- Video #8** **ROBOTIC ASSISTED LAPAROSCOPIC CAVAL THROMBECTOMY FOR METASTATIC MELANOMA**
Nathan Jung, MD, Amar Singh, MD
The University of Tennessee College of Medicine, Department of Urology, Chattanooga, TN
Presented By: Michael Tonzi, MD
- Video #9** **ROBOTIC-ASSISTED REVISION OF ILEAL CONDUIT**
Dunia Khaled, Hayden Jahn, Daniel Canter
Ochsner Clinic Foundation
Presented By: Hayden E. Jahn, MD
- Video #10** **CHILDHOOD RENAL MASS VIDEO**
John Charles A Loomis, Resident¹, Amanda Saltzman, Assistant Professor^{1,2}, Jonathan Walker, Fellow², Nicholas Cost, Assistant Professor²
¹University of Kentucky, ²University of Colorado
Presented By: John Charles A. Loomis, MD
- Video #11** **SALVAGE ROBOT-ASSISTED LAPAROSCOPIC PROSTATECTOMY: DOES PRIMARY TREATMENT MAKE A DIFFERENCE?**
Fikret Onol, Seetharam Bhat, Travis Rogers, Cathy Jenson, Shannon Roof, Vipul Patel
Florida Hospital Global Robotics Institute
Presented By: Fikret Fatih Onol, MD, FEBU
- Video #12** **ROBOTIC RECONSTRUCTION OF LEFT COMMON ILIAC VEIN INJURY**
Reza Nabavizadeh, Resident, Mehrdad Alemozaffar, Assistant Professor
Emory
Presented By: Reza Nabavizadeh, MD

Concurrent Session 4 of 4

- 7:00 a.m. - 8:00 a.m.** **Prostate – Benign and Malignant Podium Session**
Location: FLW Salons G-J
Moderators: Chad R. Ritch, MD, MBA
 Miami, FL
 Martha K. Terris, MD, FACS
 Augusta, GA
- 7:00 a.m. #88** **COMPARISON OF OUTCOMES IN SALVAGE ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY FOR POST-PRIMARY RADIATION VS. ABLATION THERAPIES**
Fikret Onol, Hariharan Ganapathi, Travis Rogers, Seetharam Bhat, Cathy Jenson, Vipul Patel
Florida Hospital Global Robotics Institute
Presented By: Fikret Fatih Onol, MD, FEBU

- 7:07 a.m. #89 THE RATIO OF ATPASE6:ATPASE8 AS A URINE BIOMARKER FOR THE DETECTION OF PROSTATE CANCER**
 Carrie Q. Sun, MD¹, Kathryn L. Pellegrini, PhD¹, Kristin J. S. Douglas¹, Martin G. Sanda, MD^{1,2}, Rebecca S. Arnold, PhD^{1,2}
¹Department of Urology, Emory University School of Medicine, Atlanta, GA, ²Winship Cancer Institute, Emory University School of Medicine, Atlanta, GA
 Presented By: Rebecca Susan Arnold, MS, PhD
- 7:14 a.m. #90 COMPARISON OF BI-PARAMETRIC MRI TO FULL MULTIPARAMETRIC MRI FOR DETECTION OF CLINICALLY-SIGNIFICANT PROSTATE CANCER**
 Rachael Sherrer¹, Zachary Glaser¹, Jennifer Gordetsky^{1,2}, Jeffrey Nix¹, Kristin Porter³, Soroush Rais-Bahrami^{1,3}
¹Department of Urology, University of Alabama at Birmingham, Birmingham, AL, USA, ²Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA, ³Department of Radiology, University of Alabama at Birmingham, Birmingham, AL, USA
 Presented By: Rachael Leigh Sherrer, BA
- 7:21 a.m. #91 ESTABLISHING A MULTI-PARAMETRIC MRI FUSION PROSTATE BIOPSY PROGRAM: IS THERE A LEARNING CURVE?**
 Daniel Zapata¹, Patrick Probst¹, Ryan Russell², Michael Hailemariam², Robert Wake¹
¹UTHSC Memphis, Urology Department, ²UTHSC Memphis, College of Medicine
 Presented By: Daniel Fernando Zapata, MD
- 7:28 a.m. #92 COMPLICATIONS AFTER TRANSPERINEAL PROSTATE BIOPSY AMONG MEN WITH EMPLOYER BASED INSURANCE COVERAGE**
 KC Biebighauser¹, Mark Henry¹, Dattatraya Patil¹, Christopher Filson^{1,2}
¹Emory University School of Medicine, Department of Urology, Atlanta, GA, ²Atlanta VA Medical Center, Decatur, GA
 Presented By: KC Biebighauser, MD
- 7:35 a.m. #93 INCREASED ADOPTION AND UNDERUTILIZATION OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) IN THE UNITED STATES FROM 2008-2014**
 Jennifer Robles, MD¹, Vernon Pais, MD², Nicole Miller, MD¹
¹Vanderbilt University Medical Center, ²Duke University Medical Center
 Presented By: Jennifer Robles, MD
- 7:42 a.m. #94 ASF1B AS A POTENTIAL TARGET TO ATTENUATE HYPER-PROLIFERATION IN BENIGN PROSTATE HYPERPLASIA (BPH)**
 Paul Knoll, MD, Tiffany Perkins, MD, Samarjit Rai, MD, Jamie Messer, MD, Murali Ankem, MD
 University of Louisville
 Presented By: Samarjit Rai, MD

7:49 a.m. #95 **12 MONTH RESULTS OF THE PROSTATIC URETHRAL LIFT STUDY FOR OBSTRUCTIVE MEDIAN LOBE**
 Gregg R Eure¹, Daniel B Rukstalis²
¹*Urology of Virginia*, ²*Wake Forest Baptist Health*
 Presented By: Gregg R. Eure, MD

Concurrent Sessions End

- 8:00 a.m. - 9:30 a.m. Gee-Dineen Health Policy Forum 2**
 Moderators: Jonathan Henderson, MD
Shreveport, LA
 Cary W. Stimson Jr., MD, JD
Nashville, TN
- 8:00 a.m. - 8:35 a.m. State-of-the-Art Lecture: 2019 Legislative and Regulatory Update for Urologists**
 Guest Speaker: Gary M. Kirsh, MD
Cincinnati, OH
- 8:35 a.m. - 9:15 a.m. State-of-the-Art Lecture: What You Can Do To Protect Yourself Against Medical Malpractice Claims**
 Guest Speaker: Ben B. Rubinowitz, JD
New York, NY
- 9:15 a.m. - 9:30 a.m. Q&A**
- 9:30 a.m. - 9:45 a.m. ABU Update**
 Speaker: David B. Joseph, MD
Birmingham, AL
- 9:45 a.m. - 10:15 a.m. Break/Visit Exhibits**
Location: FLW Salons A-F
- 10:15 a.m. - 10:45 a.m. SESAUA Annual Business Meeting**
- 10:45 a.m. - 11:30 a.m. Resident Quiz Bowl**
 Moderators: Chad W. M. Ritenour, MD
Atlanta, GA
 Stephen J. Savage, MD
Charleston, SC
- 11:30 a.m. - 11:45 a.m. AUA Guidelines Update 2019**
 Speaker: Peter E. Clark, MD
Charlotte, NC
- 11:45 a.m. - 12:00 p.m. AUA Update**
 AUA President-Elect: John H. Lynch, MD
Washington, DC
- 12:00 p.m. - 1:00 p.m. T. Leon Howard Imaging Session**
 Moderator: Wesley M. White, MD
Knoxville, TN
- Case #1 ACUTE RENAL FAILURE IN A TRANSPLANT PATIENT**
 Heather Huelster, MD, Matthew Resnick, MD
Vanderbilt University Medical Center, Nashville, TN
 Presented By: Heather Huelster, MD

- Case #2** **A YOUNG PATIENT WITH GROSS HEMATURIA AND A BOWEL OBSTRUCTION**
 Jason Sandberg, Majid Mirzazadeh
Wake Forest School of Medicine
 Presented By: Jason M. Sandberg, MD
- Case #3** **A PREGNANT PATIENT WITH FLANK PAIN**
 Patrick Hensley¹, Jonathan Walker², Nicholas Cost², Amanda Saltzman¹
¹*Department of Urology, University of Kentucky College of Medicine*, ²*Division of Urology, Department of Surgery, University of Colorado*
 Presented By: Patrick Hensley, MD
- Case #4** **GROSS HEMATURIA AND HEMORRHAGIC SHOCK**
 Ava Saidian, MD, James Ellenburg, MD, Soroush Rais-Bahrami, MD
University of Alabama-Birmingham Medical Center
 Presented By: Ava Saidian, MD
- Case #5** **A 25 YEAR OLD MALE WITH TESTICULAR FULLNESS**
 Madeline Rovira Koerner, MD MBA, Danica May, MD, Stephen LaCour, MD, Jessie Gills, MD, Scott Delacroix, MD
Louisiana State University, Department of Urology, New Orleans, LA
 Presented By: Madeline Rovira Koerner, MD, MBA
- Case #6** **PEDIATRIC PATIENT WITH HYDRONEPHROSIS IN A SOLITARY KIDNEY**
 Sarah Starosta, Andrew Stec
Medical University of South Carolina, Dept of Urology, Charleston, SC
 Presented By: Sarah Starosta, MD

1:00 p.m. - 2:00 p.m.	Industry Sponsored Lunch Symposium <i>Location: McArthur 4</i>
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2:00 p.m. - 4:00 p.m.	Industry Sponsored Course <i>Location: McArthur 1-3</i>
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6:30 p.m. - 7:30 p.m. **SESAUA Annual Reception**
Location: Gold Patio

7:30 p.m. - 10:00 p.m. **SESAUA Annual Banquet**
Location: Gold Room

Participant Index

*Author/Presenter, Date, Time and Abstract Placement
See abstracts section for complete text*

ADNAN, MOHAMED 3/16/2019 7:00 a.m. Poster #179	BIEBIGHAUSER, KC 3/14/2019 3:50 p.m. Poster #58 3/16/2019 7:28 a.m. AB #92
AKSENOV, LEONID 3/13/2019 3:37 p.m. AB #2	BIENVENU, JAMES 3/15/2019 7:00 a.m.
ALEMOZAFFAR, MEHRDAD 3/14/2019 7:00 a.m. Poster #49 3/15/2019 7:00 a.m. Poster #91 3/15/2019 7:00 a.m. Poster #91 3/15/2019 7:28 a.m. AB #76	BIRD, VICTORIA 3/13/2019 3:30 p.m. Poster #10
ALZWERI, LAITH 3/13/2019 3:30 p.m. Poster #23 3/14/2019 3:50 p.m. Poster #80 3/14/2019 3:50 p.m. Poster #81	BIRD, VINCENT 3/13/2019 3:30 p.m.
ANDREWS, JACK 3/13/2019 3:30 p.m. Poster #22 3/15/2019 7:21 a.m. AB #83	BLOCH, PAUL 3/14/2019 7:00 a.m. Poster #33
ARNOLD, REBECCA 3/16/2019 7:07 a.m. AB #89	BLUM, EMILY 3/14/2019 1:45 p.m.
ASHORABI, OMOTOLA 3/13/2019 4:00 p.m. Video #3 3/14/2019 7:35 a.m. AB #28 3/15/2019 5:00 p.m. Poster #152	BOYD, CARTER 3/13/2019 3:30 p.m. Poster #4 3/13/2019 3:30 p.m. Poster #9 3/13/2019 3:30 p.m. Poster #11 3/14/2019 3:50 p.m. Poster #59 3/16/2019 7:00 a.m. Poster #174
AVERCH, TIMOTHY 3/15/2019 5:00 p.m. Poster #142	BOYDSTON, KOHLDON 3/14/2019 2:05 p.m. AB #58
AZZAWE, AHMAD 3/13/2019 4:00 p.m. Video #1	BROUSELL, STEVEN 3/15/2019 5:00 p.m. Poster #137
BALLERT, KATIE 3/13/2019 12:15 p.m.	BUKOWSKI, TIMOTHY 3/15/2019 3:45 p.m.
BAUMGARTEN, ADAM 3/16/2019 7:00 a.m. Poster #170	CALVERT, JOSHUA 3/15/2019 7:00 a.m. Poster #100
BEANO, HAMZA 3/15/2019 7:00 a.m. Poster #90	CANALES, BENJAMIN 3/14/2019 1:30 p.m. 3/14/2019 2:33 p.m. AB #62
BECERRA, MARIA 3/14/2019 7:00 a.m. Poster #54 3/14/2019 3:50 p.m. Poster #72	CANCIAN, MADELINE 3/14/2019 7:56 a.m. AB #31 3/15/2019 5:00 p.m. Poster #149
BELL, JOHN ROGER 3/14/2019 7:00 a.m.	CANTER, DANIEL 3/14/2019 3:40 p.m.
BENSON, COOPER 3/14/2019 7:28 a.m. AB #27	CARLOS, EVAN 3/13/2019 3:30 p.m. Poster #7 3/14/2019 7:00 a.m. Poster #38
	CARNES, ALAN 3/15/2019 4:45 p.m.

CARTER, AMANDA

3/15/2019 7:00 a.m. Poster #97
 3/15/2019 3:45 p.m. Poster #113
 3/16/2019 7:00 a.m. Poster #172

CASTLE, ERIK

3/14/2019 2:50 p.m.

CHANDRAPAL, JASON

3/15/2019 5:00 p.m. Poster #133
 3/15/2019 5:00 p.m. Poster #134

CHEN, FELIX

3/13/2019 4:33 p.m. AB #21

CHIANG, JASON

3/15/2019 7:00 a.m. Poster #93

CIMMINO, CARA

3/15/2019 7:00 a.m.

CLARK, PETER

3/14/2019 7:30 a.m.
 3/14/2019 3:50 p.m.
 3/16/2019 11:30 a.m.

CLAYTON, DOUGLASS

3/14/2019 4:00 p.m.

COCKERILL, KATHERINE

3/14/2019 7:00 a.m. Poster #39
 3/15/2019 7:00 a.m. Poster #86
 3/15/2019 7:00 a.m. Poster #103
 3/16/2019 7:00 a.m. Poster #156

COLACO, MARC

3/14/2019 3:50 p.m. Poster #65

COLON-SANCHEZ, KAITY

3/15/2019 3:45 p.m. Poster #122

CONE, EUGENE

3/15/2019 4:45 p.m.

CONNELLY, ZACHARY

3/14/2019 3:50 p.m. Poster #74

COUGHLIN, PAUL

3/14/2019 5:00 p.m.

CRISPEN, PAUL

3/15/2019 7:00 a.m.

DE, SHUVRO

3/14/2019 2:41 p.m. AB #51

DEEBEL, NICHOLAS

3/13/2019 3:30 p.m. Poster #27
 3/15/2019 7:49 a.m. AB #87

DELACROIX, SCOTT

3/14/2019 1:45 p.m.

DERVISHI, ADNAN

3/13/2019 4:00 p.m. Video #2
 3/15/2019 5:00 p.m. Poster #145

DILL, MICHELLE

3/14/2019 1:30 p.m. AB #53

DIX, DANIEL

3/15/2019 7:00 a.m. Poster #95

DOMINGUEZ-GUTIERREZ, PAUL

3/13/2019 3:30 p.m. Poster #3
 3/13/2019 3:30 p.m. Poster #13

DOMINO, M. PAULA

3/15/2019 3:45 p.m. Poster #119

DONELAN, WILLIAM

3/13/2019 3:30 p.m. Poster #12

DROPKIN, BENJAMIN

3/13/2019 3:30 p.m. Poster #15
 3/15/2019 7:14 a.m. AB #82

DUBIN, JUSTIN

3/15/2019 7:00 a.m. AB #80

EARL, JOSHUA

3/14/2019 7:00 a.m. Poster #36

EHLERS, MARK

3/13/2019 4:40 p.m. AB #22

EURE, GREGG

3/14/2019 7:00 a.m. Poster #44
 3/15/2019 7:00 a.m. Poster #107
 3/16/2019 7:49 a.m. AB #95

FILSON, CHRISTOPHER

3/15/2019 8:30 a.m.

FISHER, JOHN

3/15/2019 7:00 a.m. Poster #92

FITZGIBBON, THOMAS

3/13/2019 4:05 p.m. AB #17
 3/15/2019 5:00 p.m. Poster #130

FLECK, LORIE

3/15/2019 4:45 p.m.

GABRIELSON, ANDREW

3/13/2019 3:30 p.m. Poster #16

GALANTE, ALEXANDER

3/15/2019 7:35 a.m. AB #85

GANGE, STEVEN

3/15/2019 7:00 a.m. Poster #110

GARCIA-GIL, MAURILIO

3/15/2019 7:00 a.m. Poster #106

GARREN, BRANDON

3/14/2019 2:06 p.m. AB #46
 3/15/2019 3:45 p.m. Poster #123

GENNARO, KYLE

3/13/2019 4:12 p.m. AB #7

GILLS, JESSIE

3/13/2019 4:19 p.m. AB #8

GLASER, ZACHARY

3/14/2019 7:00 a.m. Poster #46

GOMELLA, LEONARD

3/15/2019 11:00 a.m.
 3/15/2019 3:45 p.m.

GOMELSKY, ALEXANDER

3/13/2019 12:45 p.m.

GONZALGO, MARK

3/14/2019 10:15 a.m.

GOODWIN, JEFFREY

3/14/2019 7:00 a.m. Poster #29
 3/14/2019 1:52 p.m. AB #64

GOWDEY, ANDREW

3/16/2019 7:00 a.m. Poster #163

GREEN, ELIZABETH

3/13/2019 4:19 p.m. AB #19
 3/14/2019 2:13 p.m. AB #67
 3/15/2019 5:00 p.m. Poster #140

GREIMAN, ALYSSA

3/15/2019 3:45 p.m. Poster #114

GROOMS, NOA

3/14/2019 3:50 p.m. Poster #79

GROS, BRENDON

3/14/2019 7:00 a.m. Poster #35

GUPTA, SHUBHAM

3/14/2019 7:00 a.m.

GURTNER, KRISTEN

3/14/2019 7:00 a.m. Poster #45
 3/14/2019 2:06 p.m. AB #66
 3/14/2019 3:50 p.m. Poster #61
 3/15/2019 7:49 a.m. AB #79

HACKER GESSNER, KATHRYN

3/13/2019 3:44 p.m. AB #3
 3/15/2019 7:00 a.m. Poster #88

HAN, JULIA

3/14/2019 7:00 a.m. Poster #41
 3/14/2019 8:17 a.m. AB #34

HARPER, BENJAMIN

3/13/2019 4:12 p.m. AB #18

HARRIS, ANDREW

3/14/2019 7:00 a.m. Poster #40
 3/14/2019 3:50 p.m. Poster #70
 3/15/2019 7:14 a.m. AB #74
 3/16/2019 7:00 a.m. Poster #162

HAYON, SOLOMON

3/15/2019 5:00 p.m. Poster #146

HEBERT, KEVIN

3/13/2019 3:30 p.m. Poster #21

HEMAL, ASHOK

3/14/2019 7:30 a.m.

HENDERSON, JONATHAN

3/16/2019 8:00 a.m.

HENRY, GERARD

3/15/2019 7:00 a.m.
 3/13/2019 3:30 p.m. Poster #19
 3/15/2019 7:00 a.m. Poster #108

HENSLEY, PATRICK

3/14/2019 2:27 p.m. AB #49
 3/14/2019 3:50 p.m. Poster #66
 3/15/2019 8:00 a.m.
 3/16/2019 7:00 a.m. Poster #165
 3/16/2019 12:00 p.m. Case #3

HERZ, DANIEL

3/14/2019 1:59 p.m. AB #45

HIGGINS, MARGARET

3/13/2019 3:30 p.m. Poster #26
 3/14/2019 1:52 p.m. AB #44
 3/14/2019 2:19 p.m. AB #60
 3/15/2019 5:00 p.m. Poster #150

HILL, HAYDEN

3/14/2019 3:50 p.m. Poster #68

HONG, GORDON

3/15/2019 7:00 a.m. Poster #101

HOPKINS, MARILYN

3/13/2019 3:58 p.m. AB #5
 3/14/2019 7:00 a.m. Poster #32
 3/15/2019 5:00 p.m. Poster #147

HSI, RYAN

3/14/2019 2:50 p.m.

HUANG, YIJIAN

3/15/2019 5:00 p.m. Poster #141

HUELSTER, HEATHER

3/16/2019 12:00 p.m. Case #1

HUMPHREYS, MITCHELL

3/13/2019 1:30 p.m.

INOUE, BRIAN

3/15/2019 8:00 a.m.

IVEY, JOSEPH

3/14/2019 7:00 a.m. Poster #48

JACKSON, JOHN

3/14/2019 7:42 a.m. AB #29
 3/14/2019 2:34 p.m. AB #70
 3/14/2019 3:50 p.m. Poster #82
 3/14/2019 3:50 p.m. Poster #83
 3/14/2019 3:50 p.m. Poster #84
 3/15/2019 5:00 p.m. Poster #151

JAHN, HAYDEN

3/16/2019 7:00 a.m. Video #9

JAMES, ANDREW

3/14/2019 10:15 a.m.

JOHNSTON, ASHLEY

3/14/2019 2:34 p.m. AB #50
 3/15/2019 7:00 a.m. Poster #99
 3/15/2019 3:45 p.m. Poster #116

JOHNSTONE, PETER

3/14/2019 3:40 p.m.

JOSEPH, DAVID

3/16/2019 9:30 a.m.

JOSEPH, RYAN

3/15/2019 5:00 p.m. Poster #144

KAUFMAN, MELISSA

3/13/2019 12:30 p.m.

KAVA, BRUCE

3/13/2019 3:30 p.m. Poster #17
 3/14/2019 3:50 p.m.
 3/16/2019 7:00 a.m. Poster #171

KEANE, THOMAS

3/15/2019 3:45 p.m.

KEEGAN, KIRK

3/14/2019 1:45 p.m.

KELLY, EMILY

3/15/2019 7:00 a.m. AB #72

KENNELLY, MICHAEL

3/13/2019 12:15 p.m.

KHATER, NAZIH

3/13/2019 3:30 p.m.

KING, SHERITA

3/15/2019 2:50 p.m.

KIRSH, GARY

3/16/2019 8:00 a.m.

KITCHENS, DAVID

3/15/2019 4:30 p.m.

KLAASSEN, ZACHARY

3/14/2019 1:45 p.m. AB #63

KOCH, NICHOLAS

3/14/2019 1:51 p.m. AB #56

KOERNER, MADELINE

3/15/2019 3:45 p.m. Poster #118
 3/16/2019 12:00 p.m. Case #5

KOLETTIS, PETER

3/13/2019 3:30 p.m.

KOWALIK, URSZULA

3/14/2019 7:07 a.m. AB #24
 3/14/2019 8:24 a.m. AB #35

KRAFT, HEATHER

3/15/2019 3:45 p.m. Poster #121

KRANE, LOUIS

3/14/2019 7:58 a.m. AB #40
 3/14/2019 8:05 a.m. AB #41
 3/16/2019 7:00 a.m. Poster #157

KUO, JENNIFER

3/14/2019 7:00 a.m. Poster #30

KWENDA, ELIZABETH

3/13/2019 3:30 p.m. Poster #5

LABORDE, ERIC

3/16/2019 7:00 a.m.

LACY, JOHN

3/14/2019 7:00 a.m.
 3/15/2019 7:00 a.m.

LARKIN, SPENCER

3/16/2019 7:00 a.m. Poster #158

LAVIANA, AARON

3/13/2019 3:30 p.m.

LAY, AARON

3/14/2019 1:30 p.m.

LEE, CHERYL

3/14/2019 8:30 a.m.
 3/14/2019 10:15 a.m.

LEINWAND, GABRIEL

3/15/2019 5:00 p.m. Poster #154

LENTZ, AARON

3/15/2019 2:50 p.m.

LEUNG, ANDREW

3/14/2019 7:00 a.m. Poster #42

LEVEILLEE, RAYMOND

3/16/2019 7:00 a.m. Poster #164

LIBBY, RUSSELL3/13/2019 4:00 p.m. Video #4
3/15/2019 5:00 p.m. Poster #153**LOMAX, STEVEN**

3/15/2019 7:00 a.m. Poster #104

LOMBOY, JASON

3/14/2019 3:50 p.m. Poster #67

LOOMIS, JOHN CHARLES3/14/2019 2:20 p.m. AB #68
3/16/2019 7:00 a.m. Video #10**LORENTZ, CHARLES**

3/13/2019 4:05 p.m. AB #6

LOVIN, J. MARGARET3/14/2019 2:13 p.m. AB #47
3/15/2019 4:45 p.m.**LYNCH, JOHN**

3/16/2019 11:45 a.m.

MACDIARMID, SCOTT

3/15/2019 10:00 a.m.

MADI, RABII

3/15/2019 5:00 p.m.

MARCOVICH, ROBERT

3/14/2019 3:40 p.m.

MARTINEZ, DANIEL3/15/2019 7:00 a.m. Poster #112
3/16/2019 7:00 a.m. Poster #178**MASTER, VIRAJ**

3/14/2019 3:40 p.m.

MATZ, ETHAN3/13/2019 3:30 p.m. Poster #24
3/15/2019 5:00 p.m. Poster #143**MAY, DANICA**3/14/2019 7:37 a.m. AB #37
3/16/2019 7:00 a.m. Poster #160**MCKNIGHT, DONALD**

3/13/2019 2:15 p.m.

MENDELSON, RICHARD

3/15/2019 7:07 a.m. AB #81

MILAM, DOUGLAS3/15/2019 7:00 a.m.
3/16/2019 7:00 a.m.**MILLER, DAVID**

3/15/2019 9:00 a.m.

MILLER, NICOLE

3/14/2019 3:40 p.m.

MOORE, JOHN3/13/2019 4:00 p.m. Video #5
3/14/2019 7:00 a.m. Poster #43
3/14/2019 7:00 a.m. Poster #52
3/15/2019 5:00 p.m. Poster #139**MORALES-LOPEZ, RAMPHIS**3/14/2019 7:14 a.m. AB #25
3/15/2019 3:45 p.m. Poster #120**MORENO, CARLOS**3/14/2019 3:50 p.m. Poster #73
3/15/2019 7:35 a.m. AB #77**MORGAN, KEVIN**

3/15/2019 5:00 p.m. Poster #131

MOSES, KELVIN3/13/2019 3:30 p.m.
3/14/2019 3:40 p.m.
3/14/2019 7:00 a.m. Poster #55**MOY, M. LOUIS**

3/13/2019 1:00 p.m.

MULLOY, EVAN

3/16/2019 7:00 a.m. Poster #176

NABAVIZADEH, REZA

3/16/2019 7:00 a.m. Video #12

NAKADA, STEPHEN

3/15/2019 1:40 p.m.

NAM, CATHERINE

3/13/2019 4:26 p.m. AB #9

NARANG, GOPAL

3/13/2019 3:30 p.m. Poster #14

NATALE, CALEB

3/14/2019 2:41 p.m. AB #71

NGUYEN, HOANG MINH TUE

3/15/2019 7:28 a.m. AB #84

NGUYEN, KRISTY3/14/2019 3:50 p.m. Poster #77
3/16/2019 7:00 a.m. Video #7**NICHOLS, PAIGE**

3/16/2019 7:00 a.m. Poster #177

NIEDER, ALAN

3/13/2019 3:30 p.m.
 3/14/2019 3:50 p.m. Poster #63

NOCERA, ALEXANDER

3/14/2019 7:21 a.m. AB #26

OGAN, KENNETH

3/16/2019 7:00 a.m.

O'HANLON, MONICA

3/15/2019 7:00 a.m. Poster #102

O'MALLEY, PADRAIC

3/15/2019 5:00 p.m.

ONOL, FIKRET

3/14/2019 7:00 a.m. Poster #50
 3/16/2019 7:00 a.m. Video #11
 3/16/2019 7:00 a.m. AB #88

OSTROWSKI, ANDREW

3/14/2019 7:00 a.m. Poster #37

OTTO, BRANDON

3/14/2019 3:40 p.m.
 3/14/2019 1:44 p.m. AB #55

PAK, RAYMOND

3/13/2019 3:30 p.m.

PAREKATTIL, SIJO

3/15/2019 7:00 a.m. Poster #109

PARKER, JUSTIN

3/13/2019 3:30 p.m.

PATHAK, RAM

3/14/2019 7:00 a.m. AB #23

PATTARAS, JOHN

3/14/2019 7:00 a.m.

PAVLINEC, JONATHAN

3/14/2019 7:44 a.m. AB #38
 3/14/2019 7:51 a.m. AB #39

PEARD, LESLIE

3/14/2019 3:50 p.m. Poster #57
 3/15/2019 5:00 p.m. Poster #129

PEREZ, LUIS

3/14/2019 1:45 p.m.
 3/14/2019 2:48 p.m. AB #52

PEREZ-BRAYFIELD, MARCOS

3/14/2019 7:00 a.m.

PEREZ-MARCHAN, MARCOS

3/15/2019 3:45 p.m. Poster #117

PETERSON, ANDREW

3/15/2019 5:00 p.m.

PETROU, STEVEN

3/15/2019 5:00 p.m.

PILKINGTON, JAMES

3/14/2019 8:10 a.m. AB #33

POPE, JOHN

3/14/2019 3:45 p.m.

POTTS, BRADLEY

3/14/2019 7:49 a.m. AB #30

PROCTOR, STEPHEN

3/14/2019 1:59 p.m. AB #65

PURVES, J. TODD

3/14/2019 4:15 p.m.

RABLEY, ANDREW

3/13/2019 3:51 p.m. AB #4
 3/13/2019 3:58 p.m. AB #16
 3/14/2019 2:12 p.m. AB #59

RAHEEM, OMER

3/13/2019 3:30 p.m. Poster #18
 3/13/2019 3:30 p.m. Poster #20
 3/15/2019 7:42 a.m. AB #86

RAI, SAMARPIT

3/14/2019 3:50 p.m. Poster #71
 3/15/2019 5:00 p.m. Poster #136
 3/16/2019 7:00 a.m. Poster #161
 3/16/2019 7:42 a.m. AB #94

RAIS-BAHRAMI, SOROUSH

3/14/2019 11:30 a.m.

RAMASAMY, RANJITH

3/15/2019 2:50 p.m.

REDDY, AMIT

3/16/2019 7:00 a.m. Poster #169
 3/16/2019 7:00 a.m. Poster #173
 3/16/2019 7:00 a.m. Poster #175
 3/16/2019 7:00 a.m. Poster #180
 3/16/2019 7:00 a.m. Poster #182

REISZ, PETER

3/15/2019 7:00 a.m. Poster #85

RESNICK, MATTHEW

3/15/2019 8:30 a.m.

RIGGS, STEPHEN

3/13/2019 2:15 p.m.

RITCH, CHAD

3/16/2019 7:00 a.m.

RITENOUR, CHAD

3/15/2019 8:00 a.m.
 3/15/2019 2:50 p.m.
 3/16/2019 10:45 a.m.

ROBERTSON, CARY

3/16/2019 7:00 a.m.

ROBLES, JENNIFER

3/13/2019 2:15 p.m.
 3/13/2019 4:33 p.m. AB #10
 3/14/2019 3:50 p.m.
 3/16/2019 7:35 a.m. AB #93

ROGERS, MARC

3/15/2019 2:50 p.m.

ROTAR, FLORIN

3/15/2019 3:45 p.m. Poster #115

ROY, ORNOB

3/16/2019 7:00 a.m.
 3/16/2019 7:00 a.m. Poster #155

RUBINOWITZ, BEN

3/16/2019 8:35 a.m.

SADRI, HOOMAN

3/13/2019 3:30 p.m. Poster #28
 3/14/2019 1:45 p.m. AB #43

SAID, MOHAMMED

3/13/2019 3:30 p.m. Poster #8
 3/13/2019 4:00 p.m. Video #6
 3/14/2019 1:58 p.m. AB #57
 3/15/2019 8:00 a.m.

SAIDIAN, AVA

3/16/2019 12:00 p.m. Case #4

SANDA, MARTIN

3/14/2019 3:50 p.m.
 3/14/2019 3:50 p.m. Poster #75
 3/14/2019 3:50 p.m. Poster #76
 3/15/2019 7:07 a.m. AB #73

SANDBERG, JASON

3/16/2019 12:00 p.m. Case #2

SARTOR, OLIVER

3/15/2019 1:10 p.m.
 3/15/2019 3:45 p.m.

SAVAGE, STEPHEN

3/16/2019 10:45 a.m.

SAYYID, RASHID

3/14/2019 3:50 p.m. Poster #64
 3/15/2019 7:00 a.m. Poster #87
 3/15/2019 7:00 a.m. Poster #111

SCALES, CHARLES

3/14/2019 1:30 p.m.
 3/14/2019 3:40 p.m.

SCARPATO, KRISTEN

3/15/2019 3:45 p.m.

SELLINGER, SCOTT

3/13/2019 12:05 p.m.
 3/14/2019 9:30 a.m.
 3/15/2019 11:00 a.m.
 3/15/2019 1:40 p.m.

SHEPHERD, CAITLIN

3/14/2019 7:00 a.m. Poster #53

SHERRER, RACHAEL

3/15/2019 7:00 a.m. Poster #105
 3/16/2019 7:14 a.m. AB #90

SHUMATE, ASHLEY

3/14/2019 7:30 a.m. AB #36
 3/15/2019 7:00 a.m. Poster #94
 3/16/2019 7:00 a.m. Poster #159
 3/16/2019 7:00 a.m. Poster #168
 3/16/2019 7:00 a.m. Poster #181

SILBERSTEIN, JONATHAN

3/14/2019 7:00 a.m.
 3/14/2019 7:00 a.m. Poster #56
 3/15/2019 7:00 a.m. Poster #96

SINEATH, ROBERT

3/14/2019 3:50 p.m. Poster #69

SLONGO, JULIO

3/14/2019 2:27 p.m. AB #69

SMITH, EDWIN

3/14/2019 3:45 p.m.
 3/15/2019 4:15 p.m.

SORENSEN, MATTHEW

3/14/2019 7:00 a.m. Poster #34

STARK, TIMOTHY

3/14/2019 3:50 p.m. Poster #60

STAROSTA, SARAH

3/16/2019 12:00 p.m. Case #6

STIMSON, CARY

3/16/2019 8:00 a.m.

STRUP, STEPHEN

3/14/2019 10:15 a.m.

SU, LI-MING

3/15/2019 7:00 a.m.

TERRIS, MARTHA

3/16/2019 7:00 a.m.

THAKKER, PARTH

3/15/2019 3:45 p.m. Poster #126

THIEL, DAVID

3/13/2019 4:00 p.m.

3/15/2019 11:45 a.m.

3/16/2019 7:00 a.m.

TONG, CHING MAN CARMEN

3/14/2019 2:20 p.m. AB #48

TONZI, MICHAEL

3/15/2019 11:45 a.m. Video #1

3/15/2019 3:45 p.m. Poster #125

3/15/2019 5:00 p.m. Poster #128

3/16/2019 7:00 a.m. Video #8

TOURVILLE, ELIZABETH

3/13/2019 3:37 p.m. AB #13

3/15/2019 5:00 p.m. Poster #132

TOWNSEND, WILLIAM

3/13/2019 4:26 p.m. AB #20

3/15/2019 7:00 a.m. Poster #89

3/15/2019 5:00 p.m. Poster #138

VALADEZ, LIBRADO

3/14/2019 8:03 a.m. AB #32

VELASQUEZ ESCOBAR, MARIA

3/13/2019 3:30 p.m. AB #12

VIPRAKASIT, DAVIS

3/13/2019 4:00 p.m.

VISHWANATHA, JAMBOOR

3/14/2019 3:50 p.m. Poster #78

WAYNE, GEORGE

3/13/2019 3:30 p.m. AB #1

3/13/2019 3:30 p.m. Poster #25

3/15/2019 7:00 a.m. Poster #98

3/15/2019 5:00 p.m. Poster #127

WEBB, ERIC

3/15/2019 7:42 a.m. AB #78

WENDEL, ELIZABETH

3/15/2019 3:45 p.m. Poster #124

WHITE, WESLEY

3/16/2019 12:00 p.m.

WIENER, JOHN

3/15/2019 4:15 p.m.

WILLARD, THOMAS

3/13/2019 3:44 p.m. AB #14

WILLIAMS, MILTON

3/14/2019 8:12 a.m. AB #42

3/16/2019 7:00 a.m. Poster #166

3/16/2019 7:00 a.m. Poster #167

WINSHIP, BRENTON

3/13/2019 3:30 p.m. Poster #1

3/13/2019 3:30 p.m. Poster #6

3/14/2019 7:00 a.m. Poster #31

3/14/2019 1:37 p.m. AB #54

WOOD, CASE

3/13/2019 4:40 p.m. AB #11

3/14/2019 3:50 p.m. Poster #62

WOOD, KYLE

3/14/2019 3:40 p.m.

YUZHAKOV, STANISLAV

3/13/2019 3:30 p.m. Poster #2

ZAPATA, DANIEL

3/16/2019 7:21 a.m. AB #91

ZIADA, ALI

3/15/2019 3:45 p.m.

Podiums

Podium #1

UROLOGISTS LEAD SURGICAL SUBSPECIALISTS IN MEDICARE PRESCRIPTION DRUG COSTS

George Wayne, MD, Maurilio Garcia, MD, Juan Cedeno, MD, Elizabeth Nagoda, MD, Jorge Pereira, MD

Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL

Presented By: George Wayne, MD

Introduction: Prescription drug costs represent a major source of healthcare expenditure in the United States. While medication costs are most often associated with the medical specialties, the increased use of specialty drugs for oncologic care by surgical specialists may prove to be a significant cost driver and opportunity for savings. As such, we sought to evaluate Medicare Part D Prescription Drug (MPD) utilization in order to disaggregate surgical specialty spending, evaluate cost attributed to Urologic care, and identify factors predictive of high-cost prescribing (HCP).

Methods: Indexing by NPI number and specialty code we analyzed surgical subspecialist prescription drug cost data using the 2015 "Medicare Fee-For-Service Provider Utilization and Payment Data: Part D Prescriber Summary". Providers in the highest quartile of total prescription drug costs for this cohort were identified as HCP providers. Categorical data analysis and logistic regression were then used to identify factors associated with HCP.

Results: The aggregate drug cost for all surgical specialties in 2015 was noted to be \$5.69 billion dollars for over 16 million MPD beneficiaries. Urology was found to have the highest median total prescriber drug cost (\$89,622.19, $p < 0.01$), largest median number of drug claims (838, $p < 0.01$) and the largest median number of MPD beneficiaries (284) of all surgical specialties. Share of spending varied regionally, with urologists from the Northeast to be most likely classified as a high-cost prescriber (Odds Ratio 1.7 – 2.0, $p < 0.01$). Over all, subspecialties with a greater emphasis on cancer care were more likely than general surgeons to be high-cost prescribers.

Conclusion: National spending on health care has attracted significant criticism and concern. A major cost-driver, prescription drug coverage, is increasingly attributable to surgical subspecialist care, with Urologists leading in volume and cost among MPD providers. Urologists must be aware of their significant role in driving these costs, in order to both lead in upending them and to ensure our patients' continued access to our care.

Podium #2

ANALGESIC PRESCRIBING PATTERNS IN EMERGENCY DEPARTMENTS FOR ACUTE SYMPTOMATIC UROLITHIASIS IN THE UNITED STATES, 2006-2014

Leonid I. Aksenov^{1,2}, Ashley W. Johnston, MD^{1,2}, Brenton B. Winship, MD¹, Russell S. Terry, MD¹, Michael E. Lipkin, MD, MBA¹, Jonathan C. Routh, MD, MPH¹, Glenn M. Preminger, MD¹, Charles D. Scales, MD, MSHS^{1,2}

¹Duke University School of Medicine, Division of Urologic Surgery, ²Duke Clinical Research Institute

Presented By: Leonid I. Aksenov

Introduction: A critical barrier to addressing the opioid crisis is understanding current prescribing patterns for acute pain, such as pain associated with symptomatic urolithiasis. For symptomatic urolithiasis, non-opioids, such as nonsteroidal anti-inflammatory drugs, are equally efficacious, longer lasting, and safer than opioids. Given this context, our objective is to describe analgesic prescribing patterns and trends for symptomatic urolithiasis in US emergency departments (EDs).

Methods: We conducted a cross-sectional analysis of visits for urolithiasis in the 2006–2014 National Hospital Ambulatory Medical Care Survey-Emergency Department. Established diagnostic codes were used to identify all adult (≥ 18 years) visits for urolithiasis. The primary outcome was pain medication type administered, which was identified using Multum Lexicon third-level drug categories. Covariates included medication administration setting, pain on admission, age, gender, and race. Pain severity was derived from the standard 10-point pain scale (mild [1-3], moderate [4-6], or severe [7-10]). Nationally representative estimates were analyzed using the Rao-Scott chi-square test or Z-test, as appropriate.

Results: From 2006 to 2014, there were approximately 13 million US ED visits for urolithiasis.

Overall, opioid prescribing for symptomatic urolithiasis increased from 70% in 2006 to 84% in 2014 ($P=0.011$ for trend). Opioids were prescribed during visits at a rate of 61% and at visit discharge at a rate of 53%. Non-opioids were prescribed during visits at a rate of 52% and at visit discharge at a rate of 18%. The majority (73%) of patients with severe pain received opioids during their visit. Almost half (44%) of patients reporting mild pain received an opioid during their visit. At visit discharge, 52% of patients with mild pain were prescribed opioids and 59% of patients with severe pain were prescribed an opioid, with no statistical difference between the proportions ($P=0.423$). Non-white patients were less likely to receive opioids than white patients during their ED visit (54% vs. 61%, $P=0.044$) and at visit discharge (43% vs. 56%, $P=0.019$).

Conclusion: Despite the evidence that non-opioids are safer, more effective, and longer lasting than opioids, US physicians continue to liberally prescribe opioid analgesics for symptomatic urolithiasis. Our findings highlight the need for strategies to minimize opioid use for symptomatic urolithiasis and understand differences in pain management.

Podium #3

POST-OPERATIVE OPIOID PRESCRIBING IN UROLOGY: ARE WE CONTRIBUTING TO THE NATIONAL CRISIS?

Kathryn Hacker¹, Jae Jung¹, J. Lee Graves¹, Hannah Cook¹, Peggy McNaul¹, Brooke Chidgey¹, Jami Mann¹, Michael Woods², Scott Stioff¹, Brian Cope¹, Davis Viprasit¹, Hung-Jui Tan¹, Mathew Raynor¹, Brad Figler¹, R. Matthew Coward¹, Kristy Borawski¹, Eric Wallen¹, Raj Pruthi¹, Angela Smith¹, Matthew Nielsen¹

¹University of North Carolina at Chapel Hill, ²Loyola University Medical Center

Presented By: Kathryn E. Hacker Gessner, MD, PhD

Introduction: The incidence of new persistent opioid use following surgery is approximately 6-10%, more common than any single post-operative complication. Additionally, a recent systematic review found 67-92% of patients report unused opioid medications after a surgical prescription. Reducing the oversupply of opioids may substantially impact the opioid epidemic as a primary and secondary prevention strategy. However, minimal data are available to inform urologists' prescribing practices. Therefore, we aimed to evaluate post-surgical opioid requirements of patients following urologic surgeries and adjust prescribing schedules to reduce oversupply of opioid prescriptions.

Methods: Patients undergoing urologic procedures associated with 49 specified CPT codes were identified. Details regarding medications prescribed for postoperative pain were obtained through our pharmacy database. Two weeks post-procedure, patients were contacted via telephone to participate in a survey evaluating postoperative opioid usage, storage, and disposal habits.

Results: During the study period, 877 patients underwent urologic procedures. We contacted 606, and 264 completed the survey. Among survey respondents, 75% had unused opioids from their initial postoperative prescription, and the average amount of narcotics used was 55% of the initial prescription. In the 6 month study period, approximately 2800 opioid pills remained unused. We then created procedure-specific Standardized Opioid Prescribing Schedules based on known usage data and evaluated subsequent usage data following implementation of standardized prescribing amounts.

Conclusion: Consistent with observations in other surgical populations, we identified substantial oversupply from standard prescribing practices following urologic procedures. Extrapolating this number across the US, the 11,703 practicing urologists described in the AUA 2015 census prescribe approximately 24 million excess opioid pills each year. Newly developed data-driven post-operative prescribing schedules coupled with education on appropriate disposal provide an opportunity for urologists to take an active role in opioid stewardship and reduce oversupply and diversion of narcotic medications.

Podium #4
UNDERSTANDING PATIENT EXPECTATIONS AND DETERMINANTS OF SATISFACTION IN A UROLOGY CLINIC AT AN ACADEMIC MEDICAL CENTER
 Andrew Rabley¹, Haley Oberhofer², Scott Rizzi², Shahab Bozorgmehri¹, Samantha Larson³, Julia Han¹, M. Louis Moy¹
¹Department of Urology, University of Florida, Gainesville, FL, ²College of Medicine, University of Florida, Gainesville, FL, ³College of Public Health, University of Florida
 Presented By: Andrew Rabley, MD

Introduction: As healthcare evolves, patient satisfaction is becoming a vital component of both the patient-physician relationship and the assessment of healthcare organizations. We sought to better understand patient expectations and determinants of satisfaction in an outpatient Urology clinic setting at an academic medical center.

Methods: Patients presenting to the Urology Clinic at the University of Florida were asked to complete an anonymous survey regarding expectations of their clinic visit. Inclusion criteria were ages 18-89 years, ability to provide informed consent and ability to speak and understand English. Data from completed surveys was then collected and analyzed. The study was deemed IRB exempt.

Results: A total of 500 patients agreed to participate in the study. Table 1 demonstrates demographic information. Most patients expected to be seen within 3-7 days of referral and expected to spend at least 16-30 minutes with their provider. Return patients were more likely to be greater than 60 years old (80% vs 20%, p = 0.0027) compared to new patients and were also more likely to expect less time, only 5-15 minutes, with their provider (41% vs 29%, p = 0.035) compared to new patients. Patients noted they would not be equally satisfied seeing a physician versus advanced practice provider on their initial visit but would on a return appointment. A majority of patients expected adjunctive services including record retrieval, medical paperwork, returning phone calls, or clinic parking to be free of charge. 52% of patients stated they would be dissatisfied with their overall clinic experience if their expectations were not met. However, even if their expectations were not met, most patients would still be satisfied with their provider.

Conclusion: Patient satisfaction is now an important point of evaluation for healthcare organizations. In our study, patients prioritized being seen soon after referral and being seen by a physician for their initial visit. They also felt that most additional services by the physician or clinic should be free of charge. This data will help highlight patient preferences in order to enhance their clinic experience, strengthen the patient-physician relationship, and improve overall patient satisfaction metrics.

	Overall
Age, years (%)	
18-29	21 (4)
30-39	42 (8)
40-49	47 (9)
50-59	79 (16)
60-69	155 (31)
>70	156 (31)
Gender, n (%)	
Female	156 (31)
Male	344 (68.8)
Other	1 (0.2)
Race, n (%)	
White	387 (77.6)
African-American	72 (14.5)
Asian	9 (1.2)
Hispanic	29 (4.2)
Other	12 (2.4)
Level of Education, n (%)	
High school or less	176 (36.2)
College	183 (39.1)
Graduate school/professional school	122 (24.7)
Annual Household Income (Dollars), n (%)	
0-\$9,999	58 (12.0)
\$10,000-\$39,999	132 (28.8)
\$40,000-\$59,999	161 (35.1)
\$100,000-\$249,999	88 (21.3)
Greater than \$250,000	16 (2.2)
Visit Type, n (%)	
New	128 (25.2)
Return	374 (74.8)

Podium #5

COMPARISON OF UROLOGICAL PATIENTS TRANSFERRED TO THREE DIFFERENT TERTIARY CARE CENTERS OVER A 2 YEAR PERIOD

Marilyn Hopkins, MD¹, Ian Berger, BS², Justin Ziemba, MD², Utsav Bansal, MD³, Adithya Balasubramanian, MD³, Jessie Chen, MD³, Wesley Mayer, MD³, Andrew James, MD¹, Andrew Harris, MD¹

¹University of Kentucky, ²University of Pennsylvania, ³Baylor College of Medicine

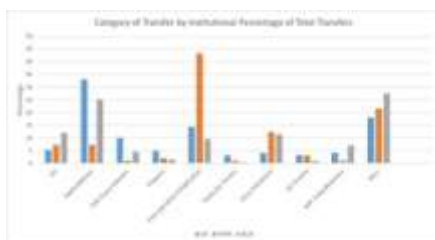
Presented By: Marilyn K. Hopkins, MD

Introduction: Urological care is not universally available, particularly in rural areas. The inter-hospital transfer of patients represents one way to treat these patients, but to date its use is largely unknown. Therefore, we performed a comparison concerning processes of care between patients transferred to a primary urology service among 3 different tertiary care centers.

Methods: The University of Kentucky (UK), Hospital of the University of Pennsylvania (PENN), and Baylor College of Medicine (BCM) were included. A cross-sectional retrospective review of patients transferred to these institutions over a 2 year was performed. Cases with a urology attending as the accepting physician underwent chart review to confirm the urological diagnosis necessitating the transfer. We categorized each transfer into 10 mutually exclusive categories based on the primary diagnosis. We retrospectively reviewed the charts for surgical intervention.

Results: We identified 509 transfers to UK, 97 to PENN, and 200 to BCM. 168 (33% of UK Total), 7 (7.2% of PENN total), and 50 (25% of BCM total) transfers to UK, PENN, and BCM respectively were for nephrolithiasis. 27 (5.3%), 7 (7.2%), 24 (12%) transfers were for UTI. 51 (10%), 1 (1%), 9 (5%) transfers for soft tissue infection. 73 (14%), 42 (43%), 19 (10%) transfers were for post-operative complications. For the remainder of diagnoses, see Figure 1. 37% of UK, 39% of PENN, and 52% of BCM patients underwent surgical intervention. Of note, The miscellaneous category was comprised of urinary tract tumors, unspecified obstruction, abdominal pain, paraphimosis, and atraumatic renal hematomas.

Conclusion: Here we provide a description of patients transferred over a two-year period to three different tertiary care centers. Interestingly, the minority of patients required surgery and the majority of cases could possibly be handled by an available community urologist, collaborative care networks, spoke and hub models, and/or telemedicine. The potential for value improvement in this arena is significant.



Podium #6

BURDEN OF UROLOGIC DISEASE AND EFFICACY OF SHORT-TERM SURGICAL MISSIONS IN RURAL HAITI

Adam Lorentz¹, Steven Gerhard¹, Lee Hugar², Justine Broecker³, Jyotimay Sharma³, Jahnavi Srinivasan³, Cinnamon Sullivan⁴, Viraj Master¹, John Pattaras¹, Jeff Carney¹

¹Department of Urology, Emory University, Atlanta, GA, ²Department of Urology, University of Pittsburgh Medical Center, Pittsburgh, PA, ³Department of Surgery, Emory University, Atlanta, GA,

⁴Department of Anesthesiology, Emory University, Atlanta, GA

Presented By: Charles Adam Lorentz, MD

Introduction: Urological burden of disease in the world's poorest countries remains essentially unreported. Meanwhile, billions of patients lack access to care. Generating funding and collective motivation to enact change requires basic data and understanding of need. The Emory Haiti Alliance has accumulated 11 years of surgical experience in the rural central

plateau of Haiti. Of a broad range of care delivered, we focus here on open prostatectomy patients to 1) demonstrate burden of disease and 2) document viability of short-term surgical missions to deliver safe and ethical treatment.

Methods: We report a retrospective case review of simple prostatectomies performed on annual short-term trips from 2008-2018. Approximately 150 patients were evaluated annually at one of two rural Haitian hospitals with very limited resources. Those with severe urinary obstructive symptoms and large, anodular prostate glands were considered for open prostatectomy under spinal anesthesia. Preference was given to men requiring indwelling urethral catheters. Technique included both transvesical and retropubic approaches. Trips evolved with time to include a short-term follow-up component to improve and accurately document clinical outcomes.

Results: From 2008-18, 70 prostatectomies were completed. Patients were a median of 64 years old (range 49-84). They traveled a median of 90 minutes to seek care, up to over 4 hours. The median length of postoperative hospital stay was 4 days. Of those with fully abstracted outcome data (n=31), 7 complications (23%) included the following, by Clavien severity score: three grade 1, three grade 2 (transfusion of 1 unit packed red blood cells, deep venous thrombosis, and pneumonia), and one grade 4 (anaphylactic drug reaction which resolved without long-term effects). For those with available data, 17/18 patients passed voiding trials. Of 9 patients contacted for long-term follow-up (median 12 months post-operatively, range 12-48 months), all were catheter-free.

Conclusion: The plight of the world's unserved urological patients remains underreported and thus under-recognized. Documentation in the literature is a necessary step toward addressing severe disparities. We observe a significant burden of disease and demonstrate a replicable model for delivering quality care on a small scale. Similar reports worldwide are necessary to expand awareness and motivation to address the problem on a larger scale.

Podium #7

CRITICAL EXAMINATION OF INDICATIONS FOR URINALYSIS IN THE UNITED STATES

Peter Kolettis, MD¹, Kyle Gennaro, MD¹, Gerald McGwin, Jr., MS, PhD²

¹Department of Urology, ²Department of Epidemiology

Presented By: Kyle Harrison Gennaro, MD

Introduction: The prevalence of asymptomatic microhematuria (AMH) is 2.4 to 31.1%. The overall urinary tract malignancy rate is 2.6% in those with AMH. AUA guidelines recommend a CT urogram and cystoscopy to evaluate AMH. Screening urinalysis (UA) is not recommended but is commonly performed in the United States, potentially leading to diagnosis and evaluation of AMH for a large number of patients. The purpose of this study was to critically evaluate indications for UA in the United States.

Methods: This study was granted an exemption by our IRB. Data from the 2015 National Ambulatory Medical Care Survey (NAMCS) were queried to obtain estimates for frequency of UA testing and associated diagnoses. The NAMCS is a probability sample of office-based medical care in the United States and includes laboratory testing and diagnoses. We considered an ICD-9 code for genitourinary disease, diabetes, hypertension, hyperparathyroidism, renal artery disease, substance abuse, or pregnancy to be an appropriate indication for UA.

Results: Of the 990 million office-based patient encounters in 2015, 10% (99 million) included a UA. The most common ICD-9 diagnosis codes associated with these encounters were 401 (essential hypertension), 250 (diabetes), 272 (disorders of lipid metabolism), 788 (symptoms involving urinary system) and V70 (routine general medical exam). Among UA encounters, 58.5% had a ICD-9 code for genitourinary disease, diabetes, hypertension, hyperparathyroidism, renal artery disease, substance abuse, and pregnancy; this is compared to 24.8% among those without a UA ($p < 0.0001$).

Conclusion: This data suggests that UA screening is performed without an appropriate associated diagnosis in a significant percentage of cases. Given that AMH is common, this widespread UA testing likely leads to a large number of evaluations for AMH, with associated cost and invasive testing. Closer examination of the indications for UA testing is needed to reduce costs and morbidity.

Podium #8

ACCEPTABILITY, APPROPRIATENESS AND APPEAL OF IMPLEMENTING SUPPORT FOR GUIDELINE-BASED CANCER CARE IN RURAL AND MINORITY UROLOGY PRACTICES

Jessie Gills¹, Kelly Stratton², J. Brantley Thrasher³, Tomas L. Griebeling³, Charles McWilliams², Andrew Zganjar³, Muger Geana⁴, Christine Mackay⁵, Ariel Shifter⁶, Shellie D. Ellis⁶

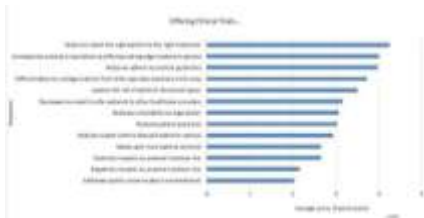
¹Department of Urology, Louisiana State University Health Sciences Center, ²Stephenson Cancer Center, University of Oklahoma, Oklahoma City, OK, ³Department of Urology, University of Kansas, Kansas City, KS, ⁴White School of Journalism and Mass Communications, University of Kansas, Lawrence, KS, ⁵Kansas University Cancer Center, University of Kansas, Kansas City, KS, ⁶Department of Health Policy and Management, University of Kansas, Kansas City, KS
Presented By: Jessie R. Gills, MD

Introduction: National guidelines recommend management of all cancer patients within a clinical trial when available. However, 20% of cancer in the US is urological and most often managed by community urologists who lack direct access to trials. These providers are more likely to treat rural and minority patients, potentially explaining lower rates of trial participation among these populations. We developed LEARN|INFORM|RECRUIT, a multi-modal intervention to support referral of rural urological cancer patients to clinical trials. The acceptability, appropriateness and appeal of the intervention to practices serving other underserved populations is unknown.

Methods: We presented LEARN|INFORM|RECRUIT to urologists attending state urological professional society meetings serving Oklahoma, Kansas, Missouri and Louisiana in Spring 2018. We surveyed attendees to assess the intervention's appropriateness and acceptability using four-item, validated scales: Acceptability of Intervention Measure and Intervention Appropriateness Measure. Participants assessed the intervention's appeal using a novel measure of Attributes of Innovation Adoption. All items were assessed on a Likert scale. Appropriateness and acceptability responses were summed to create scale scores, ranging from 1 to 5 with higher scores indicating greater acceptability and appropriateness. Scores were averaged and t-tests used to compare those who do/do not offer clinical trials. Innovation attribute scores were averaged and ranked.

Results: Across all sites, more than 50 urologists attended; 32 evaluated the intervention. Average acceptability and appropriateness ratings were 4.5 and 4.3, respectively. Scores did not differ between those who offering trials and those not ($p=0.29$, $p=0.72$). Top-rated attributes included 1) helping the urologist match the right patient to the right treatment; 2) increasing the practice's reputation as offering cutting edge treatment options; 3) helping the urologist adhere to practice guidelines; 4) making care more patient-centered; and 5) differentiating the urologists' practice from other specialty practices.

Conclusion: A multi-modal intervention to support urologists' referral to clinical trials is acceptable and appropriate to professionally engaged, community-practicing urologists in 3 predominately rural states in AUA's South Central Section and the state with the second largest African-American population, located in the Southeastern Section. Future dissemination can highlight the intervention's potential to differentiate participating practices and help urologists provide guideline-concordant, patient-centered care. Interventions to support guideline-based care appeal to practices serving underserved populations.



Podium #9

UNDERSTANDING THE CONTEMPORARY UROLOGIC WORKFORCE: ASSOCIATION BETWEEN UROLOGIST GENDER AND PRACTICE PATTERNS FOR MEDICARE BENEFICIARIES

Catherine Nam, BS, Frances Kim, MPH, P Filson, MD, MS

Dept of Urology, Emory University School of Medicine, Atlanta, GA

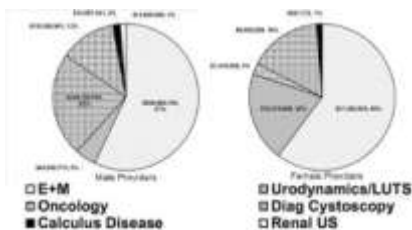
Presented By: Catherine Soorim Nam

Introduction: Though the proportion is increasing, female urologists make up less than 10% of the urologist workforce. Recent surveys suggest female patients prefer to see female urologists when available. We aimed to describe variation in urologic care patterns for Medicare beneficiaries, based on provider gender.

Methods: We used the Medicare Provider Payment database to evaluate all provider payments for urologists in 2016 who provided care for fee-for-services Medicare beneficiaries. We then assessed payments, services, and work relative value units (wRVU) based on provider gender. Urologists were linked to hospital markets based on ZIP code of primary practice address. We linked wRVU for each service using CMS crosswalk files. We categorized certain services as urodynamic-related (CPT 51725 – 51792), gynecologic operations (CPT 56000 – 58999), and female-specific lower urinary tract operations. We also identified the top 20 procedures based on total payments and provider gender. We use appropriate parametric and non-parametric testing to compare differences based on provider gender.

Results: Among 8,665 urologists receiving fee-for-service Medicare payments in 2016, 7,944 (91.7%) were male and 721 (8.3%) were female. Overall, 103/306 (33%) hospital markets did not have any female urologists, and another 79/306 (26%) had only one female urologist. Female urologists saw a lower proportion of cancer patients (16% vs 22% male urologists, $p<0.001$) but a greater proportion of female patients (53% vs 24% male urologists, $p<0.001$). Female urologists had a greater proportion of wRVU from urodynamics (2.1% vs 0.8% male, $p<0.001$) and gynecologic surgery (0.8% vs 0.1% male, $p<0.001$). Female providers received fewer payments per beneficiary (\$70.12 vs \$72.37 male, $p=0.03$) and fewer payments per wRVU \$58.25 vs \$60.04 male, $p<0.001$). For the top twenty services for total payments, evaluation and management services were the highest paying type of services (57% male, 60% female) (Figure). Oncology services were next highest-paying for male urologists (\$204M, 23%) whereas urodynamics-related services were the next highest paying category for female urologists (\$10M, 20%).

Conclusion: There are significant differences between practice and payment patterns between male and female urologists caring for Medicare fee-for-service beneficiaries. Understanding time trends and geographic variation in these findings will be important in the future.



Podium #10

ARE THERE GENDER DISPARITIES IN UROLOGIC SURGEONS WHO DO MINIMALLY INVASIVE SURGERY?

Jennifer Robles, MD¹, Ryan Terlecki, MD², Brant Inman, MD, MS³, Nicole Miller, MD¹

¹Vanderbilt University Medical Center, ²Wake Forest Baptist Health, ³Duke University Medical Center

Presented By: Jennifer Robles, MD

Introduction: Minimally invasive laparoscopic/robotic surgery (MIS) has transformed urology over the last two decades. Simultaneously, there has been a rapid rise of women in urology, but evidence shows women are less likely to specialize in MIS. We aim to characterize and evaluate temporal gender-based trends for MIS urologists relative to case volume and case mix.

Methods: We retrospectively reviewed American Board of Urology 6-month operative logs submitted for board certification/re-certification from 2005-2015. We excluded pediatric urologists and assessed MIS case volume and case mix stratified by gender, accounting for specialty, practice type, region, and year. Chi-squared analysis and t-tests were used for univariate analysis. These results were used to fit multivariable regression models.

Results: 6800 urologists submitted 7563 six-month operative logs. 8.7% of certifying urologists were women. There was no significant difference by gender in who logged any MIS case (p=0.5) but women logged 51% fewer mean cases than men (5.1 cases vs. 13.6) and this increased to 67% fewer cases in an adjusted model. Only 4.8% of surgeons who logged 1+ MIS case/month and just 2.2% of those who logged 1+ MIS case/week were women. This remained significant when accounting for specialty, practice type, region, and certification year (Table 1). Female MIS surgeons were significantly less likely to be oncologists (p=0.02) and more likely to have a full-time academic practice (p=0.002). Among surgeons who logged 1+ case/month, women performed 20% more renal cases and 29.5% fewer prostatectomies compared to men.

Conclusion: Women are significantly under-represented amongst surgeons who perform at least 1 MIS case/month, even when controlling for potential confounders. Oncology and endourology have the fewest female MIS surgeons. MIS case-mix varies by gender with women logging proportionally more renal and fewer prostate cases compared to men. These trends have improved over time, but overall numbers of female MIS surgeons remain low. Further investigation is warranted to determine factors involved in gender disparities related to the performance of MIS in urology.

Table 1: Gender Differences Amongst MIS Surgeons by Specialty and No. of Cases Logged

	N (n%)		p-value
	Total No.	Mean No.	
Any MIS logs	968 (9.5)	4235 (10.4)	0.5
≥1 Case/Month	118 (8.3)	1915 (10.3)	<0.0001
≥1 Case/Week	17 (2.2)	767 (10.7)	<0.0001
Specialty			
General	564 (58.5)	4134 (10.3)	Not
Andrology	5 (4.3)	33 (8.7)	0.2
Endourology	20 (4)	312 (9.4)	0.01
Female	925 (10.5)	188 (10.2)	<0.0001
Oncology	31 (4.8)	427 (10.2)	0.02
Urothelials	1 (5.6)	51 (9.4)	0.6
Academic Practice			
Non	113 (8.7)	1240 (10.2)	Not
Full-Time	84 (12)	917 (10)	0.002
Part-Time	24 (12)	176 (10)	0.117
Region			
Western	147 (14.2)	388 (10.8)	Not
Mid-Atlantic	44 (9.3)	422 (10.3)	0.07
New England	29 (11.5)	104 (10.3)	0.68
New York	21 (9.8)	282 (10.2)	<0.0001
North Central	71 (4.8)	710 (10.2)	0.001
Northwestern	15 (8.3)	144 (10.7)	0.2
South Central	72 (4.8)	622 (10.4)	0.1
Southwestern	71 (4.8)	915 (10.2)	<0.0001
Total			<0.0001

Podium #11

CORRELATION OF RELATIVE VALUE UNITS WITH SURGICAL COMPLEXITY AND PHYSICIAN WORKLOAD IN UROLOGY

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Presented By: Case Wood, MD

Introduction: Work relative value units (RVUs) represent a metric of physician productivity, but the correlation between procedure RVUs with surgical complexity remains poorly understood. Our primary objective was to define the correlation of RVUs with measures of surgical complexity and physician workload in the field of urology. We hypothesized that RVUs would correlate poorly with these measures. Our secondary objectives were to 1) identify procedures with outlying RVU values for their measures of surgical complexity and workload and 2) calculate projected RVU values for these procedures.

Methods: We retrospectively reviewed the 2012-2016 American College of Surgeons National Surgical Quality Improvement Program (NSQIP) databases, from which we selected 56 current procedural terminology (CPT) codes representing the spectrum of urologic surgery. Linear regression was used to correlate RVUs with length of hospital stay (LOS), operating room (OR) time, morbidity, mortality, serious adverse events (SAEs), and readmissions. Variables with $R^2 > 0.7$ were incorporated into a multivariable model. Studentized residuals were used to identify outlying procedures. For outlying procedures, projected RVU values were estimated based on the regression model.

Results: We identified 190,323 urologic cases over a five-year period for the 56 selected procedures. RVUs correlated well with LOS ($R^2 = 0.80$), OR time ($R^2 = 0.87$), and morbidity ($R^2 = 0.74$). RVUs only moderately correlated with SAEs ($R^2 = 0.64$), mortality ($R^2 = 0.52$), and readmissions ($R^2 = 0.57$). Outlying procedures identified by the multivariable model were retroperitoneal lymph node dissection (projected +10.64 RVUs), laparoscopic partial nephrectomy (projected -6.83 RVUs), laparoscopic ureteroneocystostomy (projected -6.78 RVUs), and cystectomy with bilateral pelvic lymphadenectomy (projected +6.54 RVUs).

Conclusion: In urology, certain measures of surgical complexity and physician workload appear to correlate with RVUs more than others. Incorporating objective data may improve RVU assignments for individual CPT codes in the future.

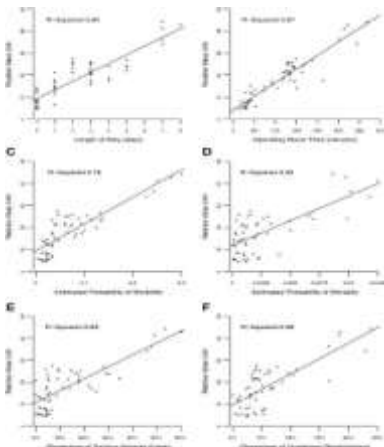


Figure 1. Correlation between relative value units and LOS, OR time, morbidity, mortality, SAEs, and readmissions. Each plot shows the correlation of RVUs with a specific metric. The regression line and R-squared value are shown for each plot. The y-axis represents Relative Value Units and the x-axis represents the metric.

Podium #12

APPLICATION OF AUA RISK STRATIFICATION FOR NON-MUSCLE INVASIVE BLADDER CANCER: LONG-TERM RESULTS IN A CONTEMPORARY SINGLE INSTITUTION COHORT

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¹University of Miami Miller School of Medicine, Urology Department, Miami, FL., ²University of Miami Miller School of Medicine, Sylvester Comprehensive Cancer Center, Miami, FL., ³University of Miami Miller School of Medicine, Urology Department, Miami, FL., ⁴University of Miami Miller School of Medicine, Urology Department, Miami, FL., ⁵University of Miami Miller School of Medicine, Urology Department, Miami, FL.

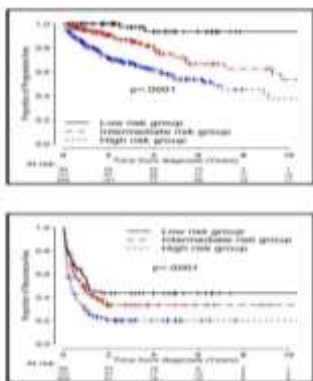
Presented By: Maria Camila Velasquez Escobar

Introduction: Recent AUA guidelines for management of NMIBC recommend risk stratification at time of diagnosis. We apply the current AUA risk stratification system to a contemporary group of patients with NMIBC with long-term follow up. Recurrence and progression in this cohort were analyzed.

Methods: We conducted a retrospective review of 400 patients with NMIBC treated at the University of Miami during the last 10 years (2007-2017). Descriptive statistics were used to compare groups by risk strata. Multivariable regression was performed to determine predictors of recurrence and progression. Kaplan Meier survival analysis was performed to determine progression-free and recurrence-free survival by AUA risk group.

Results: In a contemporary cohort, the AUA NMIBC risk grouping accurately stratifies patients at low, intermediate and high risk for progression and recurrence. 3-year progression free survival for low, intermediate and high risk patients is 97.1%, 85.2% and 67.6%. 3-year recurrence free survival for low, intermediate and high risk patients is 43.3%, 33.3% and 20.1%. Significant predictors of recurrence are: Positive cytology and high risk tumors, while significant predictors for progression are: Age (≥ 70 years) and high risk tumors.

Conclusion: In a contemporary cohort, with long-term follow up, the AUA NMIBC risk groups appropriately stratifies patients based on likelihood of recurrence and progression. AUA high risk grouping is a significant predictor for progression and recurrence.



Podium #13

FIRST IMPRESSIONS: COMPARING BLADDER TUMOR APPEARANCE TO FINAL PATHOLOGY

Elizabeth Tourville¹, Matthew Strain^{1,2}, Christian Dewan¹, Howard Hasen¹, Christopher Ledbetter¹, Anthony Patterson¹, Robert Wake¹

¹University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN, ²West Jefferson Urology Specialists, Marrero, LA

Presented By: Elizabeth Tourville, MD

Introduction: American Urological Association (AUA) guidelines state that in a patient with suspected low- or intermediate-risk bladder cancer, a clinician should consider administration of a single postoperative instillation of intravesical chemotherapy within 24 hours of transurethral resection of bladder tumor (TURBT). Since pathology reports typically take a few days to result, this decision is based on the gross appearance of tumors. We sought to evaluate how accurately we can predict final bladder tumor pathology based on gross appearance and whether accuracy improved with more operative experience.

Methods: We retrospectively reviewed the records of patients who underwent TURBT at a single hospital over a 5-year period. Operative reports and the corresponding pathology reports were evaluated. Tumors that were described as "low profile," "superficial," "low grade," and "benign" by residents were categorized as Low Risk. Tumors that were described as "aggressive," "high grade," "angry," and "advanced" were categorized as High Risk. Restaging TURBTs, operative reports dictated by attending surgeons, and operative reports without description of the tumor appearance were excluded. The final review included 102 cases.

Results: Benign lesions and low grade Ta tumors were accurately predicted to be Low Risk in 90.5% (19/21) and 88.5% (23/26) of cases, respectively. High Grade Ta tumors, classified as either intermediate or high risk by AUA guidelines, were felt to be High Risk based on gross appearance in 30% of cases (4/13). Tumors with T1 pathology were thought to be High Risk in 62.5% of cases (15/24). T2 tumors were accurately predicted to be High Risk in 93.3% of cases (14/15). Two of three cases of CIS were correctly predicted to be CIS. PGY3 residents correctly predicted the tumor risk based on gross appearance 72.8% of the time, followed by 82.6% for PGY4 residents, and 87.5% for PGY5 residents.

Conclusion: Benign lesions, low grade Ta tumors, and T2 tumors were accurately risk stratified based on gross appearance in nearly all cases. High grade Ta Lesions and T1 lesions proved to be more difficult to risk stratify based on gross appearance. There was a linear progression in the accuracy of predicting the final pathology based on gross appearance with each additional year of training.

Podium #14

BLUE LIGHT CYSTOSCOPY IMPROVES DETECTION RATES FOR UROTHELIAL BLADDER CANCER COMPARED TO WHITE LIGHT CYSTOSCOPY: UPDATED RESULTS FROM A PROSPECTIVE MULTICENTER REGISTRY

Shane Pearce, MD¹, Zhoobin Bateni, MD², Soroush Bazargani, MD², Trinity Bivalacqua, MD, PhD³, Kamal Pohar, MD⁴, Badrinath Konety, MD, MBA⁵, John Fitzgerald, MD, MSCI⁶, T. Brian Willard, MD^{7,8}, Jennifer Taylor, MD, MPH⁹, Joseph Liao, MD¹⁰, Jeff Holzbeierlein, MD FACS¹¹, John Taylor III, MD¹¹, James Tierney, DO¹², Maxwell Meng, MD¹³, Sima Porten, MD, MPH¹³, Kristen Greene, MD, MS¹³, Hooman Djaladat, MD, MS², Anne Schuckman, MD², Sia Daneshmand, MD²

¹University of Southern California, ²University of Southern California, ³Johns Hopkins School of Medicine, James Bruchanan Brady Urological Institute, ⁴The Ohio State University Wexner Medical Center, ⁵University of Minnesota, ⁶Stony Brook University Hospital, ⁷Carolina Urology Partners, ⁸Lexington Medical Center, ⁹Baylor College of Medicine, ¹⁰Stanford University, ¹¹The University of Kansas Medical Center, ¹²Charleston Area Medical Center, ¹³University of California San Francisco
Presented By: Thomas Brian Willard, MD

Introduction: Blue light cystoscopy (BLC) with hexaminolevulinate (Cysview) when utilized in transurethral resection of bladder tumors (TURBT), increases detection and reduces recurrence rates of non-muscle invasive bladder cancer (NMIBC). We report updated results from an ongoing prospective multicenter registry.

Methods: From April 2014 to October 2017, patients from 9 different centers undergoing TURBT for NMIBC were enrolled in a prospective registry. All lesions were assessed using BLC and white light cystoscopy (WLC). Flat lesions were defined as lesions with a flat

appearance or appearance consistent with carcinoma-in-situ. Sensitivity and specificity of cystoscopic assessment was determined by comparison to the gold-standard pathologic diagnosis of the individual lesions.

Results: A total of 749 patients underwent 933 TURBT and 2,268 separate lesions were identified and resected. Mean age was 73 years and 83% were male. For detection of any malignancy, the sensitivity of BLC (91%) was higher than WLC (79%, $p<0.001$) and the combination had a sensitivity of 99%. The improved detection rate of any malignancy was notable for flat lesions (BLC 91% vs. WLC 64%, $p<0.001$). The sensitivity of BLC was also higher for patients with previous BCG treatment ($p<0.001$). BLC outperformed WLC for all TURBT indications including abnormal cytology. BLC had higher sensitivity compared to WLC for all topographic regions of the bladder; however, the positive predictive value (PPV) of BLC was reduced to 58% for lesions in the prostatic urethra, bladder neck, or trigone compared to 66% PPV for lesions on the anterior, posterior, lateral wall or dome. The number needed to screen with BLC for the diagnosis of an additional malignant lesion was 5. 307 patients had lesions only visible on BLC and 29 of these patients underwent radical cystectomy including 4 patients with tumors identified solely on BLC.

Conclusion: BLC improves detection rates for NMIBC, particularly for flat appearing lesions. The number needed to screen for the diagnosis of an additional malignant lesion was 5. Improved detection rates for BLC are maintained for all TURBT indications and all topographic locations within the bladder.

	Blue Light			White Light			p-value
	Sensitivity	NPV	PPV	Sensitivity	NPV	PPV	
Overall	91%	88%	53%	79%	88%	53%	<0.001
Flat	91%	88%	43%	64%	88%	52%	<0.001
Protruding NLS	88%	88%	73%	72%	88%	58%	<0.001
Abnormal Office Cystoscopy	92%	88%	67%	81%	88%	58%	<0.001
Abnormal Cytology	88%	88%	53%	76%	88%	52%	<0.001
Abnormal Imaging	88%	88%	68%	88%	70%	68%	0.04
Planned Re-imaging	88%	88%	79%	72%	88%	58%	<0.001
Anterior/Posterior/Lateral /Dome	88%	88%	74%	78%	88%	57%	<0.001
Bladder neck/Trigone/Prostatic urethra/Urethra/Meatus	91%	88%	63%	88%	88%	66%	<0.001

Podium #15 – WITHDRAWN

**Podium #16
EVALUATION OF FALSE POSITIVE REFLEX UROVYSION TESTING DURING SURVEILLANCE OF UROTHELIAL CARCINOMA**

Andrew Rabley, Kevin Campbell, Jennifer Kuo, Padraic O'Malley, Paul Crispen
University of Florida
Presented By: Andrew Rabley, MD

Introduction: Equivocal urine cytology results at the time of negative cystoscopy performed for surveillance of urothelial carcinoma can lead to unnecessary bladder biopsies and imaging studies. Reflex Urovysion testing performed for atypical and suspicious urine cytology results may improve selection of patients who warrant additional testing. However, false positive results are a possible limitation of reflex Urovysion testing. Here we review the outcomes of patients undergoing reflex Urovysion testing for atypical or suspicious urine cytology at the time of normal cystoscopic findings and evaluate potential associations with false positive Urovysion results.

Methods: Office cystoscopy, urine cytology and Urovysion results performed for the surveillance of urothelial carcinoma were reviewed between November 2016 to August 2018. Clinical and pathologic features of patients with false positive and true positive Urovysion results were compared.

Results: 600 consecutive surveillance cystoscopies were reviewed during the study period. 73 patients had a normal cystoscopy and an atypical (71%, 52/73) or suspicious (29%, 21/73) urine cytology. Reflex urine testing on these patients was normal in 81% (59/73) and positive in 19% (14/73). All patients with a positive Urovysion test went onto cystoscopy with bladder biopsies. 50% (7/14) patients were noted to have benign pathology and 50% (7/14) had recurrent urothelial carcinoma. No difference in age, gender, stage at diagnosis, disease free interval, or prior therapy were noted. When comparing the false positive and true positive Urovysion test results, the percentage of abnormal cells were significantly lower in false positive group (15%) compared to the true positive cohort (44%), $p = 0.018$.

Conclusion: False positive Urovysion results noted during the surveillance of urothelial carcinoma are associated with a significantly lower percentage of abnormal cells compared to true positive tests. If these results are validated, consideration of changing criteria based upon on number of abnormal cells for a positive Urovysion test may be warranted.

Podium #17
TRENDS IN UTILIZATION OF NEOADJUVANT CHEMOTHERAPY FOR BLADDER CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE

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¹University of Louisville Department of Urology, ²University of Louisville Department of Cardiovascular and Thoracic Surgery

Presented By: Thomas Michael FitzGibbon, Jr., MD, MS

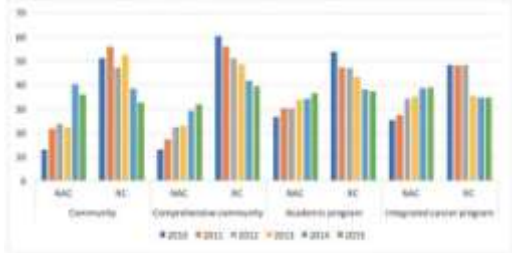
Introduction: Neoadjuvant chemotherapy (NAC) prior to radical cystectomy (RC) has been shown to improve survival in patients with localized muscle invasive bladder cancer (MIBC). Institutional and patient-specific factors determine the use of NAC for patients with MIBC. This study aims to evaluate trends in utilization of NAC based on type of treatment center over time and patient factors that determine its use.

Method: Using the National Cancer Database, we identified patients undergoing RC for clinically localized MIBC between years 2010 and 2015 and classified them in 2 groups: RC with NAC or RC alone. The types of treatment centers were community, comprehensive community, academic, and integrated cancer program. Kruskal-Wallis and chi-squared tests were used to evaluate differences between the treatment groups. Kaplan-Meier curves and multivariable Cox regression analysis were generated to compare overall survival based on type of therapy received.

Results: We identified 8,109 patients with localized MIBC undergoing treatment. Utilization of NAC significantly increased over the study period (19% in 2010 to 36% in 2015, $p<0.001$) (Figure 1). Use of NAC was more common in academic and integrated cancer centers (32%, 33%) compared to community and comprehensive community centers (25%, 26%) ($p<0.0001$). Patients receiving NAC were younger ($p<0.0001$), had better socio-economic profile (private insurance, higher income, better education) ($p<0.0001$), and had advanced clinical stage ($p<0.0001$). Patients receiving NAC had better 3-year overall survival compared to those receiving RC alone (63% vs. 53%, $p<0.0001$). On multivariable analysis, NAC use was associated with improved overall survival compared to RC alone (HR= 0.829, $p=0.0006$).

Conclusion: The overall utilization of NAC increased from 2010 to 2015, though its use remains low. Patients were more likely to receive NAC if they were younger, had better socio-economic profiles, and were treated at higher volume centers. Finally, NAC use was associated with improved overall survival compared to RC alone.

Figure 1: Trends of utilization of NAC by facility type per year



Podium #18
THE ASSOCIATION BETWEEN PATIENT BMI AND PERIOPERATIVE OUTCOMES FOLLOWING RADICAL CYSTECTOMY: AN ANALYSIS USING THE AMERICAN COLLEGE OF SURGEONS NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

Benjamin Harper¹, Matthew Lenardis², Raj Satkunasivam³, Martha Terris¹, Christopher Wallis², Zachary Klaassen²

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Presented By: Benjamin Thomas Harper, MD

Introduction: While radical cystectomy is currently the gold standard treatment of muscle-invasive bladder cancer, it is a morbid procedure with 30-day peri-operative complication rates approaching 50%. Our objective was to determine the effect of body mass index (BMI) on peri-operative outcomes following radical cystectomy (RC).

Methods: We identified 3,930 patients who underwent RC for non-metastatic bladder cancer using the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database. Patients with missing data on relevant covariates or with disseminated disease were excluded. The primary exposure was pre-operative BMI, categorized in four strata according to the World Health Organization criteria: 30 kg/m². Our primary outcome was major peri-operative complications: mortality, reoperation, cardiac event, or neurological event. Secondary outcomes included pulmonary and infectious complications, venous thromboembolism (VTE), bleeding requiring transfusion, and prolonged length of stay (LOS; >7 days).

Results: BMI was significantly associated with patient age, gender, comorbidity (as assessed using ASA score), history of diabetes, COPD, active smoking, functional status and urinary diversion type (p-values 30 kg/m² (p=0.003, p-value of trend =0.06). Following multivariable adjustment for relevant demographics, comorbidities and treatment, compared to patients with BMI 18.5-25 kg/m², patients with BMI 30 kg/m² (or 1.59 (95% CI 1.17-2.16) were significantly more likely to experience a major complication within 30-days following RC. Among the secondary outcomes, significant differences were identified in rates of pulmonary complications (p=0.003), infectious complications (p<0.001), bleeding requiring transfusion (p=0.01), and prolonged LOS (p=0.001). There was no difference in VTE (p=0.37).

Conclusion: Patients undergoing RC who are outside of a normal BMI range (18.5-25 kg/m²) are more likely to experience major complications, pulmonary complications, infection, bleeding requiring transfusion, and prolonged LOS. While this database has rich patient and comorbidity data, the strength of these conclusions is limited by sample size, selection bias inherent in observational data, and lack of specific oncological detail.

Multivariate logistic regression models, results presented as Odds ratio (95% CI)				
	BMI Cat 1	BMI Cat 2	BMI Cat 3	BMI Cat 4
Major complication	2.28 (1.07-4.78)	Referent	1.09 (0.80-1.47)	1.89 (1.17-3.18)
Pulmonary complication	2.63 (0.83-8.07)	Referent	1.32 (0.81-2.16)	2.20 (1.36-3.56)
Infectious complication	2.27 (1.11-5.91)	Referent	1.16 (0.69-1.92)	1.82 (1.24-2.69)
Venous thromboembolism	0.92 (0.21-3.94)	Referent	1.20 (0.81-1.78)	1.49 (1.08-2.23)
Bleeding requiring transfusion	1.54 (0.89-2.66)	Referent	0.85 (0.72-1.01)	0.83 (0.79-0.99)
Prolonged length of stay	2.99 (1.62-5.52)	Referent	1.02 (0.86-1.20)	1.18 (0.99-1.41)
Note: all models adjusted for effect of patient gender, age, ASA class, history of oncologic disease, history of cardiac disease, history of COPD, active diabetes requirement, active smoking, diabetes, chronic steroid use, preoperative chemotherapy use, functional status, and urinary diversion type.				

Podium #19

PRE-OPERATIVE NARCOTIC USE IS ASSOCIATED WITH INCREASING LENGTH OF STAY AND POST-OPERATIVE COMPLICATIONS IN PATIENTS UNDERGOING RADICAL CYSTECTOMY

Elizabeth Green, Petria Thompson, Kristen Scarpato, Kirk Keegan, Sam Chang, David Penson, Daniel Barocas, Matthew Resnick
Vanderbilt University Medical Center
Presented By: Elizabeth Green, MD

Introduction: Narcotic use is a growing public health concern and poses significant challenges in the perioperative period. The aim of this study was to characterize the relationship between pre-operative narcotic use and post-operative outcomes in patients undergoing radical cystectomy.

Methods: We performed a retrospective cohort study comprising all patients residing in Tennessee or contiguous states who underwent radical cystectomy at a single institution from January 2013 to August. Controlled substances data were obtained from the Tennessee Controlled Substances Medication Database from 1 year prior to surgery through 1 year after surgery and linked to clinical and demographic data abstracted from the medical record. We identified clinical, demographic, and prescription data that were associated with post-operative outcomes using bivariate non-parametric statistical testing and multivariate generalized linear model, poisson regression and logistic regression when appropriate.

Results: 267 patients underwent radical cystectomy, 134 of whom were prescribed narcotics in the year prior to cystectomy. There was a statistically significant association between the number of in-hospital complications and the pre-operative morphine equivalent dose (MED) on bivariate poisson regression (RR 1.021, $P=0.024$) but not on multivariate analysis (RR 1.01, 95%CI 1.00-1.03, $P=0.0795$). Additionally, there was a statistically significant association between the total number of complications within 90 days of discharge and the pre-operative MED for 1 year prior to surgery on bivariate poisson regression (RR 1.021, 95% CI 1.002-1.04, $P=0.027$) and on multivariate regression (RR 1.02, 95% CI 1.00-1.04, $P=0.029$). Among patients that filled a narcotic prescription prior to cystectomy, MED in the year prior to surgery was an independent predictor of length of stay (OR 1.08, 95%CI 1.01-1.16, $P=0.019$). There was no association between MED for the year prior to surgery and Emergency Department visits ($p=0.41$) or readmissions ($p=0.88$).

Conclusion: For patients undergoing radical cystectomy at a quaternary care referral center, pre-operative morphine equivalent dose was an independent predictor of complications and was an independent predictor of length of stay in those patients who had filled a narcotic prescription in the year before surgery.

Podium #20

CHARACTERIZATION OF POST-OPERATIVE INPATIENT NARCOTIC CONSUMPTION FOR CYSTECTOMY PATIENTS IN A DEDICATED ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM

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Presented By: William Blair Townsend, MD

Introduction: On October 26, 2017, the White House declared the opioid crisis a national "Public Health Emergency." Additionally, excessive narcotic use in the acute postoperative setting can lead to many complications in recovery. In our dedicated ERAS program, we have developed a standardized, postoperative multimodal pain medication protocol to limit unnecessary narcotic consumption. We quantify narcotic use in our ERAS patients and seek to characterize the effects of limiting its use on pain scores, need for outpatient narcotics and clinical outcomes.

Methods: From 1/1/2015-12/30/2016, 86 consecutive patients underwent cystectomy before implementation of the ERAS protocol ("pre-cohort"). From 1/1/2017-7/31/2018, 91 ERAS patients ("post-cohort") received a structured multimodal pain regimen that included an intra-operative lidocaine drip and post-operative scheduled toradol, gabapentin and Tylenol. Patient-

controlled analgesia was utilized until POD 1 as well as PRN intravenous and oral narcotics. All intravenous and oral narcotics were converted to an IV morphine equivalent daily dose (MEDD, mg). Opioid and non-opioid drugs usage, as well as clinical outcomes, were compared between the two cohorts. Fisher's exact tests were used for categorical outcomes and median two sample tests were used for continuous outcomes.

Results: Trends in POD 1-3 median pain scores in the pre- and post-cohorts, respectively, favored post-cohort patients (4.6 v. 4.3, p=.498; 4.9 v. 4.0, p=.331; 4.5 v. 4.0, p=.203), though these were not significantly different. Post cohort patients had a shorter median time (nights) to pain control exclusively with oral analgesics (4 v 3, p< .006). Total median narcotic consumption (MEDD, mg) on POD 1-3 for pre- and post-cohorts, respectively, was lower in post-cohort patients (31.5 v. 12.3, p=.007; 22.0 v. 5.0, p<.001; 12.6 v. 5.0, p<.001). Total median narcotics (# pills) dispensed within 30 days of discharge was 50 and 40 for the pre- and post-cohort, respectively (p< .025).

Conclusion: Our multimodal pain regimen for ERAS patients works to address unnecessary narcotic use in the immediate post-operative setting by decreasing inpatient and outpatient narcotic consumption with no significant decrement in pain control. Future work will focus on the continued minimization of narcotic consumption and maximization of favorable clinical outcomes in a larger patient cohort.

	Pre-Cohort n = 88		Post-Cohort n = 85		p-value
Demographics					
Median (Range)	48.5	48.1-51	51	41-58	
Age					
Median (Range)	22.7	18.1-36.3	28.7	18.1-56.1	<.001
Gender, n (%)					
Male:female	74	84.3	100	117.6	
White:Black:Hispanic:Other	5	5.7	4	4.7	
Insurance	1	1.1	5	5.9	
Medicaid:Medicare:Private:Other	1	1.1	5	5.9	
Time to Pain Control (h)	10	2.1-19	10	2.1-19	
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Post-Operative Outcomes					
Median (Range)	10	2.1-19	10	2.1-19	
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Discharge Data (Median, Range of PODs)					
Median (Range)	10	2.1-19	10	2.1-19	
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Postoperative Outcomes					
Median (Range)	10	2.1-19	10	2.1-19	
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001
Time to Pain Control (h)	4	1.0-10	5	1.1-11	<.001

Podium #21
PROSPENSITY-MATCHED ANALYSIS OF STAGE-SPECIFIC EFFICACY OF ADJUVANT CHEMOTHERAPY FOR BLADDER CANCER FOLLOWING RADICAL CYSTECTOMY
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Presented By: Felix Victor Chen, BS

Introduction: In the past decade, there have been major advancements in the use of perioperative chemotherapy for bladder cancer. While neoadjuvant chemotherapy has garnered the support of several phase III trials, contemporary randomized controlled trials exploring adjuvant chemotherapy (AC) have yielded inconsistent results due to premature termination and/or poor patient accrual. To address this evidence void, we compared the efficacy of AC versus observation after radical cystectomy by disease stage from a nationally representative sample of patients with bladder cancer in the United States.

Methods: We included adult patients (≥18 years) who underwent radical cystectomy for any pT, NO-1, M0 bladder cancer from 2004 to 2014 from the National Cancer Data Base (NCDB). Patients diagnosed at death or autopsy, died within 30 days of cystectomy, or receipt of single-agent chemotherapy, or any radiation were excluded. Patients who underwent AC were propensity matched (1:1) with patients within the observation-only cohort (OC) based on selected sociodemographic and clinical characteristics. Overall survival, which is defined as the number of months from cancer diagnosis to death or last follow-up, was modeled with a multivariable Cox proportional hazards regression model. Adjusted hazard ratios (aHR) and 95% confidence intervals (95%CI) were calculated. Data management and statistical analysis were performed in SAS v9.4.

Results: After propensity matching, 3,066 patients (AC 1,533; OC 1,533) were included in the analysis. There were no differences in patient-, facility-, or tumor-level characteristics between groups. Compared with patients in OC, recipients of AC had significantly improved overall survival (aHR 0.67; 95%CI 0.61-0.74). All pathologic T stages with pN1 disease significantly benefited from adjuvant chemotherapy. Among the pN0 cohort, improved survival from AC was seen in only stages pT3 (0.67; 0.55-0.83) and pT4 (0.70; 0.50-0.98).

Conclusion: In this retrospective population-based cancer registry study, AC was associated with improved survival in locally advanced (pT3-4, pN0) and regionally advanced (pT2-4, pN1) bladder cancer. Our findings suggest that AC is best suited for patients within these stage-specific groups following radical cystectomy and support the recommendations made by the National Comprehensive Cancer Network for bladder cancer.



Podium #22

ASSESSMENT OF FINANCIAL TOXICITY IN BLADDER CANCER PATIENTS USING A VALIDATED QUESTIONNAIRE

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Presented By: Mark Ehlers, MD

Introduction: Despite bladder cancer being the sixth most common cancer in the US, it is the most expensive to manage. Financial Toxicity (FT) is an adverse effect of treatment and surveillance of disease. In patients with bladder cancer, prior studies demonstrated higher FT in younger, black, less educated, and non-muscle-invasive disease patients. The purpose of this study was to assess FT among bladder cancer patients using a validated FT questionnaire.

Methods: Patients with bladder cancer were identified from the Bladder Cancer Advocacy Network (BCAN) Patient Survey Network (PSN) and administered a survey which included the COST-FACIT (Comprehensive Score for financial Toxicity – Functional Assessment of Chronic Illness Therapy). Lower COST values indicate more financial toxicity. Linear regression modeling was performed with SAS v9.4 to assess financial toxicity.

Results: A total of 231 patients completed the survey. The mean age was 66.3 years. 95% were Caucasian, 66% were male, 79% were married, 71% had a college education, 46% had an income >\$100,000/year, and 56% had Medicare or Medicaid insurance. All patients had completed at least one treatment modality. Mean COST score was 19.8. For those currently undergoing treatment, mean COST score was 21.4 as compared to those not undergoing current treatment, 19.3 (p=0.006). COSTs were lowest (Higher FT) for partial cystectomy (18.2; n=6), cystectomy with ileal conduit (18.8; n=58) and cystectomy with neobladder (19.5; n=28).

COST scores were highest for cystectomy with Indiana pouch (21.0; n=11) and radiation (20.2; n=163). Patients with a higher COST (Less FT) trended toward those who had not received radiation (18.9 vs 20.2; p=0.075) and those who did have a cystectomy (19.1 vs 20.4; p=0.081).

Conclusion: Financial Toxicity has been associated with negative quality of life, work ability, and importantly, oncologic outcomes. In bladder cancer, high rates of FT can be seen in patients who have already completed therapy, those who did not have radiation, and those who had a cystectomy.

Podium #23
A CRITICAL ANALYSIS OF FEMALE URETHRAL STRICTURE DISEASE: PATHOLOGIC AND HISTOLOGIC PARAMETERS FROM 7 PATIENTS UNDERGOING DORSAL VAGINAL GRAFT URETHROPLASTY

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Presented By: Ram Pathak, MD

Introduction: It is estimated that 2.7-8% of women with LUTS have an element of bladder outlet obstruction. Of these female patients with bladder outlet obstruction, 4-18% of these cases are secondary to urethral stricture disease. We present the pathologic analysis of female urethral strictures obtained at the time of reconstructive urethroplasty.

Methods: Seven separate female urethral tissue specimens were obtained at the time of dorsal vaginal graft urethroplasty by a single surgeon (SPP). Tissue samples were serially sectioned as needed based on tissue size and then fixed in 10% formalin between 6-12 hours prior to routine processing in paraffin blocks. Serial 5-micron sections were obtained for the following stains: hematoxylin and eosin, Masson's trichrome and elastin. Endpoint analysis included evaluation for epithelial hyperplasia and cell type, mucosal edema, degree of fibroblast/inflammatory cell infiltrate, and elastin fiber density and distribution.

Results: Seven surgical specimens were available for examination (TABLE 1). Four specimens had an epithelial lining of stratified squamous epithelium overlying an area of fibrosis (71%), one had mixed squamous and urothelial epithelium and one only urothelial epithelium. Two specimens (29%) showed more acute injury with prominent squamous papillary hyperplasia, focal erosion and patchy areas of mucosal hemorrhage. The urethral stricture areas were variably thickened with increased and more densely packed collagen fibers seen on trichrome stain. There were varying degrees of associated mucosal edema and loose fibrovascular proliferation just beneath the epithelium and overlying the scar tissue. The stricture areas also showed associated mucosal lymphocytic inflammation ranging from only mild and patchy to focally dense with lymphoid aggregates in one specimen. Elastin stain demonstrated variation in fiber density and distribution with increased deposition and fragmentation in subepithelial areas in specimens with more epithelial hyperplasia. The highest elastin fiber density appeared to be deeper in the submucosa associated with vessels and overlying muscle bundles.

Conclusion: The etiology of female urethral stricture disease is diverse. Current management for this disease involves urethral dilation which is efficacious at best approximately 43-55% of cases. Given this rather limited success rate, further elucidation to the pathologic and histologic characteristics may illuminate more appropriate and efficacious therapeutic pathways for the management of female urethral stricture disease.

Parameter	1	2	3	4	5	6	7
Epithelial hyperplasia	1	1	1	1	1	1	1
Inflammatory cells	1	1	1	1	1	1	1
Epithelial dysplasia	1	1	1	1	1	1	1
Collagen	1	1	1	1	1	1	1
Elastin	1	1	1	1	1	1	1
Submucosal fibrosis	1	1	1	1	1	1	1
Submucosal edema	1	1	1	1	1	1	1
Submucosal hemorrhage	1	1	1	1	1	1	1
Submucosal fibrovascular proliferation	1	1	1	1	1	1	1
Submucosal lymphoid aggregates	1	1	1	1	1	1	1
Submucosal elastin fiber density	1	1	1	1	1	1	1
Submucosal elastin fiber distribution	1	1	1	1	1	1	1

Epithelial hyperplasia

Epithelial dysplasia

Collagen

Elastin

Submucosal fibrosis

Submucosal edema

Submucosal hemorrhage

Submucosal fibrovascular proliferation

Submucosal lymphoid aggregates

Submucosal elastin fiber density

Submucosal elastin fiber distribution

Podium #24

**FEMALE URETHRAL STRICTURE IS DECREASING IN THE UNITED STATES:
ANALYSIS OF THE HEALTH CARE COST AND UTILIZATION PROJECT**

Urszula Kowalik, MD, Andrew Peterson, MD, FACS

Duke University Medical Center

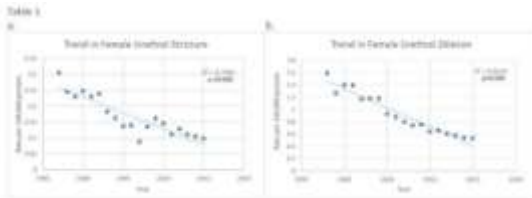
Presented By: Urszula Kowalik, MD

Introduction: Female urethral stricture is uncommon but remains an important cause of bladder outlet obstruction in women. The etiology of the disease is quite poorly understood but often thought to be secondary to serial instrumentation, pelvic trauma, inflammation, infection or radiation. We anecdotally noticed a decreasing trend in presentation of these patients to our specialty reconstructive urology clinic over the last decade and sought to analyze national trends in the diagnosis for this uncommon disease.

Methods: With IRB approval, we queried the Healthcare Cost and Utilization project (HCUP) National Inpatient Sample (NIS), the Nationwide Emergency Department Sample (NEDS) and the State Ambulatory Surgery and Services Database (SESD) using ICD-9 codes for urethral stricture in females of all ages. HCUP is the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information on inpatient stays, ED visits and ambulatory surgery in U.S. hospitals beginning in 1988. It is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and provides a representative sample for population analysis. Our search included ICD-9 code 598.9 urethral stricture, NOS as well as 58.6 urethral dilation. We limited the search to female patients in all age groups.

Results: A logistic regression model was used to plot the trend over time of urethral stricture. As illustrated in Table 1a, the rate has steadily decreased from 0.30 to 0.098 over a period from 1997 to 2015. There has also been a significant linear decrease in urethral dilation rates over the 18-year period examined (Table 1b).

Conclusion: It is unclear as to why the rate of female urethral stricture has declined. However, we postulate that over the years there has been a change in treatment patterns among urologists that may have led to a decrease in the use of urethral dilation that was historically used for the treatment of urethral syndrome and recurrent infections. Further research is needed in this area to better understand whether it is not just a correlate but a consequence of urethral dilation and whether its use has led iatrogenic urethral strictures in females.



Podium #25

ASSOCIATED MORBIDITIES OF URETHRAL STRICTURE AND URETHRAL INJURY IN A HIGH-RISK POPULATION

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Presented By: Ramphis Morales-Lopez, MD

Introduction: Urethral stricture and injury have been associated to a diverse group of genitourinary conditions. In our Puerto Rican population, common conditions like diabetes mellitus, hypertension, and vascular disease may not only add to disease recurrence but may also impact morbidity associated with urethral disease. We present our experience with the complications associated to urethral disease in our high-risk population.

Methods: We performed a retrospective evaluation of all patients with urethral stricture or injury, from 2015-2018 in the Puerto Rico Medical Center. We evaluated patient records for demographics, diagnosis, urethral procedures, past history and associated morbidity influenced by urethral disease.

Results: Our series is composed of 60 Hispanic males with a median age of 59.5 yrs. (range 11yrs.-88yrs). 93.3% (n=56) of patients had documented urethral stricture while 6.7% (n=4) presented with urethral injury. 15% (n=9) of patients had a history of cancer, 36.7% (n=22) were diabetic, 58.3% (n=35) had hypertension, 30% (n=18) had smoking history, and 53.3% (n=32) had vascular disease. 50% (n=30) had history of past urethral surgery (i.e. DVIU, urethroplasty) with recurrence of disease, and 65% (n=39) had a history of foley catheterization. Bulbar stricture was seen in 50% (n=30), and while 40% (n=24) had a stricture length or injury of 2cm or less, 11.7% (n=7) of patients presented with panurethral disease. Although many patients had multiple morbidities, we saw increased frequency in some conditions like, recurrent UTI 23.3% (n=14), bladder calculi 18.3% (n=11), urethral calculi 8.3% (n=5), ureterolithiasis 13.3% (n=8) and urinary fistula in 20% (n=12) of patients. More severe conditions were also seen like 13.3% (n=8) with scrotal abscess, 10% (n=6) with epididymo orchitis, and 16.7% (n=10) of patients with Fournier's Gangrene of which 7/10 had diabetes (RR=4), and 8/10 had hypertension (RR=2.9). Within our series 8.3% (n=5) had documented chronic kidney disease.

Conclusion: The incidence of urethral stricture, and urethral injury within a population with high prevalence of diabetes and hypertension may amplify the development of serious genitourinary conditions, especially those that are infectious in nature. Attention is needed in providing effective treatment for urethral disease in our Puerto Rican population to limit the incidence of associated conditions caused or exacerbated by the underlying disease.

Podium #26

A RETROSPECTIVE ANALYSIS OF COMBINED VENTRAL FASCIOCUTANEOUS SKIN FLAP AND DORSAL BUCCAL MUCOSA GRAFT VS. OVERLAPPING BUCCAL MUCOSA GRAFT FOR URETHRAL STRICTURE DISEASE

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¹University of Alabama School of Medicine, ²UAB Department of Urology

Presented By: Alexander Nocera, MS

Introduction: Urethral stricture disease comes in many forms, but the long, nearly obliterative stricture can be the most difficult to treat. Multiple descriptions of techniques have been described, including procedures combining grafts and flaps, overlapping buccal mucosa grafts, and staged procedures. Our objective is to evaluate outcomes for patients undergoing single stage urethroplasty for obliterative or nearly obliterative urethral strictures using a combined fasciocutaneous skin flap and buccal mucosa graft vs. an overlapping buccal mucosa graft.

Methods: We retrospectively reviewed urethroplasty cases from 2016-2018 performed by three surgeons at a single institution. We included patients who had penile and/or bulbar urethral strictures treated with either a combined skin flap and buccal mucosa graft (FG) or overlapping buccal mucosa graft (OBMGU). Failure was defined as the need for repeat intervention of any kind.

Results: 27 cases involving 25 patients were identified over the time period (15 OBMGU, 12 FG). Table 1 lists patient characteristics. Mean follow-up was 114 ± 105 days. In the FG group, more cases (10/12) were isolated to the penile urethra as compared to the OBMGU group (7/15) (F&G 10/12, 83.3% vs 7/15, 46.7%; p=0.02). 2/12 cases involved penile and bulbar

urethra in the FG group, while in the OBMGU group, 7/15 cases were isolated to the bulbar urethra and 1/15 involved both bulbar and penile urethra. There was no significant difference in age, race, or stricture length between groups (3.0 ± 1.6 vs 3.3 ± 2.1 , $p = .72$). No cases of the OBMGU experienced failure, while two patients undergoing FG required repeat intervention for stricture disease (success 100% vs 83.3%, $p = 0.19$). One patient in the FG cohort underwent a dilation followed by OBMGU, and the second patient underwent a redo FG. Complications including urine leak, infection, hematoma, and skin necrosis were noted in 3/12 FG and 4/15 OBMGU cases (25 vs 26.7%, $p = 0.53$).

Conclusion: There was no significant difference in success or complication rates among a cohort of males with urethral stricture disease undergoing OBMGU vs FG repair. A future prospective study enrolling a larger number of patients would provide further clarity on differences in outcomes between these two surgical approaches.

Table 1. Characteristics of men undergoing combined urethroplasty

	OBMGU (n=15)	FG (n=12)	p-value
age (yr)	33.1±33.2	38.2±33.7	
race			
Caucasian	12	10	
African-American	3	2	0.63
Other	1	0	
location			
penile	7	10	
bulbar	7	2	0.42
penobulbar	1	0	
etiology			
infectious	9	9	
external trauma	4	0	
ischemic	3	0	0.34
hypertension	0	0	
stricture length (cm)	5.0 ± 5.8	3.3 ± 2.1	0.72
complications			
hematoma	16.7%	25.0%	
urine leak	2	1	
infection	1	1	0.53
wound necrosis	0	1	
repeat intervention	0	16.7%	0.29

Podium #27
LONG TERM OUTCOMES OF ONE-STAGE AUGMENTATION ANTERIOR URETHROPLASTY: A META-ANALYSIS

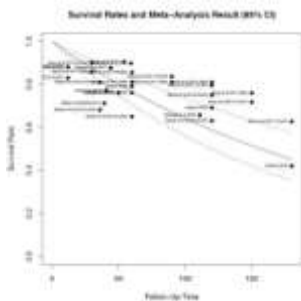
Cooper Benson, MD¹, Gen Li, PhD², Steven Brandes, MD³
¹Tulane University Department of Urology, ²Columbia University Department of Biostatistics,
³Columbia University Department of Urology
 Presented By: Cooper Roth Benson, MD

Introduction: The published literature on anterior augmentation urethroplasty (AU) consists largely of retrospective series from urethral reconstruction experts reporting intermediate follow up. The long term outcomes of AU however, are incompletely characterized in the literature. Many reconstructive surgeons quote interim success rate around 85% and prior systematic reviews report 83%-90% success rates for AU. We sought to summarize and resolve uncertainty as to the “true” long-term success of AU in published series, using statistical methods.

Methods: A systematic pubmed and EMBASE literature review was performed consistent with PRISMA guidelines to characterize long-term outcomes of single stage AU with a minimum upper range of 100 months of follow. Penile/preputial skin flaps and graft onlay and oral mucosal graft urethroplasties were included. The primary outcome was stricture free survival for one-stage AU. Secondary analysis evaluated differences in outcomes based on two failure definitions: the need for intervention versus presence of recurrent stricture on cystoscopy or urethrogography. Hazard rates were induced from the reported failure rates of one-stage augmentation anterior urethroplasty assuming survival followed an exponential distribution and fixed and random effect models were fitted to the data. A subset analysis removing studies including lichen sclerosis, hypospadias and penile skin graft was also performed.

Results: For the meta-analysis, ten studies met inclusion criteria, and two studies reported separate outcomes for grafts and flaps, and thus were included separately in the analysis. The mean hazard rate across all studies was 0.0044, the corresponding survival rates at 1 year 0.948 (95% CI 0.933-0.964), at 5 years 0.766 (95% CI 0.706-0.831), at 10 years 0.587 (95% CI 0.499-0.691), and at 15 years are 0.45 (95% CI 0.352-0.574). (Figure 1). Subset analysis of the 4 select studies noted 1, 5, 10, and 15 year survival rates of 0.97, 0.96, 0.74, and 0.63 respectively.

Conclusion: The long-term success rates of AU are much worse than previously appreciated, with progressive decline in success over time and by quoting intermediate follow up over states and over-estimates long term success. Even in the best case scenarios, eliminating lichen sclerosis, hypospadias failures and penile skin graft AU the 15 year success rate was 63%, and thus patients should be counseled accordingly.



Podium #28

PROPHYLACTIC ANTIBIOTICS AFTER URETHROPLASTY DO NOT REDUCE URETHRAL STRICTURE DISEASE RECURRENCE

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Presented By: Omotola Ashorobi, MD

Introduction: While it is common practice among surgeons to prescribe antibiotics after urethroplasty, it is unclear if this provides any benefit regarding patient options. Our objective was to evaluate infection and recurrence rates after single stage urethroplasty stratified by the use of postoperative antibiotics and to provide recommendations for best practices based on our experience with a diverse cohort.

Methods: Retrospective chart review of men with a history of single stage urethroplasty from 2011 to 2017 based on hospital coding data. The procedures were performed by three surgeons at a single academic institution. Primary outcomes that were reviewed included: post-operative antibiotic prophylaxis, post-operative infection, and stricture recurrence requiring intervention of any type.

Results: 160 men were identified with a mean age of 47 +/- 15.8 years, and 30% of the cohort was African-American. Mean follow-up was 1 year (+/- 1.3 years). All patients received preoperative antibiotic prophylaxis. Post-operatively, 97/160 (60.6%) patients received prophylactic antibiotics and 63/160 (39.4%) did not. At initial follow-up, patients who received antibiotics at discharge were routinely cultured prior to foley catheter removal, while the non-antibiotic patients were only selectively cultured if symptomatic. Positive urine cultures (defined as the presence of any growth of bacteria/fungi) were noted in 36/160 (22.5%) patients. Of the 36 with positive cultures, 26 (72.2%) had received Abx at discharge, while 10 (27.8%) had not. Despite receiving antibiotics at discharge, 26/97 (26.8%) had a positive urine culture postop. Among the 14 men with symptomatic urinary tract infections, 9 had received antibiotics at time of discharge from surgery. Men who had a positive urine culture at initial follow-up were significantly more likely to develop disease recurrence (30.6% vs 15.3%, p = 0.04), though culture wasn't routinely done in the non-antibiotic group, perhaps missing some positive cultures. There were 30/160 (20%) symptomatic urethral stricture recurrences. 17/30 men with stricture recurrence received antibiotics at discharge vs 13/30 men who did not. (56.7 vs 43.3%, p=0.62).

Conclusion: Despite receiving post-operative antibiotic prophylaxis after urethroplasty, 26.8% of men still have positive urine cultures. Furthermore, postoperative antibiotic use did not reduce symptomatic stricture recurrence rate. Routine antibiotic prescription after urethroplasty should be abandoned.

Podium #29

ENGINEERING OF VOLUMETRIC SKELETAL MUSCLE TISSUE FOR ACCELERATED RESTORATION OF PELVIC FLOOR MUSCLE FUNCTION

Ji Hyun Kim, Myung Jae Jeon, Ickhee Kim, Sang Jin Lee, James Yoo, John Jackson, In Kap Ko, Anthony Atala

Wake Forest School of Medicine

Presented By: John D. Jackson, PhD

Introduction: Damages in the pelvic floor muscles often cause dysfunction of the entire pelvic urogenital system. Current treatments for the injury include physical therapy, autologous muscle flap transfer, and surgical interventions using synthetic and biological materials. However, none of them entirely address the problems associated with long-term restoration of normal anatomy and function in the injured pelvic floor muscle system. In fact, the current muscle engineering techniques are limited by the ability to build sizable constructs with timely innervation for successful graft survival. To this end, this study aims to fabricate and optimize volumetric 3-D bioprinted skeletal muscle constructs with innervation capability for repairing pelvic floor muscle injuries.

Methods: Bioprinted skeletal muscle constructs that mimic native skeletal muscle organization were fabricated by using a 'bioink' formulation consisting of fibrin-based hydrogel containing human muscle progenitor cells, and muscle tissue formation capacity was investigated in a pelvic floor muscle injury in rats.

Results: Our *in vitro* study showed that printed muscle constructs possess aligned muscle fibers with high cell viability. The implanted muscle cells developed unidirectionally aligned myotubes or muscle fibers which maintained muscle characteristics. In addition, blood vessels and nerve ingrowth into the implanted constructs were evident.

Conclusion: Our results suggest that the engineered muscle constructs may contribute to the restoration of pelvic floor muscle function anatomically and functionally. Engineering of functional muscle tissue constructs may provide a solution to this unmet medical need.

Podium #30

STRIKING DIFFERENCES IN THE EFFECTS OF β 3-ADRENOCEPTOR AGONISTS AND ANTIMUSCARINICS ON BLADDER FILLING/VOIDING FUNCTION IN CHRONIC SPINAL CORD INJURED RATS

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Presented By: Bradley A. Potts, MD

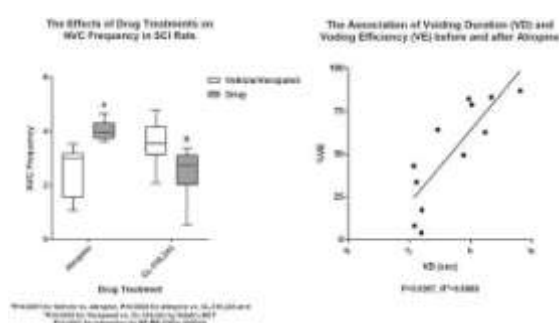
Introduction: β 3-adrenoceptor agonists (BARA) and antimuscarinics are mainstays in the treatment of overactive bladder. We previously demonstrated significant positive effects with a rat-specific BARA, CL-316,243 (CL), in chronic suprasacral spinal cord transected (SCI) rats. We present the results of a selective post-hoc analysis of CL and atropine effects from a multi-drug study designed to assess myogenic vs neurogenic contributions to SCI-induced neurogenic detrusor overactivity (NDO).

Method: External urethral sphincter (EUS) EMG electrodes and catheters (femoral vein, ureteral diversion and transvesical) were placed in isoflurane-anesthetized female Sprague-Dawley rats (4 weeks post-SCI at T9-10, n=14). Conscious continuous cystometry was performed for ≥ 60 min using Ballman cages. The infusion was stopped, bladder emptied, and vehicle (normal saline) was administered prior to resuming bladder infusion. Following 30min, the infusion was again stopped, the bladder emptied, and i.v. drugs were delivered prior to subsequent 30min infusion cycles. Six animals received 0.4mg/kg atropine and the other eight received 10mg/kg verapamil; following the same methods, the verapamil-treated group received 100ug/kg CL prior to the next fill cycle. Total bladder capacity (TBC), filling compliance, non-voiding contraction (NVC) counts, frequency and average amplitude, voiding duration (VD) and efficiency (VE), and EUS phasic firing frequency (PFF) were measured/determined. Data were analyzed using non-parametric 1- or 2-Way RM-ANOVA, or linear regression.

Results: VP had no effect on any parameter and, due to its 2min half-life, we compared the effects of atropine to CL. Both atropine and CL significantly increased TBC (47%, $P=0.0016$ and 61%, $P=0.0018$, respectively), but atropine increased NVC counts and frequency (167%,

P=0.0001 and 31%, P<0.0001, respectively) and CL decreased NVC frequency (-22%, P=0.0009). Both drugs overall decreased NVC amplitudes (P=0.0221). Only atropine significantly decreased VE (-68%, P=0.0060) and VD (-42%, P= 0.0009) and VD and VE were positively associated (P=0.0007, R2=0.70). Compliance and PFF were unaffected by any drug treatment.

Conclusion: While TBC was increased and NVC amplitude decreased by CL and atropine, atropine increased NVC count and frequency and CL preserved VE and reduced NVC frequency. The strong relationship between VD and VE suggests that VD is also an important factor for VE effects of antimuscarinics. These results support the continued study of BARA for NDO treatment.



Podium #31

CLINICAL EXAMINATION OF THE FEET AND PELVIC ANATOMY CAN PREDICT SEVERITY OF URINARY INCONTINENCE: INTRODUCING THE NEURO-UROLOGICAL INDEX

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Emory University

Presented By: Madeline Jones Cancian, MD

Introduction: Urinary incontinence affects up to 17% of women in US. Causes are multifactorial, and obstetric factors are important, but not all women who experience similar perinatal insults will develop incontinence. We suspect that developmental variations may render some women more or less vulnerable, and those with subtle deficits may be predisposed to acquiring incontinence. Evidence of incomplete neural development of the most distal spinal segments, S2 to S5, can be observed by a detailed physical exam of the corresponding structures, specifically gluteal muscle mass, pelvic anatomy and the form and function of the feet. We hypothesize that clinical exam findings of sacral neurogenic deficits, such as gluteal muscle asymmetry and poorly formed feet will be more common in women with severe urinary incontinence.

Methods: All women attending the Emory Continence Center underwent a detailed neuro-urologic examination. A "score" was created from a five element exam of levator/Kegel contraction strength, anal grip, 2-point perineal discrimination, motor function of the toes, and perineal body position; each element was given a value from 2 to 0, with a best possible score of 10. The neuro-urologic index was then related to a variety of subjective and objective findings.

Results: 1189 women were included in this study. The neuro-urological index was significantly lower in patients with increased pad use, advanced age, presence of nocturia, presence of urge incontinence, increased social disturbance, longer duration of symptoms, poor uroflow pattern, and presence of utero-vaginal prolapse (all p<0.05) [Table 1]. The NUI did not significantly vary between women with and without objective findings of stress incontinence, fecal incontinence, frequency, urgency, and presence of a post void residual.

Conclusion: Objective grading of a detailed neuro-urologic exam can provide insights into common pelvic floor conditions, including urinary incontinence and vaginal prolapse. Patterns of sacral neurogenic defects can be observed on physical exam and may help explain the presence and severity of pelvic floor disorders in women.

The demonstration that physical exam findings do correlate significantly with the severity of urinary symptoms might offer an explanation for observed familial trends and also help to diminish the stigma of incontinence.

Peak Per Day	Parameter	NP Score	P Value
Admission Age	< 2 years	0.01	0.002
	≥ 2 years	0.02	
Respiratory	< 75 years	0.01	0.002
	≥ 75 years	0.01	
Medication	Medication	0.02	0.001
	Present	0.02	
Second Admission	Stroke	0.00	0.025
	Other	0.01	
Stroke Pattern	Normal	0.00	0.001
	Abnormal	0.00	
Second Admission	Little/None	0.01	0.028
	Moderate/Severe	0.01	
Symptom Duration	< 2 years	0.01	0.007
	≥ 2 years	0.00	
Prognosis	Little/None	0.00	0.001
	Moderate/Severe	0.00	

Podium #32

LONG-TERM OUTCOMES AND COMPLICATIONS OF THE TRANSOBTURATOR MIDURETHRAL SLING

Librado Valadez, Department of Urology, Trapper Munn, School of Medicine, Clifton Frilot II, School of Allied Health, Alex Gomelsky, Department of Urology

LSUHSC-Shreveport

Presented By: Librado Valadez, MD

Introduction: Based on Grade A evidence, the AUA/SUFU Stress Urinary Incontinence (SUI) Guidelines strongly recommend either the retropubic or transobturator (TO) midurethral sling (MUS) for the index female patient with SUI. However, while numerous studies report long-term outcomes for the retropubic MUS, long-term outcomes of the TO MUS are largely absent. Long-term outcomes and complications of the outside-in TO MUS are forthwith presented.

Methods: This is an IRB-approved, retrospective chart review of all women who underwent a TO MUS at our institution from 2004-2010. Women undergoing concomitant surgery were included. Pre- and postoperative assessment included cough-stress test, SEAPI assessment (stress incontinence, emptying, anatomy, protection, and inhibition), validated quality of life (QoL) questionnaires, and 10-point Visual Analog Score (VAS) measuring overall satisfaction. "SUI Cure" was defined as: no subjective or objective SUI, and no additional surgery to achieve stress continence. Statistical evaluation was conducted.

Results: Of 437 women, 292 (67%) had a minimum follow-up (F/U) of 48 months, with mean and median F/U of 88 and 92 months, respectively. “SUI cure” was 61% in the entire cohort and 50% in the 74 women who had MUS only. Age, body-mass index, and Valsalva leak point pressures were not risk factors for failure. Median time to SUI recurrence was 38 months in the entire cohort and 18 months in the MUS-only group. Perioperative complications were few and typically associated with concomitant surgery. Symptomatic periurethral banding occurred in 12 women (2 bilateral), with 5 women undergoing 6 sling revisions. An additional 10 women developed asymptomatic banding on exam (2 bilateral). Overall, a statistically significant improvement in SEAPI scores, QoL indices, and VAS was observed.

Conclusion: Long-term SUI-cure after the TO MUS is achieved in 61% of women, which is lower than success rates reported in the literature. This may be due to waning success with long-term F/U, regardless of our strict definition of cure. Periurethral banding may be asymptomatic and may appear de novo over time. Overall, women experience a significant improvement in their QoL after TO MUS surgery.

Podium #33

OUTCOMES OF MIDURETHRAL SLINGS IN THE OBESE WOMAN

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Presented By: James E. Pilkington, MD

Introduction: Obesity is a risk factor for recurrence of stress urinary incontinence (SUI) after definitive midurethral sling (MUS) surgery. Despite these findings, most obese women still derive benefit and complication rates are similar to non-obese women. The CDC groups obesity into three classes [Class I (body mass index (BMI) 30-35), Class II (BMI 35-40), and Class III (BMI>40)]. As outcomes in obese women are largely absent, we aim to present our MUS outcomes in this population.

Methods: This is an IRB-approved, retrospective chart review of women who underwent top-down retropubic (RP) and outside-in transobturator (TO) MUS. Women who had previous anti-incontinence surgery and those undergoing concomitant surgery were included. Pre- and postoperative assessment included routine examinations and validated quality of life (QoL) questionnaires. "SUI Cure" was defined as no subjective or objective SUI, and no additional procedures needed to achieve continence.

Results: We identified 575 women with BMI \geq 30 and follow-up \geq 12 months (Mean=41months). Of these, 405(70%) had RP MUS. Mean age, parity, baseline pad use, and preoperative QoL indices were not statistically different between RP and TO groups. The cure rate for the RP group was 65% [Class I (69%), Class II (63%), Class III (57%)] and 58% for the TO group [Class I (62%), Class II (58%), Class III (45%)]. In women undergoing sling only, 83/142 (58%) in the RP group were cured [Class I (63%), Class II (52%), Class III (55%)] and 31/57 (54%) in the TO group [Class I (62%), Class II (50%), Class III (42%)]. Cure rates waned over longer follow-up for both groups. Perioperative complications were infrequent, with most being Clavien grade \leq 3 and associated with concomitant surgery. Mean improvement in all QoL indices was seen in all groups, irrespective of SUI cure.

Conclusion: Our results indicate that SUI cure rates after MUS in the obese population are lower than those traditionally-quoted in the non-obese. Longer periods of follow-up, increasing class of obesity, and TO MUS were risk factors for recurrent or persistent SUI. MUS surgery in obese women is safe and overall satisfaction is high. While significant obesity alone should not be a deterrent in performing MUS, appropriate preoperative counseling is strongly recommended.

Podium #34

URODYNAMICS ON YOU TUBE: WHAT ARE PATIENTS WATCHING?

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Presented By: Julia Han, MD

Introduction: There is limited literature about the quality of urologic content on social media. Our objective was to characterize the quality and content of the most frequently watched YouTube videos related to urodynamics.

Methods: YouTube was searched using the term "urodynamics." Videos were organized in descending number of views and those with less than 1,000 views were excluded. We developed a questionnaire to assess each video's target audience, purpose, and whether it included information for pediatrics or adults. We assessed if the videos included information on why and how urodynamics are done. Data from each video was extracted by three viewers and the inter-rater reliability (IRR) was calculated using the kappa statistic. Descriptive statistics were also obtained.

Results: Three reviewers rated 42 videos, ranging from 1 to 4,999 seconds. The most viewed video had 1,630,787 views. Mean IRR was 0.76, ranging 0.40 to 0.95. Target audience was 53.9% physicians, 41.0% patients, and 5.1% unclear. Purpose of the videos was 38.5% patient information, 28.2% advertising or publicity, 23.1% physician continuing education, and 10.3% unclear. Of all the videos 38.5% were made by a private physician's practice, 28.2% by an academic institution, 25.6% as a commercial or advertisement for a company, 5.1% by a governmental institution, and 2.6% by a patient. 71.8% of videos included the indication for

urodynamics. 51.3% visually demonstrated the procedure and only 15.4% of videos gave a time estimate for the procedure. Only 38.5% of videos indicated risks and safety associated with urodynamics. Of the videos, 76.9% indicated that a catheter would be in the rectum and in the bladder, 66.7% that the bladder would be filled, 72.8% that the patient would be asked to void, 61.5% that sensation of the bladder would be assessed, and 46.2% indicated that a patient would be asked to cough or bear down to detect urinary incontinence.

Conclusion: Many patients look to the internet and specifically YouTube to gather information about urodynamics. The most frequently viewed YouTube videos are heterogeneous in terms of content, purpose, and quality. Physicians should be cognizant of the variability and content in such videos related to urodynamics.

Podium #35

URODYNAMIC TESTING AFFECTS TREATMENT DECISIONS IN PROSTATE CANCER SURVIVORS PRESENTING WITH INCONTINENCE

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Presented By: Urszula Kowalik, MD

Introduction: Urodynamics (UDS) is a group of clinical tests used to evaluate the transport, storage and elimination of urine. Within the past few decades a number of new medical and surgical therapies for the treatment of UDS-diagnosed conditions have been developed potentially changing the indication and frequency in which UDS is used. The purpose of this study was to assess the effect of urodynamic testing on decisions for treatment in male prostate cancer survivors with incontinence.

Methods: We conducted a review of all male prostate cancer survivors referred to our clinic for incontinence between January 1 2011 and August 31, 2014. Using chart review and ICD-9 codes as well as CPT codes 51726, 51727, 51728, 51729, 51736, 51741, 51785, 51797, 51798, and 76000. We limited our review to only those men who received urodynamics and the findings were reviewed individually for bladder capacity, leak point pressure, compliance, and the presence of uninhibited contractions. Clinical recommendations after the studies were reviewed from the notes. Associations of medical/surgical management versus test diagnoses were assessed with a t-test or a Wilcoxon signed rank test using JMP software.

Results: 267 men underwent urodynamics for post-prostate cancer therapy incontinence during this time period. Based on the findings from the studies, 137 were offered an AUS, 66 were recommended a male sling, 32 were offered either a sling or sphincter and 32 were counselled to receive no surgical intervention. Based from those recommendations, 101 men received an AUS, 71 received a sling, 41 improved solely on OAB medications alone while 54 chose no treatment at all. Table 1 illustrates the rates of treatment based on recommendation and shows that 15% of patients required medication alone.

Conclusion: Fifteen percent of our patients were found to have urgency incontinence is a major source of their symptoms and had improvement with medication and nonsurgical therapy alone. Another 20% opted for no treatment based on UDS findings leading to 35% of patients avoiding a surgical procedure altogether. Our review suggests that UDS remains an important diagnostic tool for the assessment of urologic symptoms and aids in medical decision making as well as surgical planning.

Intervention	Recommended	Received
AUS	46% (121)	29% (101)
Medication then AUS	6% (16)	-
Sling	21% (55)	26% (71)
Medication then Sling	4% (11)	-
AUS or Sling	10% (28)	-
Medication then AUS or Sling	1% (4)	-
Medication Only	10% (26)	15% (41)
None	2% (6)	20% (54)

Table 1: Interventions recommended and received based on UDS testing

Podium #36

ASSOCIATION OF CONTACT SURFACE AREA WITH ROBOTIC PARTIAL NEPHRECTOMY OUTCOMES

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Presented By: Ashley Shumate, MD

Introduction: To evaluate renal tumor contact surface area (CSA) as a tool for predicting outcomes of robotic partial nephrectomy (RAPN).

Methods: 360 consecutive RAPNs were analyzed from a prospectively-maintained database. We calculated CSA for all renal tumors with the formula proposed by Hsieh et al. (2016): $CSA = 2\pi r * d$, where $\pi \approx 3.14$, r = tumor radius (cm), and d = tumor depth (cm). We analyzed patient and tumor characteristics, pathology, and intraoperative/postoperative outcomes and their association with CSA. Patients were excluded if they had prior RAPN ($n=7$), had RAPN for calyceal diverticulum ($n=4$), if >1 tumor removed during RAPN ($n=9$), or if all variables were not available for calculating CSA ($n=8$) for a final cohort of 332. After adjusting for multiple tests, $p \leq 0.017$ was considered statistically significant.

Results: Median age was 63 years and 132 (39.8%) patients were female. Median CSA was 12.2 cm². Median warm ischemia time was 18 minutes, median length of stay (LOS) was 2 days, 20 patients (6.0%) had a post-operative complication of Grade III or higher, and median percent change in estimated glomerular filtration rate (eGFR) from preoperative to 1 month after RAPN was -11.4%. Higher CSA was associated with higher warm ischemia time (WIT) (Spearman correlation [rs]=0.52, $P \leq 0.001$). The association between CSA and change in eGFR from baseline to 6 month postop was not statistically significant after adjustment for multiple testing, but eGFR was not available for 110 patients at 6 month postop.

Conclusion: Higher CSA is associated with longer WIT, higher EBL, LOS, and worse renal function after RAPN, but is not associated with post-operative complications after RAPN. CSA may have some benefit as a pre-operative tool for predicting intraoperative and post-operative outcomes of RAPN.

Podium #37

OUTCOMES IN PATIENTS UNDERGOING CYTOREDUCTIVE NEPHRECTOMY

Danica May, MD, Marc Matrana, MD, Kathleen Lata-Arias, MPH, Daniel Canter, MD

Ochsner Health Systems

Presented By: Danica May, MD

Introduction: The utilization of cytoreductive nephrectomy (CN) as part of the treatment of patients with metastatic kidney cancer remains debated in the targeted therapy era. Using a large administrative database, we examined the rates of adverse surgical outcomes in patients undergoing CN compared to patients undergoing radical nephrectomy in the non-metastatic setting.

Methods: Patients in the American College of Surgeons National Surgical Quality Improvement Program who underwent a nephrectomy between 2011 and 2016 were included. Patients were stratified by the pre-operative variable of presence or absence of disseminated cancer. Peri-operative outcomes were compared. A multivariable logistic regression analysis was performed to test the association between patients with disseminated cancer and peri-operative morbidity and mortality.

Results: There were 15,869 total patients included in this analysis of which 1,322 (8%) patients had disseminated cancer. Of the entire cohort, the majority of patients were over 60 years old (58%) and 9,621 (61%) were male. 73% of the patients were Caucasian. Patients with disseminated cancer had more minor ($p < .01$) and major ($p < .01$) complications, a higher rate of reoperation ($p < .01$), and a higher rate of unplanned readmissions ($p < .01$). Finally, the cohort with disseminated cancer had a higher rate of post-operative mortality ($p < .01$) than patients without disseminated cancer.

Conclusion: Patients undergoing a CN have worse morbidity as well as higher rates of death, readmission, and reoperation. Pending level I evidence in patients with metastatic kidney cancer, care should be taken when selecting surgical candidates for CN.

Podium #38

IMPACT OF CYTOREDUCTIVE NEPHRECTOMY ON OVERALL SURVIVAL OUTCOMES IN PATIENTS WITH METASTATIC RENAL CELL CARCINOMA AND BONE METASTASES

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Presented By: Jonathan George Pavlinec, MD

Introduction: Patients with metastatic Renal Cell Carcinoma (mRCC) are offered cytoreductive nephrectomy (CN) to improve survival based on historic randomized trials. Traditionally, patients with bone metastases have not been candidates for CN. However, since those historic RCTs, systemic therapy has changed with the advent of Tyrosine Kinase inhibitors (TKI). It has not been investigated whether survival outcomes are improved with CN in patients with bone metastases in the setting of mRCC in the current era of TKI therapy.

Methods: Patients identified between 2004-15 in the National Cancer Database with clinical mRCC with bone metastases, who underwent surgery within 100 days of diagnosis or did not receive surgery. Univariate and multivariable analysis was performed to identify patient and disease factors that predicted overall survival. Cox regression analysis was performed upon a multivariable model to determine the effect of CN on overall survival outcomes.

Results: A total of 6,943 patients met inclusion criteria, 2,323 (33%) underwent cytoreductive nephrectomy. Median age was 64 years [IQR 56-72] 69% were men. 29% of patients had a Charlson-Deyo comorbidity score ≥ 1 . Caucasian and African American patients comprised 86% and 9% of the population, respectively. The clear majority of patients (89%) had clear cell histology. On multivariable analysis, Age, race, Charlson-Deyo score, tumor grade and receipt of systemic therapy were found to impact overall survival. Controlling for these factors, undergoing CN was significantly associated with overall survival: the hazard ratio for death was 0.45 [95% CI 0.41-0.49, $p < 0.001$] compared to those who did not receive surgery.

Conclusion: Patients undergoing CN for mRCC with bone metastases have improved overall survival outcomes compared to those not receiving CN. This effect was independent of whether they received systemic therapy. These findings need to be interpreted cautiously as neither the volume of bone metastases was known nor whether patients received radiotherapy specifically for these bone metastases.

Podium #39

IMPACT OF TREATMENT FACILITY VOLUME ON OVERALL SURVIVAL OUTCOMES IN PATIENTS UNDERGOING CYTOREDUCTIVE NEPHRECTOMY FOR METASTATIC RENAL CELL CARCINOMA

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Presented By: Jonathan George Pavlinec, MD

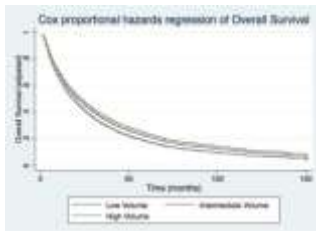
Introduction: Surgeon- and center-level procedural volume have both been associated with surgical outcomes across a variety of procedures. Efforts to centralize advanced genitourinary malignancy surgical care have been adopted to varying degrees. Based on historic RCTs, cytoreductive nephrectomy (CN) has been offered to good-intermediate risk patients with metastatic renal cell carcinoma (mRCC). However, recent data casts doubt on the role of CN. It has not been investigated whether survival outcomes are improved if treated in higher volume centres.

Methods: Patients identified between 2004-15 in the National Cancer Database with clinical mRCC who underwent surgery within 100 days of diagnosis Univariate and multivariable

analysis was performed to identify patient and disease factors that predicted overall survival. Treatment facility volume was defined as low (1 and 5/yr). Cox regression analysis was performed upon a multivariable model to determine the effect of treatment facility volume on overall survival outcomes.

Results: A total of 9,989 patients met inclusion criteria. Median age was 60 years [IQR 53-68] 69% were men. 27% of patients had a Charlson-Deyo comorbidity score ≥ 1 . Caucasian and African American patients comprised 88% and 7.2% of the population, respectively. The clear majority of patients (81%) had clear cell histology. The median treatment volume was 1.8 patients/yr [IQR 0.8 - 4]. CN was performed at low, intermediate, and high-volume centers for 37%, 45% and 18% of patients, respectively. On multivariable analysis, Age, race, Charlson-Deyo score, tumor grade and receipt of systemic therapy were found to impact overall survival. Controlling for these factors, facility treatment volume was significantly associated with overall survival: the hazard ratio for death was 0.89 [95% CI 0.84-0.94, $p < 0.001$] and 0.83 [95%CI 0.78-0.89, $p < 0.001$] for patients treated at intermediate and high volume facilities, respectively, compared to those treated at low volume centers.

Conclusion: Patients undergoing CN for mRCC have improved overall survival outcomes when treated at high or intermediate volume compared to low volume centres. This effect was independent of whether they received systemic therapy or not. This suggests that surgery itself performed at intermediate-high volume centres should be promoted in this clinical setting.



Podium #40

NOVEL MIRCO RNA BASED SIGNATURE CORRELATES WITH SURVIVAL IN PATIENTS WITH CLEAR CELL RENAL CELL CARCINOMA

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Presented By: Louis Spencer Krane, MD

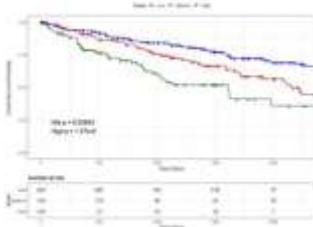
Introduction: Micro RNAs (miRNA) are short non-coding RNA which are associated with post-transcriptional regulation of gene expression. As clear cell renal cell carcinoma (ccRCC) remains the most common primary renal malignancy and accounts for the majority of more than 14,000 deaths from renal malignancies each year, identification of miRNA signatures may portend prognostic significance could help subset patients with ccRCC eventually leading to therapeutic pathways. miRNAs have demonstrated importance in intratumor communication in ccRCC, however there are no established miRNA biomarkers. In this study, we sought to create a miRNA signature to predict risk overall mortality in patients with ccRCC.

Methods: Patient's clinical data and level 3 miRNA expression profiles were obtained from the Cancer Genome Atlas (TCGA) repository (<https://portal.gdc.cancer.gov>). Clinical data was correlated with miRNA expression data. Regression analysis, Kaplan-Meier curves, and Heatmap clustering were performed using R packages ComplexHeatmap, Tidyverse, and Survival. Statistical analysis was performed using R Studio v3.4.4. Significant miRNAs were isolated and a diagnostic high, medium, and low score were created correlating to miRNA expression levels of each patient.

Results: We identified 4 miRNAs (mir-204, mir-181a-1, mir-29b-1, let-7d) that significantly affected survival and created a weighted score from these. (Score = $(0.776 \times \text{hsa-mir-204}) + (-0.507 \times \text{hsa-mir-181a-1}) + (-0.459 \times \text{hsa-mir-29b-1}) + (-0.42 \times \text{has-let-7d})$) We were able to subset the cohort using hierarchical clustering into 3 survival categories: low, medium, and high. The low, medium, and high score groups had 278, 84, and 103 subjects respectively. Subjects with a medium and high miRNA score show a decreased significance, $p < 0.05$ and $p < 0.00005$

respectively (Figure 1). On multivariate analysis, medium and high score along with age, nodal status, metastatic deposit, and T3 or greater lesion were all independently associated with overall survival.

Conclusion: We have created a novel miRNA signature to predict survival in ccRCC. Prospective validation of these markers is ongoing along with further determination of let-7d's role in aggressive tumor development.



Podium #41

MICRORNA SIGNATURE PROVIDES A NOVEL BIOMARKER FOR OVERALL SURVIVAL IN PAPILLARY RENAL CELL CARCINOMA

Jacob W. Greenberg, Stephen Proctor, MD, Ibifiri Wilcox, Jonathan L. Silberstein, MD, FACS, MBA, L. Spencer Krane, MD

Tulane School of Medicine

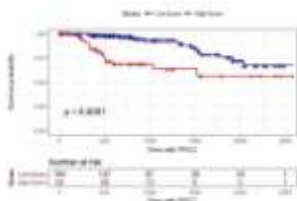
Presented By: Louis Spencer Krane, MD

Introduction: Renal Cell Carcinoma is newly diagnosed in 58,000 individuals in the United States annually. Papillary Renal Cell Carcinoma (pRCC) is the second most common variant of renal cell carcinoma accounting for approximately 15% of these cases. Currently, there are no widely adopted biomarkers that predict patient outcomes with pRCC. The aim of this study is to create a diagnostic score based on identified miRNA signatures that could be used predict patient survival.

Methods: Patient's clinical data and level 3 miRNA expression profiles was obtained from the Cancer Genome Atlas (TCGA) repository, an NIH funded open genomic database (<https://portal.gdc.cancer.gov>). Clinical data was correlated with miRNA expression data, and regression analysis Kaplan-Meier curves and Heatmap clustering were performed using R packages ComplexHeatmap and Survival regression. Statistical analysis was also performed using R Studio v3.4.4. Significant miRNAs were isolated and a diagnostic high and low score was created correlating to a miRNA expression levels.

Results: A total of 276 patients were identified who met inclusion criteria and included in this study. Two miRNAs, hsa-mir-335 and has-mir-5010, were identified using regression analysis to be most associated with overall survival. Clustering analysis produced 213 patients with a high score and 63 patients with a low score. Patients with a low score showed a significant decrease in survivability ($P < 0.0001$) (Figure 1). This was validate in multivariate analysis with known risk factors.

Conclusion: We have created a novel miRNA signature to predict survival in pRCC using previously unreported miRNA biomarkers. hsa-mir-335 has been identified in gastric cancer as biomarker and is upstream chromosome 7q from MET, a well-known amplified gene in pRCC. hsa-mir-5010 has been used a biomarker in colon cancer but has no validated targets currently. Prospective validation of these markers is ongoing along with further determination of mir-5010 role in disease progression in underway.



Podium #42

RACIAL DIFFERENCES IN THE PROGNOSTIC CAPABILITIES OF SARCOPENIA IN PREDICTING OVERALL SURVIVAL AFTER SURGERY FOR PATIENTS WITH LOCALIZED RENAL CELL CARCINOMA

Milton Williams¹, Amir Khan¹, Dattatraya Patil, MBBS, MPH¹, KC Biebighauser, MD¹, Sara Psutka, MD, MSCR¹, Aarti Sekhar, MD², Kenneth Ogan, MD¹, Mehmet Bilen, MD³, Viraj Master, MD¹

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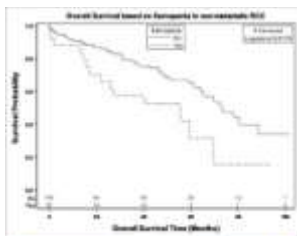
Presented By: Milton A'Keem Williams

Introduction: Lean muscle mass deficiency or sarcopenia is independently associated with inferior survival following the surgical treatment of localized renal cell carcinoma (RCC). Patients of African ancestry, or black, have been known to have the highest incidence of RCC compared to any other ethnicity but research in RCC has historically consisted of few black patients. In the current study we retrospectively investigate racial differences in the associations between preoperative sarcopenia and overall survival following definitive surgery for non-metastatic (M0) RCC.

Methods: Lumbar skeletal muscle index (SMI) for 187 patients treated with radical nephrectomy for M0 RCC between 2009 and 2013 was quantified at the 3rd lumbar vertebra from preoperative computerized tomography (CT) or magnetic resonance imaging (MRI). Sarcopenia thresholds were determined statistically and defined for men and women with a BMI

Results: The study cohort consisted of 187 patients of whom 106 (57%) were non-Hispanic white, 70 (37%) were black and 11 (6%) were considered as "other". Sarcopenia was present in 27 patients of which 11 (41%) were black. The presence of sarcopenia was associated with mortality in univariate models (hazard ratio (HR)=2.05, 95% CI 1.12-3.78; p=0.02) and approached significance in multivariate analysis, (HR= 2.37, 95% CI 0.97-5.83; p= 0.059). Being black was not significantly associated with survival in univariate models, (HR= 1.02, 95% CI 0.56-1.85; p=0.950) and although insignificant, appeared to confer a survival benefit in multivariable analysis (HR= 0.86, 95% CI 0.44-1.67; p=0.658). Non-black patients with sarcopenia had a significantly increased risk of death (HR= 2.33, 95% CI 1.11-4.91; p=0.026) but black patients with sarcopenia did not (HR= 1.70, 95% CI 0.66-4.39; p=0.275).

Conclusion: Preoperative sarcopenia is independently associated with mortality in M0 RCC patients of other races but not in black patients.



Univariate, Overall Survival			
Covariate	N	Hazard Ratio (95% CI)	P-Value
Race			
Black	70	1.02 (0.56-1.85)	0.95
Non-Black	117	Reference	
Sarcopenia			
Yes	27	2.05 (1.12-3.78)	0.02
No	160	Reference	
Race and Sarcopenia			
Black-No Sarcopenia	69	1.05 (0.49-2.27)	0.91
Black-Sarcopenia	11	1.70 (0.66-4.39)	0.27
Other Race-Sarcopenia	10	2.33 (1.11-4.91)	0.026
Other Race-No Sarcopenia	100	Reference	
Number of observations in the original data set = 187. Number of observations used = 180.			
Multivariate, Overall Survival			
Covariate	N	Hazard Ratio (95% CI)	P-Value
Race			
Black	70	0.86 (0.44-1.67)	0.658
Non-Black	117	Reference	
Sarcopenia			
Yes	27	2.37 (0.97-5.83)	0.059
No	160	Reference	
Number of observations in the original data set = 187. Number of observations used = 180.			

Podium #43

ANALYSIS OF SPERMATOGONIA QUANTITY IN PEDIATRIC TESTES: ESTABLISHING REFERENCE VALUES AND A CLINICAL TOOL TO EVALUATE IMMATURE TESTES

Barber Heather¹, Abinav Udaiyar¹, Demetri Hodges¹, Guillermo Galdon¹, Nima Pourhabibi Zarandi¹, Kimberly Stogner-Underwood², Shadi Qasem², Stanley Kogan^{1,3}, Anthony Atala^{1,3}, Hooman Sadri-Ardekani^{1,3}

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Presented By: Hooman Sadri, MD, PhD

Introduction: Current rapid advances in reproductive medicine have generated new ability and interest in assessing fertility potential and preservation options in pre-adolescent boys at risk of infertility. Examples are boys with cancer where spermatogonia quantity can be affected negatively by radiation and chemotherapy; boys affected by environmental toxins, as well as those with developmental or genetic disorders. In adult patients, clinical pathology scoring systems such as *Johnsen score* or *Kretser-Holsteinscore* are used to evaluate levels of spermatogenic cells in the testis. Since spermatogenesis has not been started in immature testes, these scoring systems are not applicable to pre-pubertal testes. The aim of this study was establishing a reference values and an automated clinical tool for evaluating age-related spermatogonia quantity in the testes of immature boys using a validated immunostaining system.

Methods: Our laboratory offers pediatric cancer patients an experimental option to bank testicular tissue to store spermatogonial stem cells (SSCs) for future clinical application to generate their fertility, thereby allowing opportunity to quantify spermatogonial cells in normal testes prior to exposure to gonadotoxic treatments. Patients having testicular tumors, testicular leukemic cell infiltration or gonadotoxic treatment prior to the biopsy were excluded from this study. Sections were stained with PGP9.5 (UCHL1) antibody, an undifferentiated spermatogonial marker, then scanned by NanoZoomer-XR Digital slide scanner. By using NDP.view2 Viewing software the numbers of basement and adluminal spermatogonia were counted.

Results: 48 testes were evaluated in patients ranging from 7 months to 12 years age and Tanner stages between I-IV. Average (\pm SEM) of basal spermatogonia cells/seminiferous tubule was 1.3 (\pm 0.3) and 4.2 (\pm 1.3) in boys ≥ 10 years old (peri-pubertal). Average (\pm SEM) of adluminal spermatogonia/seminiferous tubule was 0.3 (\pm 0.1) and 0.6 (\pm 0.2) in boys ≥ 10 years old respectively.

Conclusion: We established an automated clinical pathology tool to quantify spermatogonial cells in immature testes based on immunostaining. To the best of our knowledge, this is the first clinical method establishing reference values of spermatogonial cell numbers by this method and that can be used in any diagnostic pathology lab to evaluate pediatric testis biopsies in pre-pubertal boys with fertility-related conditions.

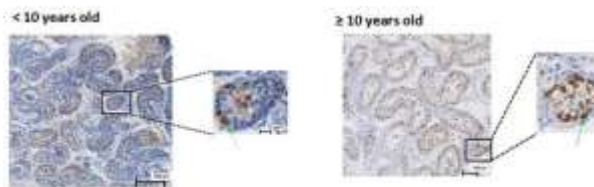


Figure 1. PGP9.5 staining of pediatric testis samples. Normal pediatric patients of 9 year old testis (Left) and a 10 year old testis (Right). BG indicates nucleus (hematoxylin staining) and brown stain indicates PGP9.5 antigens (Diaminobenzidine staining). The adluminal spermatogonia

Podium #44

HOW MANY BOYS NEED TO UNDERGO ORCHIOPEXY TO IMPACT TESTICULAR CANCER OUTCOMES?

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Presented By: Margaret Higgins, MD

Introduction: The presence of an undescended testis (UDT) adversely impacts fertility and testicular cancer (TC) risk in boys. Current American Urological Association guidelines suggest boys with an UDT undergo orchiopexy between age 6 and 18 months. The objective of this study is to determine how many boys with UDT must undergo orchiopexy to prevent one case of TC, one death from TC and one exposure to TC treatment beyond radical orchiectomy.

Methods: Data from a 2007 Swedish study of males who underwent orchiopexy for cryptorchidism between 1964 and 1999 was used (Pettersson et al.). 56 cases of TC were identified in 16,983 males. Mean age at orchiopexy was 8.6y and mean follow up was 12.4y. TC incidence for boys undergoing orchiopexy for UDT was assessed based on the age at orchiopexy (0-6y, 7-9y, 10-12y, 13-15y). The incidence of TC in each age cohort was calculated and used to determine the number needed to treat (NNT) for each age group. Two assumptions were made: 1) The risk of death from TC was estimated using surveillance, epidemiology, and end results (SEER) data (7%) and 2) The rate of exposure to additional therapy was estimated by the rate of presentation beyond stage I disease (25%).

Results: TC incidence, while low, increases with older age at orchiopexy. The NNT for each outcome is high but decreases with older age at orchiopexy. For a patient £6y, 372 boys need to undergo orchiopexy to prevent a single case of TC, 1488 boys to prevent exposure to TC therapy beyond radical orchiectomy, and 5315 boys to prevent a single TC related death. Given the rare nature of cancer development, treatment and death attributed to TC, the NNT remains high across all age categories.

Conclusion: The number of boys needing to undergo orchiopexy for UDT decreases with age. While there is evidence supporting early orchiopexy in the prevention of TC, based on data from Pettersson et al the NNT to prevent a case of TC, death from TC and exposure to TC therapy beyond radical orchiectomy is very high. This information can be used when counseling patients and families faced with cryptorchidism about their risks related to TC.

Table – Testicular cancer (TC) Incidence and Number Needed to Treat (NNT) by age category.

	Age at orchiopexy			
	0-6y	7-9y	10-12y	13-15y
TC incidence per 1000/total (# cancer cases/total patients undergoing orchiopexy)				
	5.54 (27/487)	8.33 (27/3266)	3.84 (38/9712)	8.00 (33/4125)
NNT (95% CI)				
1 case of TC	372 (375-438)	800 (225-438)	1,280 (73-214)	64 (60-348)
1 case of additional therapy for TC beyond radical orchiectomy	1,488 (1182-3485)	1,200 (888-1665)	679 (293-464)	382 (109-587)

Podium #45

OUTCOMES OF AN INTESTINAL CLEAN OUT AND MAINTENANCE (ICOM) PROGRAM IN CHILDREN WITH LOWER URINARY TRACT DYSFUNCTION

Daniel Herz, MD¹, Kelly Stokes, DNP¹, Amanda Carter, MD²

¹UT Erlanger Department of Urology, ²UT Erlanger Department of Urology

Presented By: Daniel Brandon Herz, MD

Introduction: Bladder and bowel dysfunction (BBD) represent a significant number of children evaluated by a pediatric. Anatomical and neurophysiological interactions between the bladder and bowel are well-established. BBD also presents a psychosocial burden for children and families. Therefore, timely effective treatment strategies are important. This report presents the bladder and bowel outcomes of a 3-month treatment strategy targeting bowel dysfunction ONLY in children with BBD.

Methods: Toilet trained children with BBD were entered in a 3-month prospective intestinal clean out and maintenance (ICOM) program. Children with spinal dysraphism, anorectal malformation, or lower obstructive uropathy were excluded. Child demographics, mode of presentation, associated medical history, and prior interventions were recorded. Lower Urinary Tract Dysfunction (LUTD) scores with Rome criteria and Bristol Stool Scale (RC/BSS) results were recorded at the beginning, during, and program end. Initial bladder scan PVR was recorded. Abdominal x-ray (AXR) was obtained initially and at 8 weeks. Uroflow/PVR was performed at 8 weeks. Quality of life (QoL) score using the Pediatric Incontinence Quality-of-Life questionnaire (PinQ) was recorded initially and program end. The ICOM program consisted of a 2-day intestinal clean out with combination osmotic and stimulant laxatives followed by a 3-month maintenance program with progressively de-escalating laxative doses and frequency. Follow-up was continued for 2 years.

Results: Of the 777 entered, 692 children completed the program and were analyzed. Of these, 201 (29%) were male and 491 (71%) female. Ages were 2.8 to 14.5 years (Mean = 6.4 years). Presentation was recurrent UTI (rUTI) in 284 (41%) and lower urinary tract symptoms (LUTS) in 408 (58%). There was associated encopresis in 221 (32%), urinary incontinence in 533 (77%), VUR in 145 (21%), and hematuria in 76 (11%). Mean LUTD/DES score was 22 (range 12-29). RC/BSS results were positive in 506 (73%). After ICOM program alone, LUTD/DES symptom scores significantly reduced in 471 (68%), QoL scores significantly reduced in 265 (38%), and LUTS resolution occurred in 291 (42%). Mean follow-up was 33 months (range = 24-45).

Conclusion: Aggressive initial management if bowel dysfunction alone will render the majority of children significantly less symptomatic and will save almost half the need for any bladder related medications or interventions.

Podium #46

OPIOID PRESCRIBING AND USAGE TRENDS IN PEDIATRIC UROLOGY

Brandon Garren, MD¹, Marley Lawrence, MD², Peggy McNaull, MD², Richard Sutherland, MD¹, Matthew Nielsen, MD¹, Timothy Bukowski, MD¹, Nathan Woody, CSSBB², Clark McCall, MHA², Karene Ricketts, MD², Brooke Chidgey, MD², Sherry Ross, MD¹

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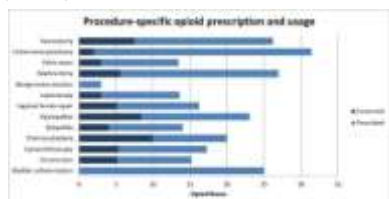
Presented By: Brandon Garren, MD

Introduction: Emerging research on surgeons and the opioid epidemic have focused on the adult population. Consequently, little is known regarding opioid prescribing practices in the pediatric population. As surgical providers and consequentially opioid prescribers, we are poised to impart potentially substantial short and long-term effects in our children. The goal of this study is to examine postoperative opioid prescribing patterns in specific pediatric urologic procedures.

Methods: After University of North Carolina IRB approval, common CPT codes for the most prevalent pediatric urology surgical procedures were obtained. Patients undergoing surgery associated with specified CPT codes were identified and details regarding opioid medications prescribed for postoperative pain were obtained through our pharmacy database. Patients' guardians were contacted two weeks postoperatively to determine opioid usage. Opioids were prescribed at a standard dosing of 0.1 mg/kg per dose or the equivalent.

Results: We gathered prescribing data on 117 pediatric urology patients, incorporating

approximately 13 different procedures. The 3 most common pediatric urology procedures were inguinal hernia repair (N = 39), circumcision (N = 27), and cystoscopy (N = 16). The average opioid doses prescribed for each procedure were 11.13 (STD = 4.51), 10.11 (STD = 4.15), and 11.93 (STD 3.32), respectively. Consumption data were available for 48 patients. The average opioid doses consumed for the corresponding procedures were 5.10, 5.10, and 5.33. Across all procedures, there was an average excess of 9.79 doses prescribed, corresponding to an over-prescription rate of 64%.



Podium #47

J. Margaret Lovin, MD¹, Alayna Dautzat¹, Emily F. Kelly, Lindsey Leeper, RT, ARDMS¹, Clifton F. Fritolli, PhD², John A. Mata, MD¹

Presented By: J. Margaret Lovin, MD

Methods: After IRB approval, we retrospectively reviewed the records of boys, aged 6 months to 18 years, who presented with non-palpable cryptorchid testes from 2011 and 2018 to our institution. We excluded those with disorders of sexual development and boys with cryptorchid testes at birth that descended by 6 months. All underwent pre-operative US and subsequent surgical intervention. We reviewed clinic notes, US images, and operative reports for pertinent information.

Conclusion: Our data suggests that high-resolution Doppler US and a dedicated GU team may improve diagnostic accuracy of testicular localization and guide surgical planning in patients with non-palpable, cryptorchid testes. Using this approach, we avoided laparoscopy in over 50% of boys.

Podium #48

PRELIMINARY RESULTS OF DIFFUSION TENSOR IMAGING IN PEDIATRIC SPINA BIFIDA PATIENTS

Ching Man Carmen Tong, DO¹, Bryson Reynolds, PhD², Seth Smith, PhD², Aashim Bhatia, MD³, Sam By, PhD², Quinn Weinberg, BS², Atlee Witt², John Brock III, MD¹, John Pope, MD¹, John Thomas, MD¹, Stacy Tanaka, MD¹, Douglass Clayton, MD¹, Mark Adams, MD¹

¹Department of Pediatric Urology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN,

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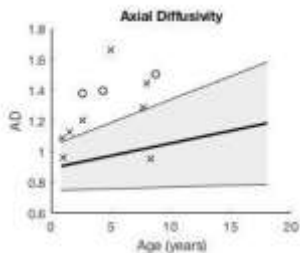
Presented By: Ching Man Carmen Tong, DO

Introduction: Diffusion tensor imaging (DTI) is a novel MRI technique that allows for visualization of white matter architecture and integrity by measuring diffusivity of water molecules in white matter fibers. While conventional MRI is limited by spatial resolution and contrast and produces only cross-sectional images, DTI utilizes diffusion restrictions to produce superior three-dimensional microstructural imaging with quantitative anisotropic data. Because applications to pediatric spinal cord pathology have never previously been described, we performed an exploratory analysis to determine the clinical utility of this novel technology in children, particularly those with tethered cord or spina bifida (SB). We hypothesize that DTI diffusion parameters would vary significantly between patients with stable versus worsening videourodynamic findings in the pediatric SB population.

Methods: We retrospectively reviewed our IRB-approved registry of children who underwent conventional anatomical and DTI acquisitions at our tertiary care center from 10/2016 to 7/2018. The diffusion tensor was processed with Camino software using a nonlinear fit and molecular diffusion rates, directional preference of diffusion and directional diffusivity were calculated. Statistical comparisons were made using Wilcoxon rank-sum test assuming nonparametric distribution.

Results: Of the 247 patients (mean age 7.9 years, range 0.3-18 years) who underwent DTI scans during the study period, 99 controls with normal conventional MRI findings within the thoracolumbar region of the spinal cord were identified and age-matched to 11 SB children with accompanying VUDS (fig. 1). 3/11 children had worsening VUDS (circles) while 8/11 children had stable VUDS (black x). Median values for patients with worsening or stable VUDS were significantly different compared to the control cohort for axial diffusivity, the diffusion rate along the main axis of diffusion (1.40 vs. 0.98, $p=0.03$ and 1.17 vs. 0.98, $p=0.04$ respectively).

Conclusion: We demonstrated differences in diffusion parameters, specifically axial diffusivity, in SB patients compared to patients with normal conventional MRI findings, suggesting that DTI may be a useful adjunctive tool to track neurological changes in the pediatric spinal cord, such as tethered cord in this vulnerable population. Future studies with larger cohorts will define the utility of other DTI parameters as imaging biomarkers to identify worsening neurological pathologies.



Podium #49

SURGICAL MANAGEMENT OF PEDIATRIC RENAL MASSES: NATIONAL DATABASE REVIEW OF INCIDENCE AND OUTCOMES BY SURGEON SPECIALTY AND SURGICAL MODALITY

Patrick Hensley, Amanda Saltzman, Megan Stout, Ali Ziada

Department of Urology, University of Kentucky College of Medicine

Presented By: Patrick Hensley, MD

Introduction: Pediatric renal masses are managed by pediatric surgeons (PS), pediatric urologists (PU) and adult subspecialists depending on institutional availability and tradition. Management has lagged behind adults in adopting minimally invasive surgery (MIS) and nephron-sparing surgery (NSS) likely due to pediatric protocol requirements and physician training. Prior work using the Pediatric Hospital Information System database has shown that PU are more likely to perform MIS and NSS than PS. This study sought to verify these findings using a different dataset.

Methods: The Pediatric National Surgical Quality Improvement Program database was queried for CPT codes corresponding to radical or partial nephrectomy from 2012-2015. Cases of renal malignancy were filtered using ICD-9 code and designation of malignancy in the database. Demographic and clinical information were abstracted. Patients were grouped by surgeon specialty (PU vs. PS). Proportions were compared using Chi-square and Fisher's exact tests and continuous variables using the student t-test.

Results: 564 patients met inclusion criteria. PU managed 87 (15%) patients while PS managed 451 (80%). PU were more likely to use MIS (8% vs. 3%, $p<0.001$) and NSS (30% vs. 10%, $p<0.001$) compared to PS. There was no difference with respect to concomitant lymphadenectomy/tumor thrombectomy, operative time or length of stay between surgical subspecialty. Patients treated by PS were younger (4.2 vs. 5.5 years, $p=0.003$) and had higher ASA class (3+, $p<0.001$) compared to PU. Post-operative complications were rare ($<1\%$) and comparable between the subspecialties. PS more commonly performed concomitant central venous access surgery (35% vs. 7%, $p<0.001$) while PU more commonly performed concomitant cystoscopy/retrograde pyelography (6% vs. $<1\%$, $p=0.002$).

Conclusion: PU treat a minority of pediatric renal masses. PS more commonly perform concurrent central venous procedures, which may impact referral from oncology. As previously reported, the trend of PU performing more MIS and NSS for renal malignancy in children was verified using a different population. Further investigation into these advanced techniques is necessary to draw conclusions on oncologic and clinical outcomes.

Podium #50

IMMUNE EXPRESSION IN CHILDREN WITH WILMS TUMOR

Ashley W. Johnston, MD¹, Stephanie J. Sexton, MD¹, Jonathan C. Routh, MD, MPH¹, Smita K. Nair, PhD², Eda K. Holl, PhD²

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Presented By: Ashley W. Johnston, MD

Introduction: Given improvements in multimodality therapy, survival among children with Wilms tumor (WT) exceeds 90%. However, 15% of children with favorable WT and 50% of children with anaplastic WT experience recurrence or progression. Of these patients with advanced disease only 50% survive to adulthood. In adult malignancies including renal tumors, survival has improved with the advent of immunotherapy. Little is known regarding the immune microenvironment of WT. Our objective was to perform an exploratory, descriptive analysis of the immune milieu in WT.

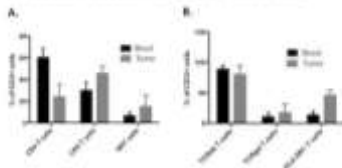
Methods: Between 2016 and 2017, all pediatric patients with WT underwent *ex vivo* wedge biopsy following their nephrectomy. The fresh tumor tissue and serum, also collected at the time of surgery, were enzymatically digested to analyze the tumor infiltrating immune infiltrate and effector cells using flow cytometry. Immunohistochemistry was also performed for CD4, CD8, and PD-L1 expression.

Results: A total of 6 patients were enrolled from our institution. One patient with primary renal neuroblastoma was excluded. The 5 patients (mean age 3.5 years, 3 females/2 males) included: 2 with unilateral WT (resected prior to chemotherapy), 2 with bilateral WT (resected

after neoadjuvant chemotherapy), and 1 with Denys-Drash syndrome, end-stage renal disease, and a distant history of WT in the contralateral kidney enrolled as a control. Immune analysis showed that WT were infiltrated by immune cells both prior to and following chemotherapy. The prominent T cell subtype in the blood were of CD4 origin. Conversely, CD8 were the dominant subtype in tumor tissue (**Figure 1.A**). Compared to the blood, there were elevated levels of NK cells infiltrating the tumor specimens. Unlike the predominantly alpha-beta TCR T cells found in the blood, 33% of the T cells infiltrating the tumors were positive for TCR gamma-delta receptors, a more active phenotype (**Figure 1.B**).

Conclusion: These pilot data suggest an inflammatory tumor microenvironment is present within WT. This implies that WT may be susceptible to immunotherapy similar to adult renal tumors and other adult malignancies. Follow-up studies are currently underway.

Figure 1. Immune Cell Counts Within Tumor Tissue vs. Blood



Podium #51

A PROSPECTIVE STUDY TO DETERMINE BIOFEEDBACK SUCCESS AND EVALUATING PREDICTORS OF OUTCOMES IN THE PEDIATRIC UROLOGY PATIENT POPULATION

Shuvro De, William French, Abby Taylor, Chelsea Lauderdale, Mark Adams, John Brock, III, John Thomas, John Pope, IV, Stacy Tanaka, Chevis Shannon, Douglass Clayton
Monroe Carell Jr. Children's Hospital at Vanderbilt University Medical Center
 Presented By: Shuvro De, MD

Introduction: Based on results of a retrospective review our biofeedback (BFB) program, we initiated a prospective study of a standardized protocol of BFB to determine predictors of success in patients with non-neurogenic lower urinary tract (LUT) complaints. We hypothesized that three sessions of BFB would lead to objective improvement in voiding symptom scores, quality of life measures, and voiding parameters in patients with LUT complaints.

Methods: We identified patients 5 years and older with non-neurogenic LUT complaints. If symptoms were unresolved with standard urotherapy, uroflowmetry (UFS) or urodynamic studies were performed. Patients underwent at least 3 sessions of BFB within a 3 month period. At each visit, we obtained Vancouver Symptom Scores (VSS) and standardized voiding assessments. At the initial and final biofeedback visit, we administered the PedsQL instrument to both the patient and parent. After 3 sessions, a successful outcome was defined as patient-perceived improvement of symptoms with no additional therapy sessions recommended.

Results: We identified 26 patients with mean age 9.0 ± 2.6 years (25/26 females and 24/26 Caucasian). Sixteen (62%) patients successfully responded after 3 BFB sessions, 8 (31%) partially responded and were prescribed additional sessions, and 2 (7%) were non-responders. Initial and follow-up mean VSS were 17.2 ± 6.4 and 15.2 ± 2.1 , respectively. Initial VSS or the change in VSS did not correlate with BFB success. Patient-reported PedsQL psychosocial scores significantly improved after therapy (initial 75.0 ± 13.3 vs follow-up 84.8 ± 12.6 , $p < 0.03$). Neither initial patient nor parent-reported PedsQL scores predicted response to therapy. Comparing initial to final voiding parameters, no significant change was noted in maximum flow rate, voiding efficiency, or post-void residual. EMG activity during voiding was present in 24/26 (92%) patients initially and in 17/26 (65%) patients at final visit ($p < 0.01$). Initial voiding parameters or indication for BFB were not predictive of BFB response.

Conclusion: A need for standardized approach to assess outcome in patients undergoing BFB is warranted. We found that subjective and objective measures of voiding function were not predictive of BFB success. Overall, 92% patients had at least a partial response to BFB therapy determined by patient perceived improvement; however, this success was not reflected in VSS or PedsQL scores.

Podium #52

REPAIR OF PENOSCROTAL WEBBING UNDER LOCAL ANESTHESIA DURING INFANCY

Luis Perez¹, Winifred Owumi¹, Judy McLendon²

¹Atrium and Novant Health, ²Children's Urology of Carolinas

Presented By: Luis Manuel Perez, MD

Introduction: Penoscrotal webbing (congenital condition in which the scrotal skin extends onto the ventral penile shaft resulting in tethering and retraction of penis) with or without penile concealment during infancy has been surgically managed by most pediatric urologists under general anesthesia. In 2003, we set out to determine if the surgical correction of penoscrotal webbing can be performed safely and successfully under local anesthesia at the time of the infant circumcision.

Methods: A retrospective review was completed of our 15 year (2003-2017) experience of all penoscrotal webbing repairs performed under local anesthesia at the time of infant Plastibell circumcision. The technique has been modified over our 15 year experience and will be described in detail. Battery run Bovie cautery and absorbable horizontal mattress sutures were used to create the neo-median raphe. Patients were seen 2 weeks post-operative and within 6 months thereafter. Phone review of the results was performed between 6 months to 14 years post-procedure.

Results: There were a total of 1608 penoscrotal webbing repair cases over the 15 year span which represented 3.9% of all circumcisions performed by our service. The overall long-term cosmetic satisfaction rate was 86%. In 10% of the cases minor adjustments to the repair were performed during the 2 week check which included excision of skin tags and suture tracts. Less than 5% of patients required surgical revision under general anesthesia, mostly for correction of significant penile concealment.

Conclusion: We believe that repair of the penoscrotal webbing under local anesthesia at the time of infant circumcision is a satisfactory method with favorable outcome. Furthermore, we believe it is a preferable alternative in most infants in order to avoid the health risks and cost associated with general anesthesia.

Podium #53

CALCIUM OXALATE DISSOLUTION AGENT AS AN IRRIGANT DURING URETEROSCOPIC STONE DUSTING: EFFICIENCY AND TOXICOLOGIC ANALYSIS

Michelle Dill¹, Rachel DeNapoli, BME BS², Steven Arce, PhD¹, Victoria Bird, MD³

¹BME University of Florida, ²BME University of Virginia, ³NMARG, Urology Division

Presented By: Michelle Dill

Introduction: The prevalence of nephrolithiasis has increased to 10.6% and 7.1% in 2010 from 6.3% and 4.2% in 1994 in males and females, respectively. Treatment methods include ureteroscopy with laser lithotripsy and stone fragment basket retrieval. Dusting is used to break the stone into very small fragments which are left in the renal pelvis and calices and can contribute to patient discomfort, stone recurrence, and potential further related procedures. Our aim is to develop a biosafe dissolution agent for calcium oxalate calculi fragments.

Methods: Our dissolution agent: $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$ is derived from the following equation: $3\text{CaC}_2\text{O}_4(s) + 2\text{Na}_3\text{C}_6\text{H}_5\text{O}_7(\text{aq}) \leftrightarrow \text{Ca}_3(\text{C}_6\text{H}_5\text{O}_7)_2(\text{aq}) + 3\text{Na}_2\text{C}_2\text{O}_4(\text{aq})$. This reaction forms two soluble salts. EDTA in a biosafe range of 700 ppm, was added to further increase dissolution. The dissolution agents were incorporated in varying quantities and tested with calcium oxalate (200 microns) crystal fragments. Dissolution was noted over time with a light microscope. Resulting images were analyzed via MATLAB software to quantify percent dissolution over time. Transitional cell epithelium cultured cells (T24 cell lines) were used to test the cytotoxicity of the dissolution agents. Presto Blue was used to quantify metabolic activity of cells after 30 minutes and 24 hours post exposure. Fluorescence readings at 590 nm were corrected and normalized by cell count. Percent viability was determined considering controls as having 100% viability.

Results: Decrease in crystal size over time (<5 microns) following submersion in solutions of varying sodium citrate and EDTA concentrations were observed when compared to controls. Optimal results were obtained with sodium citrate 100 mM and EDTA 8.3 mM rinse solution, which resulted in a 91% decrease in crystal size in 15 minutes. Cell viabilities after 30 minutes of exposure and 24 hours post exposure to this rinse solution and a 100mM/1.66mM

citrate/EDTA solution were optimal, with viabilities that were greater than the control based on cell count, suggesting that the cells immediately recover after a lengthy direct exposure to rinse solutions.

Conclusion: It is possible to use sodium citrate and EDTA as dissolution agent for calcium oxalate fragments with low toxicity potential. Future studies, testing thermodynamic reactions and toxicity in vitro/vivo models will be performed to maximize efficiency and safety.

Podium #54
AVOIDING A LEMON: PERFORMANCE CONSISTENCY OF SINGLE-USE URETEROSCOPES

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Duke University Division of Urology
Presented By: Brenton Winship, MD

Introduction: Single-use flexible ureteroscopes are increasingly popular due to repair costs and sterilization concerns of reusable scopes. However, as new single-use scopes enter the market, the consistency of performance of these devices has been questioned. Our objective was to compare two digital single-use ureteroscopes: the PU3022a (Zhuohai Pusen) and the LithoVue (Boston Scientific) with emphasis on performance consistency between scopes regarding tip deflection, optical resolution, irrigation flow, laser interference and performance after extended use.

Methods: 10 LithoVue and 10 Pusen scopes were evaluated in new, never-used condition. The following parameters were recorded: maximal tip deflection in both directions with an empty working channel, a 200nm laser fiber, and a 1.9fr basket; image resolution by viewing a 1951 USAF test pattern card at 10, 20, and 50mm distances; irrigation flow rate at 50cm/H2O; and blinded review of videos during laser lithotripsy for image interference. All scopes were then deflected fully in each direction for 200 cycles. Maximum tip deflection was re-measured. Mean values for each parameter were compared using T-tests. To examine within-manufacturer consistency, the variance for each parameter was calculated and an F-test performed to evaluate the equivalence of the variances.

Results: Both scopes provided a max deflection of over 270° in both directions. The Pusen scope had significantly greater flexion than Lithovue (Table). However, the Pusen scope lost a significantly greater degree of deflection with a laser fiber in the working channel. Lithovue had significantly higher resolution at 10mm, but the scopes were similar at 20 and 50mm distances. Irrigation flow was significantly higher with the Pusen scope, however the Pusen working channel is 7cm shorter than the Lithovue (74.0 vs 81.3cm). Minimal laser- image interference was noted with either scope. After 200 full deflections, all scopes had reduced maximum deflection angle. LithoVue had significantly less deflection loss, although one scope failed at 160 deflections and was excluded from analysis (Table). Variability between scopes was minimal and not statistically significant between manufacturers at all measured parameters.

Conclusion: LithoVue and the newer PU3022a have similar "out- of-the-box" performance characteristics and appear durable despite their single-use nature. These two single-use flexible ureteroscopes performed consistently regardless of manufacturer.

Table 1: Consistency Evaluation of Lithovue and PU3022a Single-Use Ureteroscopes				
	Pusen PU3022a (n=10)	10x LithoVue (n=10)	P Value	F Test
Mean max tip deflection	279.1 ± 0.5°	262.5 ± 0.6°	0.0004	0.72
Mean tip deflection loss: 200mm laser	15.0 ± 4.2°	6.9 ± 3.3°	0.0006	0.54
Mean tip deflection loss - 1.8fr basket	2.0 ± 5.2°	4.6 ± 5.1°	0.101	0.56
Resolution at 10mm (line/mm)	0.3 ± 0.3	0.6 ± 0.3	<0.0001	0.02
Resolution at 20mm	0.3 ± 0.3	0.6 ± 0.3	0.09	0.99
Resolution at 50mm	0.2 ± 0.3	0.2 ± 0.3	0.55	0.80
Completion time (sec/min)	10.2 ± 0.3	16.3 ± 0.2	<0.0001	0.08
Post 200 cycles: Mean tip deflection	263.8 ± 15.0°	257.0 ± 4.5°	0.405	0.30
Post 200 cycles: tip deflection loss	15.3 ± 15.3°	11.0 ± 10.3°	0.002	0.93

* Note: 1 10x scope failed at 160 deflections and is excluded from post 200 cycles analysis

Podium #55

URIC ACID NEPHROLITHIASIS: LONG-TERM METABOLIC AND CLINICAL OUTCOMES

Brandon Otto, MD, Benjamin Canales, MD, Nitin Sharma, MD, Shahab Bozorgmehri, MD, PhD, Vincent Bird, MD

University of Florida

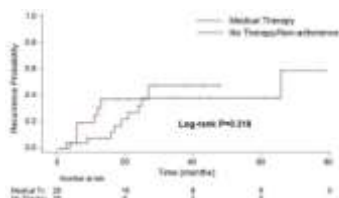
Presented By: Brandon J. Otto, MD

Purpose: Despite rising prevalence of uric acid (UA) nephrolithiasis, longitudinal studies have not been performed to examine long-term metabolic and clinical outcomes in these individuals.

Methods: We retrospectively identified all UA stone formers (SF) deemed stone free by computed tomography (CT) after a stone procedure and grouped them by %UA stone composition: 30-89% (mixed), 90-100% (pure). Baseline demographics and metabolic evaluations were documented. Outcomes in patients who had ≥ 6 month CT imaging and follow-up were recorded, including medication adherence, dipstick urine pH, stone recurrence, and need for surgical stone intervention.

Results: Inclusion criteria was met in 113 UASF (52% pure; 48% mixed). At a median of 24 months, 53/113 (47%) UASF maintained follow-up. Of these, 28/53 (53%) elected medical therapy, 14 (26%) elected dietary therapy without medication, and another 11 (21%) were either intolerant or non-adherent to medical therapy. Over study duration, those without medical therapy (n=25) had similar urine pH and stone recurrence rates as adherent patients (n=28, Figure), regardless of %UA composition. Adherent patients, however, had smaller CT stone recurrences (6.3 ± 3.8 vs 11.8 ± 6.2 mm, $p=0.02$), longer time intervals without stone recurrence (23.1 ± 18.8 vs 10.5 ± 7.5 months, $p=0.10$), and were less likely to require stone surgery compared to those without therapy (0% versus 28%, $p<0.01$).

Conclusion: In our UASF cohort, adherence to medical therapy did not result in urine pH differences but did result in smaller stone recurrence size and a decreased need for surgical interventions compared to those without therapy. These findings highlight the protective role of potassium citrate in stone disease and areas for improvement in UA stone prevention strategies.



Podium #56

A COMPARISON OF PATIENT DESIRED OUTCOMES BETWEEN PAIN AND NON-PAIN-FOCUSED PATIENTS FOLLOWING NEPHROLITHIASIS SURGERY

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Presented By: Nicholas Burke Koch

Introduction: Renal colic is one of the most common and concerning complaints in patients with symptomatic kidney stones. While treatment of an obstructing stone can offer relief, overall pain symptoms in stone patients may be multifactorial. The patient perspective historically has been less considered in the evaluation of treatment outcomes in kidney stone surgery. The Patient Centered Outcomes Questionnaire is a validated tool developed for the investigation of patient perspectives in chronic pain. Using a modified PCOQ, we investigated the difference in patient defined outcomes in pain and non-pain focused patients following stone surgery.

Methods: Fifty patients undergoing stone surgery participated in a longitudinal assessment by completing a modified, stone-specific Patient Centered Outcomes Questionnaire (sPCOQ) prior to surgery and at their standard 6-8 week postoperative follow-up. Patients' expected,

desired, and success levels were determined across 8 domains specific to stone disease. Responses were then compared between pain-focused and non-pain-focused patient subgroups in the domain of pain.

Results: Patient responses suggest pain-focused patients required a larger reduction in symptoms to meet their defined outcome criteria for desired, expected, and successful outcome levels. Pain-focused patients were associated with significantly lower desired and expected post-surgical pain levels than non-pain-focused patients. Overall, all patients had a significant improvement in pain symptoms following surgery. However, patients who rated pain as their number 1 domain for success were significantly less likely to reach their expected outcome level for pain ($p < 0.05$). Prior history of kidney stones was significantly higher in the pain-focused population. Patients reported no significant change in outcome criteria before and after surgery.

Conclusion: The sPCOQ provides a valuable tool in assessing patient perspectives in treatment outcomes for pain symptoms in kidney stone patients undergoing surgery. Pain-focused patients have stricter criteria for desired, expected, and successful outcomes following kidney stone surgery. Additionally, they are less likely to reach their treatment goals. This suggests pain-focused patients could require more attention and counseling regarding treatment outcomes and expectation management. Neither pain nor non-pain-focused patients were found to adjust their successful outcome levels throughout the treatment timeline.

Podium #57

RATE OF OPIOID PRESCRIPTION REFILLING FOLLOWING UROLOGIC STONE SURGERY

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Presented By: Mohammed Adnan Said, MD

Introduction: Recent studies have shown that opioid prescribing in the postoperative setting remains a significant source of opioids in the community. More specifically, they have demonstrated that there is considerable variability in the amount prescribed after routine procedures and that patients generally use much less opioid medication than they are prescribed. Defining the minimum number of opioids that can be supplied without an increasing rate of refill following surgery may help standardize opioid prescribing guidelines and reduce the excess supply of opioids. Thus, we attempted to determine the correlation between the rate of postoperative opioid prescription refills and the amount of opioid prescribed.

Methods: We studied insurance claims from the Truven MarketScan database to identify opioid-naïve patients (no opioid exposure 12 months-6 days before surgery), age 18-64, who underwent shockwave lithotripsy (SWL), ureteroscopy (URS), or percutaneous nephrolithotomy (PCNL) between 2009 and 2015. Our primary outcome was the occurrence of an opioid refill between 6-31 days postoperatively after receipt of a single perioperative prescription within 5 days before to 5 days after surgery. Our primary explanatory variable was the total oral morphine equivalents (OMEs) provided in the initial postoperative prescription. We used logistic regression to examine the probability of an additional refill by initial prescription strength, adjusting for patient factors.

Results: Among 23,749 opioid-naïve patients, 79% filled a perioperative opioid prescription. The median initial perioperative prescription was 225 OMEs for all surgery types. 10% of patients refilled their prescriptions. Across procedures, the probability of a postoperative refill did not change with increasing initial OMEs prescribed. Patients undergoing PCNL were more likely to require a refill (OR 1.42, 95% CI 1.02-1.97). History of mental health and pain disorders trended toward association with refill (OR 1.14, 95% CI 1.00-1.30) and (OR 1.10, 95% CI 1.00-1.20) respectively.

Conclusion: The rate of opioid prescription refill after urologic stone surgery was not correlated with initial prescription strength. Given the lack of impact of initial OMEs prescribed on the rate of refill clinicians could begin patients on a lower initial prescription to decrease the potential for leftover pills in the home, diversion of those drugs elsewhere, or chronic opioid use.

ASSESSMENT OF ACUTE KIDNEY INJURY RISK IN PATIENTS UNDERGOING PERCUTANEOUS NEPHROLITHOTOMY

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Presented By: Andrew Rabley, MD

Results: Mean age was 56±15 years, 51% were females, and 74% were Caucasian. Overall prevalence of AKI was 28.4% (60/211). On univariate analysis, the prevalence of AKI was associated with BMI ($p = 0.036$), advanced age ($p 0.02$), and a preoperative history of cerebrovascular disease ($p = 0.025$) or chronic pulmonary disease ($p = 0.039$). Other comorbidities evaluated (Table 1) were not found to be significant. ROC analysis yielded an AUC of 0.80 (95% CI of 0.70-0.90) for our regression model. When evaluating outcomes, patients with AKI were more likely to develop postoperative complications ($p < 0.001$), have longer length of stay ($p < 0.001$), and higher mortality at 6 and 12 months ($p = 0.037$).

Conclusion: Among patients undergoing PCNL, obesity, advanced age, cerebrovascular disease, and chronic pulmonary disease were associated with higher risk of developing postoperative AKI. AKI following PCNL is associated with a higher rate of post-operative complications, longer hospital stay, and mortality. Therefore, it is important identify patients at high risk for postoperative AKI so that early interventions can be initiated to decrease their risk of AKI and improve outcomes.

Table 1. Clinical characteristics and outcomes of T1D patients with level 1 blood A1C

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Podium #60

IDENTIFYING A BREAK IN THE CHAIN: AN ANALYSIS OF URETEROSCOPE DAMAGE IN THE HOSPITAL CYCLE

Margaret Higgins, Jason Bylund, John Roger Bell, Andrew Harris, Amul Bhalodi

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Presented By: Margaret Higgins, MD

Introduction: Flexible ureteroscopy is an important modality in the treatment of benign and malignant conditions of the upper urinary tract. While the durability and versatility of flexible scopes have increased considerably, repair costs remain high and time out of commission slows work. Our institution experienced damage to 75 flexible ureteroscopes (fURS) in a 27-month timespan. After purchasing new digital fURS, we studied how and when these instruments were being damaged. Our study aimed to assess the timing and variables associated with damage to fURS at our institution.

Methods: Between Sept. 1, 2017 and Jun. 30, 2018 we performed leak testing on fURS both before and after use. We gathered intraoperative data, including resident level, surgical indication, laser time, laser energy, and disposable tools used in all cases that employed a digital or fiber optic fURS. The manufacturer additionally provided us with details of each fURS repair in order to better understand the cause. Categorical and continuous variables were analyzed to identify risk factors for intraoperative fURS damage.

Results: During the study period, complete data was gathered for 247 cases. Twenty-one fURS failed leak testing indicating an overall leak failure rate of 8.5%. Of these, 14 failed leak testing preoperatively indicating non-operative damage occurring sometime during transport, handling, or sterile processing. The other 7 failures occurred during the procedures. The intraoperative failures were associated with larger stone burden (14.5mm vs. 10mm, p-value=0.08) and higher energy (5.9kJ vs. 0.4kJ, p-value=0.09).

Conclusion: Our institutional leak failure rate is 8.5% (21/247). The majority of these failures did not occur during surgery. Of the seven that occurred during surgery, larger stone burden and higher wattage appeared to be a factor. We are continuing to study how the non-operative failures occur and how these can be minimized.

Variable	Mean	SD	p-value
Age	73.3	10.1	
Sex	0.48	0.5	
Resident Level	0.48	0.5	0.001
Indication	0.48	0.5	0.001
Laser Time	0.48	0.5	0.001
Laser Energy	0.48	0.5	0.001
Disposable Tools	0.48	0.5	0.001
Stone Burden	0.48	0.5	0.001
Leak Test	0.48	0.5	0.001
Failure	0.48	0.5	0.001
Pre-op	0.48	0.5	0.001
Intra-op	0.48	0.5	0.001
Post-op	0.48	0.5	0.001
Overall	0.48	0.5	0.001
Mean	0.48	0.5	
SD	0.5		
p-value	0.001		

Table 1. A summary of the study data showing variables and their associated values and p-values. All categorical variables were analyzed using Fisher's exact tests and continuous variables were analyzed using Mann-Whitney U tests. All p-values are two-tailed. All p-values are less than 0.05.

Podium #61

CAN ROUTINE POST-OPERATIVE DRAINS AND LABORATORIES BE ELIMINATED FOLLOWING ROBOTIC ASSISTED LAPAROSCOPIC PYELOPLASTY?

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Mayo Clinic Florida

Presented By: John R. Moore, MD

Introduction: Robotic assisted pyeloplasty (RAP) is the standard of care for ureteropelvic junction obstruction (UPJO). Patients undergoing RAP commonly have a surgical drain placed at the time of surgery and labs are checked in the immediate post-operative period. We hypothesize that both the routine placement of surgical drains and checking post-operative labs can be safely omitted.

Methods: A retrospective review was performed of 48 consecutive patients that underwent RAP by a single surgeon. All patients had ureteral stents and a Jackson-Pratt (JP) drain placed at the time of surgery. A complete blood count (CBC), basic metabolic panel (BMP), and quantitative drain creatinine analysis of the JP drain fluid was performed on post-operative day 1 (POD1). Analysis was performed to determine statistical differences between preoperative laboratory results and POD1 laboratory values. JP drain fluid creatinine was compared to serum creatinine to determine a drain creatinine/ serum creatinine ratio. These values were correlated with the need for further clinical intervention.

Results: Mean age of the patients was 51 years old (16-88 years old) with a mean BMI of 26.6 kg/m² (15.4 – 39.7 kg/m²). Mean hospital stay was 1.9 days (1-3 days). Mean change in serum sodium was 2.1 mmol/L (0-9 mmol/L), potassium 0.27 mmol/L (0 – 1.3 mmol/L), creatinine -0.05 mmol/L (-0.5 – 0.2 mmol/L) and hemoglobin -1.39 g/dl (-1.8 – 3.6 g/dl). Mean drain creatinine/serum creatinine ratio was 1.04 mmol/L (0.75 – 1.83 mmol/L). Two patients had ratios > 1.5 (1.6 and 1.83), but drains were removed secondary to low drain output. All patients had drains removed on POD1. No patients required further intervention based on JP drain output, JP drain creatinine / serum creatinine ratio, or POD1 labs. No patients received electrolyte repletion, dialysis, or transfusion or had electrolyte values change from the normal range to an abnormal range.

Conclusion: POD1 labs and JP drain placement can be safely omitted on patients undergoing RAP. Neither intervention yields a clinical benefit or changes patient management.

Podium #62

COST AND UTI RATE FOLLOWING OFFICE CYSTOSCOPY BEFORE AND AFTER IMPLEMENTING NEW STANDARDIZED HANDLING AND STORAGE PRACTICES

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¹University of Florida, ²University of South Florida

Presented By: Benjamin Kirk Canales, MD, MPH

Introduction: In 2011, our facility transitioned from sterile to high-level disinfection (HLD) reprocessing of flexible cystoscopes following an AUA white paper that endorsed both as acceptable practices. Our objective was to examine the effect of this change by evaluating cost and symptomatic UTI rates before and after implementation.

Methods: We retrospectively reviewed 30-day outcomes following 1,888 simple cystoscopy encounters that occurred from 2007-2010 (sterile conditions; n = 905) and 2012-2015 (HLD conditions; n = 983) at the Malcom Randall VA. We excluded patients who had recent urologic instrumentation, active or recent UTI, performed intermittent catheterization, or had complicated cystoscopy (dilation, biopsy, etc). Procedural indications, patient demographics and comorbidities, prophylactic antibiotic use, post-procedural complications, and reprocessing costs were collected and compared between groups. Statistical significance between groups was assessed using Fisher's exact test.

Results: Both cohorts were predominantly Caucasian (82.5%) with mean age 68±10.5 years. Most common indications were cancer surveillance (50%) and hematuria (34%). Common comorbidities included a history of cancer (62%), type 2 diabetes mellitus (36%), and tobacco use (24.5%). Across both cohorts, overall rate of urological complications was 1.43%. Reported UTI events occurred in 9/905 (0.99%) of sterile and 5/983 (0.51%) HLD group (p = 0.29). Unplanned clinic/ED visits occurred in 6/905 (0.66%) of sterile and 7/983 (0.71%) HLD groups. Prophylactic antibiotics, most commonly fluoroquinolones (91%), were prescribed in over 99%

of both cohorts. HLD was significantly cheaper (\$82.32) per procedure than sterile conditions with the majority of cost disparity stemming from reprocessing. Total annual savings by switching to HLD was ~\$101,000 for our facility.

Conclusion: In our older, highly morbid veteran population receiving centralized care and prophylactic antibiotics, we found no difference in UTI rate between sterile and HLD techniques. HLD comes with a sizable cost savings, easier scope access/storage, and easier procedure preparation. The UTI rate of 0.79% is the lowest post-procedural UTI rate ever reported in the literature, perhaps due to pervasive prophylactic antibiotic use.

Podium #63

UTILIZATION OF PSYCHIATRIC RESOURCES PRIOR TO GENITOURINARY (GU)

CANCER DIAGNOSIS: IMPLICATIONS FOR SURVIVAL OUTCOMES

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¹Augusta University - Medical College of Georgia, Augusta, GA, ²Georgia Cancer Center, Augusta, GA, ³University of Toronto, Toronto, ON, Canada, ⁴Thomas Jefferson University Hospital, Philadelphia, PA, ⁵University of Texas Medical Branch, Galveston, TX, ⁶Vanderbilt University Medical Center, Nashville, TN, ⁷Sunnybrook Hospital, Toronto, ON, Canada, ⁸Centre for Addiction and Mental Health, Toronto, ON, Canada

Presented By: Zachary Klaassen, MD, MSc

Introduction: There is emerging evidence that oncology patients with pre-existing mental illness may have poorer survival compared to patients without psychiatric disease. Furthermore, cancer diagnosis may be associated with an increased risk of suicide. However, studies published thus far have failed to account for utilization of psychiatric resources, which may confound this relationship. The objective of this study was to (i) assess the impact of psychiatric utilization (PU) prior to cancer diagnosis on cancer-specific mortality (CSM), and (ii) to assess the effect of cancer diagnosis on suicide risk compared to the general population, accounting for pre-diagnosis PU.

Methods: All residents of Ontario, Canada diagnosed with either prostate, bladder or kidney cancer (1997-2014) were included. Each patient was assigned a psychiatric utilization gradient (PUG) score in the five years prior to cancer diagnosis: 0 – none, 1 – outpatient, 2 – emergency department, 3 – hospital admission. First, a multivariable cause-specific hazard model was used to assess the effect of PUG score on CSM. Second, non-cancer controls were matched 4:1 to cancer patients based on sociodemographic variables and a marginal cause-specific hazard model was used to assess the effect of cancer on the risk of suicidal death.

Results: 191,068 patients were included (137,699 prostate, 29,884 bladder, 23,485 kidney cancer): 109,154 (57.1%) with PUG score 0, 79,553 (41.6%) PUG score 1, 1,596 (0.84%) PUG score 2, and 765 (0.40%) PUG score 3. Increasing pre-diagnosis PU was associated with increased CSM: HR 1.78 (95%CI 1.47-2.14) among patients with PUG score 3 (vs 0) and HR 1.14 (95%CI 0.99-1.32) among those with PUG score 2. These patients with GU malignancies were then matched to 528,387 controls without any cancer diagnosis. Patients with GU cancer had a higher risk of dying of suicide compared to controls (HR 1.16, 95%CI 1.00-1.36). Specifically, among individuals with PUG score 0, those with cancer were significantly more likely to die of suicide compared to patients without cancer (HR 1.39, 95%CI 1.12-1.74).

Conclusion: Pre-cancer diagnosis PU is associated with worse CSM following diagnosis among patients with GU malignancies, with a graded effect. Additionally, the cancer diagnosis confers an increased risk of suicide, compared to the general population, even after accounting for pre-cancer diagnosis PU.

Podium #64

UNDERSTANDING VALUE: THE FINANCIAL IMPLICATIONS OF COMPLICATIONS FOLLOWING COMMON UROLOGIC ONCOLOGIC PROCEDURES

Jeff Goodwin, Patrick Hensley, Adan Dugan, Mauro Hanaoka, Jason Bylund, Andrew Harris
University of Kentucky

Presented By: Jeffrey D. Goodwin, MD

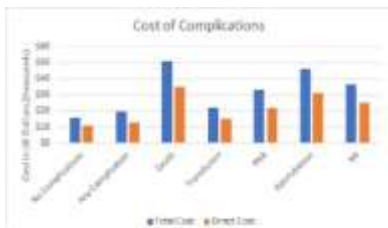
Introduction: Value-based care is becoming an increasingly important topic in the modern medical era. While it is known surgical complications contribute to significant patient morbidity and mortality, there is a substantial financial burden to the healthcare system that has not been thoroughly explored. We aim to define the cost of these complications following major urologic surgery.

Methods: We examined post-operative complications in patients who underwent radical cystectomy, robotic prostatectomy, laparoscopic nephrectomy, and laparoscopic partial nephrectomy and compared overall costs to uncomplicated cohorts. Patients were identified by CPT code from 2012 to 2017 at the University of Kentucky. Clinical and perioperative data were obtained from the local National Surgery Quality Improvement Program data and matched with billing data provided by the finance department. Data collected included frequency of incidents, Total Cost (TC) of the procedure, Direct Cost (DC; patient costs), and Contribution Margin (CM; Net Revenue - Direct Cost).

Results: Seven hundred eighty-seven cases were examined. The median TC of all cases was \$15,900 (IQR \$12,000 – \$18,500), DC was \$10,700 (IQR \$8,600 – \$12,500), contribution margin (CM) of \$2,400 (IQR \$-600 –\$5,400). A patient with any post-operative complication was noted to have an increased TC, DC, and CM. TC increased significantly in complications including death within 30 days (\$51,000), sepsis (\$18,400), transfusion (\$22,300), pneumonia (\$33,000), unplanned reintubation (\$45,900), and cardiac event or cerebrovascular accident (CVA) (\$36,700). DC was increased in patients who suffered a death within 30 days (\$35,000), sepsis (\$12,300), transfusion (\$15,100), pneumonia (\$21,900), unplanned intubation (\$31,100), and cardiac event or CVA (\$25,000), see Figure 1. The CM was significantly increased in the following complications: death within 30 days (\$15,100), unplanned intubation (\$16,700), and cardiac event or CVA (\$15,900).

Conclusion: In addition to the morbidity and mortality accompanying post-operative complications, there are significant financial ramifications to these events. As we transition to reimbursement models which emphasize value-based care versus fee-for-service, these findings may be useful to enhance understanding of the financial consequences of complications and to aid in targeting the most influential quality improvement projects.

Figure 1: Cost of Complications Compared with Uncomplicated Cohort



Podium #65

ROBOTIC VS. OPEN SURGICAL MANAGEMENT OF URETEROENTERIC ANASTOMOTIC STRICTURES

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Tulane University School of Medicine

Presented By: Stephen Proctor, MD

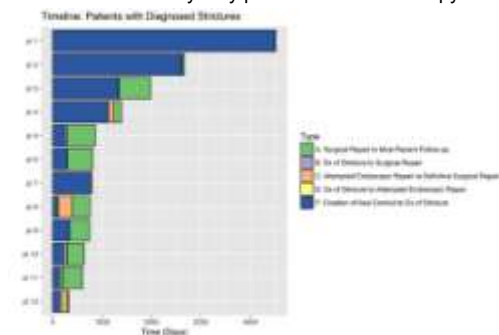
Introduction: Development of ureteroanastomotic strictures (UAS) after urinary diversion is a common occurrence, but is challenging to treat. Poor outcomes are likely with endoscopic management, and definitive surgical treatment can cause significant morbidity. The

comparative advantages of an operative approach (open surgical versus robot-assisted laparoscopic) have not been fully described in the literature to date.

Methods: We retrospectively reviewed the prospectively maintained Tulane University Department of Urology quality assurance database of 12 patients who underwent operative UAS repair between 2012 and 2018. Data were reviewed for operative approach, demographics, baseline disease characteristics, operative variables, and perioperative and pathological outcomes.

Results: Of the 12 patients analyzed, 5 underwent open repair (OR) (2 bilateral, 2 right, 1 left) and 7 underwent robotic repair (RR) (3 right, 4 left). One robotic case required conversion to open due to significant intestinal and peri-ureteral adhesions. The median ages were 59 in OR and 60 in RR. Two patients in each group had failed previous endoscopic repair. Median time from cystectomy to treatment of enteroanastomotic stricture was 13 months for OR and 10 months for RR ($p=0.25$). Median estimated blood loss was 80 mL in both OR and RR ($p=1.0$), median operative time was 260 minutes in OR and 255 minutes in RR ($p=0.13$), and median hospital stay was 8 and 4 days, respectively ($p=0.06$). There were 2 intra-operative and 1 post-operative complication in the OR group, one of whom required further surgical intervention, yet no complications in the robotic cohort.

Conclusion: A minimally invasive, robotic approach offers decreased surgical morbidity with similar outcomes for appropriately selected patients with UAS. High success rates combined with minimal morbidity may provide definitive therapy at an earlier stage of the disease state.



Podium #66

COMPARATIVE PERIOPERATIVE OUTCOMES OF PATIENTS UNDERGOING ADRENALECTOMY WITH AND WITHOUT DISSEMINATED CANCER

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Ochsner Clinic Foundation

Presented By: Kristen Elizabeth Gurtner, MD

Introduction: The adrenal gland is a common site of metastasis for a variety of different cancers. Anecdotal reports have suggested that in the presence of solitary or oligometastatic disease, adrenalectomy may confer a survival advantage. In this study, we compared the perioperative outcomes of patients undergoing adrenalectomy in the setting of metastatic disease versus those patients undergoing adrenalectomy not in the setting of metastatic disease to determine the degree of surgical risk associated with adrenalectomy in patients with disseminated cancer.

Methods: Patients in the American College of Surgeons National Surgical Quality Improvement Program who underwent an adrenalectomy between 2011 and 2016 were included. Patients were stratified by the presence or absence of disseminated cancer at the time for surgery; patients who underwent a concomitant procedure at the time of adrenalectomy were excluded. Perioperative outcomes were compared, and a multivariable logistic regression analysis was performed to determine if the presence of disseminated cancer at the time of adrenalectomy was an independent predictor of adverse perioperative outcomes.

Results: From 2011-2016, 4,207 patients underwent an adrenalectomy in the NSQIP database, of which 270 (6.4%) patients had disseminated cancer at the time of surgery. In the overall cohort, a majority of patients were female (57.9%) and Caucasian (69.6%). Adrenalectomy was very well

tolerated with minimal morbidity (less than 10% overall complication rate). Comparing the two groups, there was no significant difference in minor and major complications ($p = 0.13$ and 0.16), unplanned readmissions ($p = 0.13$), and return to the OR ($p=0.3$). There were no perioperative mortalities in either group. In a multivariate analysis, the presence of disseminated cancer was not a statistically significant predictor of poor perioperative outcomes (OR 1.33, CI 0.61-2.90, $p=0.47$). **Conclusion:** In this study of a large administrative database, patients undergoing an adrenalectomy in the presence of disseminated cancer did not have significantly worse perioperative outcomes as compared to patients undergoing adrenalectomy without disseminated cancer. Thus, adrenalectomy in patients with stage IV cancer appears to be safe and have an acceptable perioperative risk profile.

Podium #67

POST-OPERATIVE HEART RATE PREDICTS EJACULATORY FUNCTION IN PATIENTS UNDERGOING RETROPERITONEAL LYMPH NODE DISSECTION

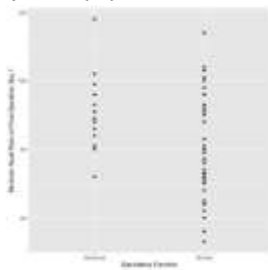
Elizabeth Green, Kelvin Moses
Vanderbilt University Medical Center
Presented By: Elizabeth Green, MD

Introduction: Retrograde ejaculation is a well described side effect of retroperitoneal lymph node dissection (RPLND) caused by disruption of retroperitoneal sympathetic nerves. Previous literature has demonstrated that post-operative tachycardia is caused by catecholamine excess. Because of the shared mechanism of post-operative tachycardia and retrograde ejaculation in these patients, the aim of this study was to determine if post-operative heart rate was predictive of ejaculatory function after RPLND

Methods: We performed a retrospective cohort study comprising all patients who underwent RPLND from July 2006 to August 2017. The maximum and minimum recorded heart rate for post-operative day one after surgery, perioperative clinical data and patient reported ejaculatory outcomes were obtained from chart review. Nerve sparing status was determined by review of operative reports. Ejaculatory function was determined to be abnormal if the patient reported anything other than consistent antegrade ejaculation. Student t-test and multivariate logistic regression were used to compare groups.

Results: 99 patients underwent RPLND during the study period. Two patients were excluded from analysis for profound neurocognitive impairment and one patient declined to participate. Of the remaining 96 patients, 61 patients had documented ejaculatory function. 15 patients had abnormal ejaculatory function and 46 had normal ejaculatory function. Subjects with abnormal ejaculatory function had higher maximum (108.6 ± 16.4 vs 97.8 ± 16.4 , $p=0.038$) and minimum heart rates (90.1 ± 11.0 vs 79.5 ± 14.7 , $p=0.006$, figure 1) the day after surgery than those with normal ejaculatory function. There was no difference in estimate blood loss (298.3 vs 222.3 mL, $p=0.24$) or intraoperative fluid resuscitation (3313.3 vs 2993.5 mL, $p=0.41$) between the two groups. On multivariate analysis, ejaculatory function was predicted by minimum heart rate on post-operative day 1 ($p=0.046$) but not by nerve sparing ($p=0.092$).

Conclusion: For patients undergoing RPLND at a single center, there was a significant difference in post-operative heart rate in patients who had normal ejaculation compared to those with ejaculatory dysfunction. This relationship was independent of patient nerve sparing status.



Podium #68
DEMOGRAPHIC DISPARITIES IN THE INCIDENCE AND OUTCOMES OF PENILE
CANCER IN APPALACHIAN KENTUCKY

John Loomis, Patrick Hensley, Andrew James
University of Kentucky
 Presented By: John Charles A. Loomis, MD

Introduction: Penile squamous cell carcinoma (pSCC) is uncommon in developed countries, but portends significant mortality and treatment-related morbidity. Little is known regarding clinical, socioeconomic, and demographic risk factors for pSCC. This study investigates the disparities in demographic distribution and outcomes of pSCC in Appalachian Kentucky (KY), a region characterized by poor healthcare literacy and access.

Methods: The KY Cancer Registry (KCR) is a prospectively maintained database and was one of the founding expansion registries to comprise the SEER database. Appalachian counties are defined by the Appalachian Regional Commission. Blinded data were retrieved for patients with pSCC from 1995-2015 from KCR and SEER. Proportions were analyzed using Chi-Square tests and continuous variables by T-tests.

Results: 700 cases of pSCC were diagnosed in KY from 1995-2015. For the year 2015, KY comprised 1% of the US population, yet registered 8% of pSCC diagnoses during the study period (SEER data). In Appalachia, 12.1 million men were at-risk during that time, with a rate of 2.6 cases per 100,000 persons (non-Appalachian rate 1.6 cases/100,000). This is in contrast to the relatively equivocal incidence of other GU malignancies, including prostate, kidney, and bladder cancers.

Nearly 40% of patients were from Appalachian counties and these patients were predominantly Caucasian (P<0.001), were more likely to undergo LND, and have N+ disease (See Table, P=0.016 and <0.001, respectively). African Americans (AA) comprised only 5% of patients and exhibited high pathologic stage at presentation (P=0.041) compared to Caucasians. In patients with available cancer-specific mortality (CSM) data, survival interval from diagnosis was shorter for men in the Appalachia (20.7 vs. 26.0 mo, P=0.016) as well as for AAs(23.1 vs. 12.2 mo, P=0.023). Predictors of CSM included increased age, poor differentiation, higher T stage, and LN involvement (P<0.001 for all). Treatment modality (surgery +/- chemoradiation) did not differ with regards to Appalachian status, race, or clinical outcomes.

Conclusion: There is a disproportionally high rate of pSCC in Kentucky with relative predominance in Appalachian counties. Both Appalachian and African-American men exhibited more advanced disease at presentation and shorter survival, highlighting socioeconomic and racial disparities which can be exploited to improve health literacy, timely diagnosis and access to care in high risk individuals.

Variables	Appalachians			Race			Cancer-Specific Mortality		
	N	%	CI	Caucasian	African	%	Interval	Months	P
Age (years) and	273.0 (95% CI 100.0-366.0)	39.0	35.0-43.0	195.0 (95% CI 100.0-290.0)	78.0 (95% CI 40.0-116.0)	28.6	12.1	12.1-12.1	<0.001
Residence (Type)	16.0	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001
Subtotal	273.0 (95% CI 100.0-366.0)	39.0	35.0-43.0	195.0 (95% CI 100.0-290.0)	78.0 (95% CI 40.0-116.0)	28.6	12.1	12.1-12.1	<0.001
Appalachian-American	101.0 (95% CI 50.0-152.0)	14.3	11.0-17.6	172.0 (95% CI 100.0-244.0)	63.0 (95% CI 30.0-96.0)	22.2	20.7	20.7-20.7	0.016
Non-Appalachian	172.0 (95% CI 100.0-244.0)	24.7	21.4-28.0	123.0 (95% CI 80.0-166.0)	49.0 (95% CI 20.0-78.0)	6.4	26.0	26.0-26.0	<0.001
Appalachian-African	16.0 (95% CI 10.0-22.0)	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001
Non-Appalachian-African	62.0 (95% CI 30.0-94.0)	8.9	6.6-11.2	53.0 (95% CI 30.0-76.0)	9.0 (95% CI 4.0-14.0)	3.3	12.2	12.2-12.2	0.023
Appalachian-T	16.0 (95% CI 10.0-22.0)	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001
Non-Appalachian-T	156.0 (95% CI 100.0-212.0)	22.7	19.4-26.0	123.0 (95% CI 80.0-166.0)	33.0 (95% CI 10.0-56.0)	12.2	26.0	26.0-26.0	<0.001
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Appalachian-T	16.0 (95% CI 10.0-22.0)	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001
Non-Appalachian-T	156.0 (95% CI 100.0-212.0)	22.7	19.4-26.0	123.0 (95% CI 80.0-166.0)	33.0 (95% CI 10.0-56.0)	12.2	26.0	26.0-26.0	<0.001
Appalachian-T	16.0 (95% CI 10.0-22.0)	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001
Non-Appalachian-T	156.0 (95% CI 100.0-212.0)	22.7	19.4-26.0	123.0 (95% CI 80.0-166.0)	33.0 (95% CI 10.0-56.0)	12.2	26.0	26.0-26.0	<0.001
Appalachian-T	16.0 (95% CI 10.0-22.0)	2.3	1.2-3.4	14.0 (95% CI 10.0-18.0)	2.0 (95% CI 0.5-3.5)	0.3	0.3	0.3-0.3	0.001

Podium #69

PERINEAL URETHROSTOMY: A SINGLE CANCER INSTITUTION EXPERIENCE OVER A DECADE

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Presented By: Julio Slongo, MD

Introduction: Perineal Urethrostomy (PU) is often the final urinary diversion for patients with penile cancer (PC) requiring total penectomy (TP). The literature suggests a significant incidence of failure, specifically PU stricture (PUS), ranging from 8-30%. We present our ten-year experience with cancer-related PU.

Methods: From 2008-2018, at our institution, 25 patients underwent PU, using the Blandy technique. They were retrospectively evaluated by chart review. Average follow-up was 17.25 months.

Results: Of the 25 patients undergoing TP with PU, 76% were due to PC, 8% due to urethral cancer and 16% because of other malignancies. Mean age at time of surgery was 68.6 years (range 33–90 years). Local tumor invasion was observed in 21% (cavernosum) 47% (spongiosum) and 52% (urethral). A total of 26% had proven HPV-associated malignancies. Seven patients developed PUS (28%): 3 requiring dilations and 4 surgical revision. The mean time to stricture procedure was 8.85 months after PU and time to revision surgery was 11.25 months (range 2-24 months). Three patients developed surgical site infection (12%).

Analyzing risk factors, six patients required adjuvant radiation therapy: half of those developed PUS requiring surgical intervention. Comparing radiation and non-radiation exposure, an Odds Ratio (OR) of 3.75 was observed for the radiation group. Of 8 patients receiving adjuvant chemotherapy, 42% developed PUS, with an OR of 1.97.

Conclusion: Of 25 patients who underwent PU for cancer over the past ten years, our stricture rate and risk factors were similar to literature data. As described by Myers, radiation exposure is the most important risk factor for PU stricture. In that retrospective analysis of 173 patients, which was limited almost only to patients with urethral stricture disease, an OR of 12.4 was seen for radiation exposure. Further studies are needed to evaluate better outcomes, but patients undergoing PU for any reason should be advised of frequent need for revision procedures, especially when radiation therapy is required.

Podium #70

CLINICAL TRANSLATION OF ENGINEERED PENILE TISSUE FOR BATTLEFIELD INJURY

Sita Somara, Teresa Burnette, Namrata Sangha, Lindsey Creahan, Tsghe Abraha, Kathryn Krupp, Tiana Stewart, Torie Westendorf, Brad Damratoski, Lisa Hinshaw, Todd Meinecke, Darren Hickerson, Cynthia Wilkins-Port, Ryan Terlecki, James Yoo, Anthony Atala, Julie Allickson, John Jackson

Wake Forest School of Medicine

Presented By: John D. Jackson, PhD

Introduction: Presently, the latest weaponry employed in war has resulted in soldiers suffering from severe injuries, often involving damage to the pelvic area and genitals. Loss or damage of penile tissue are life-defining injuries for those affected. Restoration of sexual function is necessary to support recovering psychologically and reestablish the prospect of leading a full and productive life. Recently, the concept of tissue engineering has been proposed to address the goal of restoring normal anatomical tissue configuration and erectile function.

Methods: A penile construct has been engineered by seeding autologous, ex vivo-expanded smooth muscle and endothelial cells seeded onto a naturally derived acellular corporal tissue matrix that possesses the same architecture as native corpora. The proposed clinical indication for the engineered product was for treatment of damaged penile corpora cavernosa. Autologous endothelial cells (EC) and smooth muscle cells (SMC) were isolated from a biopsy obtained from the patient's cavernosum. Scaffolding was generated by decellularizing a donor penile body. This acellular scaffold was seeded with cells isolated and expanded from the patient's biopsy. Once seeded, the engineered penile tissue construct was matured in a bioreactor.

Results: A robust process, developed in WFIRM RMCC Process Development, is being translated into GMP Manufacturing for the production of a clinical grade engineered penile tissue construct. In-process and release testing procedures have been established for the utilization of autologous cells and decellularized donor scaffold, to deliver a sterile engineered penile tissue final product. Cells were characterized by studying growth kinetics, identity and purity through immunophenotyping and viability assessments. Decellularized scaffolds are evaluated for acellularity through the absence of DNA and cell nuclei. The final product construct has been characterized for cell viability and distribution on the donor scaffold.

Conclusion: Processes for isolating and expanding the cells, decellularization of a donor penile body and production of a final product construct is currently being optimized and validated to conform to FDA requirements. An investigational New Drug (IND) application for the project has been approved from the Food and Drug Administration (FDA) for carrying out Phase I safety study for this engineered penile tissue product.

Podium #71

CHARACTERIZATION OF TREATMENT AND PROGNOSTIC FACTORS OF PRIMARY ADENOCARCINOMA OF THE URETHRA: A SEER POPULATION-BASED STUDY

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Tulane University School of Medicine

Presented By: Caleb Natale

Introduction: Primary adenocarcinoma of the urethra is a rare malignancy and thus has been difficult to characterize. In this study, we analyze demographic, prognostic, and treatment data available through the Surveillance, Epidemiology, and End Results (SEER) database. This report is one of few population-based reports to study adenocarcinoma of the urethra in recent literature.

Methods: The SEER 18 Registry was utilized to identify and abstract cases of primary adenocarcinoma of the urethra diagnosed from 1973-2015. Demographic data, tumor and disease characteristics, treatment information and survival outcome data were collected. Overall survival (OS) and disease specific survival (DSS) were determined using Kaplan-Meier curve analysis and subsequent univariate cox regression using SAS JMP. Significant variables were then compared using multivariate analysis. A p value of <0.05 was considered statistically significant.

Results: 451 cases of primary adenocarcinoma of the urethra were identified. OS at 2-, 5- and 10-year intervals were 64.36%, 38.831%, and 22.87%, respectively. DSS at 2-, 5- and 10- year intervals were 70.83%, 49.93%, and 37.95%, respectively. 49.67% of patients received only surgical treatment, while 9.31% received only radiation and 2.00% received only chemotherapy. The most common combination therapy was surgery and radiation (15.74%). Female patients were more numerous (67.09%) and averaged a younger age of diagnosis at 63.80±12.51 years compared to 70.27±14.11 years for men (p<0.0001). Male sex conferred an overall survival advantage on univariate analysis (HR=0.744, p=0.0141) and multivariate analysis (HR=0.749, p=0.0204). Stage was also a significant prognostic indicator of survival in both OS (p<0.0001) and DSS (p<0.0001). Race and histological subtype of cancer were not significant predictors of survival.

Conclusion: Surgical intervention is the most common treatment for primary adenocarcinoma of the urethra, however a minority require adjuvant or salvage radiation and/or chemotherapy. Sex and tumor stage are more likely to be prognostic indicators of survival. Overall, this is a very aggressive malignancy with <40% overall survival at 5 years.

Podium #72
PSA DENSITY PERFORMS BETTER IN CAUCASIAN MEN THAN AFRICAN AMERICAN MEN IN PREDICTING PROSTATE CANCER AND SIGNIFICANT CANCER

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LSU Shreveport

Presented By: Emily Fell Kelly, MD

Introduction: PSA density (PSAD) is a PSA derivative that has been used to help predict for prostate cancer on biopsy. PSAD cut offs were formulated from cohorts consisting of mostly Caucasian (CA) men who underwent a sextant biopsy. We sought to evaluate PSAD in a more modern cohort of men to predict prostate cancer, to predict significant cancer, and to compare the performance of PSAD in African Americans (AA) and CA.

Methods: After IRB approval, we performed a retrospective chart review of all men who underwent a 12 core prostate biopsy between 2015 and 2017 at LSU Shreveport. Data collected included age, race, BMI, finasteride use, PSA, prostate volume (PV), biopsy pathology, T stage and Gleason score. PSA was corrected for finasteride use. PSA density was calculated by PSA divided by PV. Receiver operator characteristic (ROC) curve analysis was performed using the entire cohort, the AA cohort, and the CA cohort to predict for prostate cancer and significant cancer. Significant cancer was defined two ways using the AUA risk groups: 1. Intermediate (favorable and unfavorable) and high risk groups 2. Unfavorable intermediate and high risk groups.

Results: Of the entire cohort (n=239), 68.2% (n=163), 28.8% (n=69), and 2.9% were AA, CA, and other, respectively. Including 91 AA and 27 CA, 49.3% had a positive biopsy.

The area under the curve (AUC) to predict prostate cancer was 0.784 (95% CI 0.726-0.841), 0.761 (95% CI 0.688-0.834), and 0.814 (95% CI 0.711-0.916) using the entire, AA, and CA cohorts, respectively.

Using definition 1 for significant cancer, the AUC for the entire, AA, and CA cohorts was 0.796 (95% CI 0.738-0.854), 0.777 (95% CI 0.705-0.85), and 0.824 (95% CI 0.714-0.935), respectively.

Using definition 2 for significant cancer, the AUC for the entire, AA, and CA cohorts was 0.841 (95% CI 0.786-0.895), 0.814 (95% CI 0.745-0.883), and 0.905 (95% CI 0.83-0.98), respectively.

Table 1 lists the sensitivity and specificity for selected cut off scores for each ROC curve.

Conclusion: PSAD is still a useful tool and can be used to help counsel patients about undergoing a prostate biopsy. PSAD performed better in Caucasian men than African American men in predicting prostate cancer and significant cancer.

Cut offs to Predict Positive Biopsy						
PSAD	Entire Cohort		AA		CA	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
0.12	89.0%	55.0%	87.0%	52.1%	93.6%	55.0%
0.14	85.3%	61.7%	85.2%	56.3%	92.6%	61.7%
0.15	78.0%	67.5%	75.8%	63.4%	85.2%	67.5%
0.16	71.7%	70.0%	73.6%	67.6%	78.3%	70.0%
0.18	60.0%	75.0%	68.1%	74.6%	74.3%	75.0%

Cut offs to Predict Significant Cancer Definition 1						
PSAD	Entire Cohort		AA		CA	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
0.12	89.0%	49.3%	88.6%	47.0%	93.3%	51.1%
0.14	84.8%	56.5%	82.8%	53.0%	90.3%	61.7%
0.15	79.0%	62.3%	77.2%	58.0%	83.7%	68.0%
0.16	70.0%	65.8%	75.0%	63.0%	80.0%	68.1%
0.18	71.0%	71.0%	70.0%	71.1%	76.2%	68.1%

Cut offs to Predict Significant Cancer Definition 2						
PSAD	Entire Cohort		AA		CA	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
0.12	91.9%	46.3%	94.9%	43.7%	100.0%	51.7%
0.14	93.2%	54.2%	92.5%	51.5%	100.0%	58.3%
0.15	89.2%	62.4%	88.1%	58.2%	92.3%	63.2%
0.16	87.8%	64.6%	86.4%	62.1%	91.3%	68.0%
0.18	83.8%	69.5%	82.4%	68.0%	91.3%	70.0%

Podium #73

PROSPECTIVE MULTICENTER COMPARISON OF OPEN AND ROBOTIC RADICAL PROSTATECTOMY: THE PROST-QA/RP2 CONSORTIUM

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Presented By: Martin George Sanda, MD

Introduction: Comparisons of robot-assisted laparoscopic (RALP) and open radical prostatectomy (ORP) are often limited by retrospective approaches, non-patient-reported health-related quality of life (HRQOL) evaluations, or single center/surgeon analyses. Herein we present a prospective, multicenter comparison of RALP and ORP.

Methods: We evaluated men from two prospective, multicenter, longitudinal studies treated from 2003-2012 with a pre-specified analytic goal of comparing RALP (n=549) and ORP (n=545). Subjects completed EPIC-26 HRQOL questionnaires at pre-treatment, 2, 6, 12, and 24 months post-operatively, with follow-up compliance >85%. We used univariate mixed models with cohort as a random effect to assess differences in baseline demographic and cancer characteristics, and the chi-square test to evaluate differences in surgical and peri-operative outcomes between surgical approaches. We evaluated for predictors of HRQOL domain score changes over time using semi-parametric generalized estimated equation modeling with compound symmetrical correlation structure, controlling for nesting within cohort.

Results: We found no significant differences in demographics, cancer characteristics, pathologic T stage, or margin status between surgical approaches. ORP subjects were more likely than RALP subjects to undergo lymphadenectomy (89% vs 47%; p<0.01) and nerve sparing (94% vs 89%; p<0.01). RALP subjects had less mean intraoperative blood loss (192 vs 805 mL; p<0.01), shorter mean hospital stay (1.6 vs 2.1 days; p<0.01), and fewer blood transfusions (1% vs 4%; p<0.01), wound infections (2% vs 4%; p=0.02), other infections (1% vs 4%; p<0.01), deep vein thrombosis (DVT; 0.5% vs 2%; p=0.04), and unplanned catheterizations (3% vs 7%; p<0.01) than ORP subjects. RALP subjects reported less surgical pain (p=0.04), less pain interference with activity (p<0.01) and higher incision satisfaction (p<0.01). Surgical approach was not a significant predictor of HRQOL change over time in any of the five EPIC-26 HRQOL domains.

Conclusion: In this multicenter, prospective evaluation of ORP and RALP, surgical approach was not a significant predictor of post-surgical HRQOL change. RALP subjects had superior incisional/pain outcomes, shorter hospital stays, and fewer post-surgical complications such as blood transfusions, infections, DVTs, and unplanned catheterizations. These results should help guide treatment counseling and be integrated into future cost analyses.

INCREASED OPERATIVE TIMES IN MINIMALLY INVASIVE RADICAL PROSTATECTOMY ARE ASSOCIATED WITH SIGNIFICANTLY INCREASED RISK OF MORBIDITY. A STUDY OF 35.105 PATIENTS

University of Kentucky

Introduction: Longer operative duration (OD) has been shown to be a risk factor for negative outcomes in multiple surgical procedures. We seek to examine the effect of OD on morbidity in Minimally Invasive Radical Prostatectomy (RP).

Methods: The American College of Surgeons National Surgical Quality Improvement Program database was queried by CPT code from 2011-2016 by CPT code. Univariable and multivariable analysis was performed to determine risk factors for complications.

Results: 35,105 patients were examined. OD was divided into tertiles, <171 minutes, 171-225 minutes, and over 226 minutes. Mean age was 62 years. Median BMI increased in each tertile, 27.9 kg/m², 28.4 kg/m², and 29.9 kg/m², respectively. Patients with increased OD were also more likely to have diabetes, history of congestive heart failure, be on medication for hypertension (HTN), and have higher ASA class. Longer OD was associated with increased risk of complications. 4.1% of patients with OD <171 minutes experienced a complication, 5.1% in tertile 2, and 7.5% in the longest tertile. Patients in the longest tertile had significantly higher rates of pulmonary embolism or DVT, renal insufficiency, sepsis, transfusion, and surgical site infection when compared to the shortest tertile, all $p < 0.001$, Table 1. Unadjusted odds ratios (OR) of morbidity by OD were 1.0, 1.2, and 1.9 by increasing tertile. Adjusted OR were 1.0, 1.2, and 1.8 by increasing tertile. Other predictors of morbidity on multivariable analysis included DM (OR 1.2), HTN meds (OR 1.2), preoperative weight loss (OR 2.1), ASA class III (OR 1.3), and ASA class IV-V (OR 1.8).

Conclusion: This study reveals multiple significant risk factors for morbidity in RP. Sicker patients are more likely to have complications. However, OD is an independent predictor of morbidity, even when adjusting for patient specific preoperative factors. Patients in the longest tercile were nearly twice as likely to have complications. Further study on ideal operative duration, such as nomograms, and ways to increase OR efficiency is needed. Increased OD decreases value on multiple levels.

[illegible]

Table 3. Subject categories identified by iterative analysis, N = 25,000.

Podium #75

DEVELOPMENT AND VALIDATION OF A WEB-BASED TOOL TO PREDICT SEXUAL, URINARY, AND BOWEL FUNCTION LONGITUDINALLY AFTER RADIATION THERAPY, SURGERY, OR OBSERVATION

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Presented By: Aaron Laviana, MD

Introduction: Shared decision-making to guide treatment of localized prostate cancer requires delivery of the anticipated quality of life (QOL) outcomes of contemporary treatment options (including robotic radical prostatectomy [RP], intensity modulated radiation therapy [RT] and active surveillance [AS]). We sought to create a simple tool to predict personalized sexual, urinary, bowel, and hormonal function outcomes after RP, RT and AS.

Methods: The Comparative Effectiveness Analysis of Surgery and Radiation (CEASAR) Study is a multicenter, prospective, population-based, observational study of men diagnosed with localized prostate cancer from 2011 to 2012. 2,138 men were followed from enrollment to 5 years with the Expanded Prostate Cancer Index short form (EPIC-26), a validated questionnaire for measuring QOL in men with prostate cancer. Responses to the 26 individual questions are aggregated into 5 domain scores (sexual, urinary irritative, urinary incontinence, bowel, hormonal). Comprehensive models to predict domain scores were fit, including all available covariates (age, race, pre-treatment PSA, biopsy grade, body mass index, EPIC-26 baseline function, treatment, and scores on standardized instruments measuring comorbidity, general QOL and psychosocial health.) To create a usable tool, we fit parsimonious models for each domain with factors selected based on clinical considerations and statistical performance (age, race, pre-treatment PSA, biopsy grade, EPIC-26 baseline function, a general health question, and treatment). The parsimonious models were compared to the comprehensive models using a 300-iteration bootstrap approach. Adjusted R-squared values were compared and calibration plots were developed to evaluate the performance of the parsimonious models relative to the comprehensive models. A web-based tool was developed from the parsimonious models.

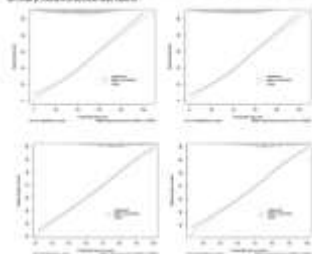
Results: The prediction models achieved adjusted R-squared values of 0.388, 0.245, 0.217, 0.234, and 0.348 for sexual function, urinary incontinence, urinary irritative, bowel, and hormonal domains, respectively. Differences in R-squared values between the comprehensive and parsimonious models were small in magnitude and not statistically significant. Calibration was excellent (Figure 1). The web-based tool may be found at:

<https://statez.shinyapps.io/PCDSPred/>.

Conclusion: Functional outcomes after treatment for localized prostate cancer can be predicted at the time of diagnosis based on age, race, PSA, biopsy grade, baseline function, and a general question regarding overall health. Providers and patients can use this prediction tool to inform shared decision-making.

Figure 1:

Full (left) and reduced (right) calibration models for sexual function and urinary incontinence domains



Podium #76

EVALUATION OF FLUCICLOVINE (FACBC) PET SCAN FOR STAGING HIGH-RISK PROSTATE CANCER BEFORE PRIMARY TREATMENT

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Presented By: Mehrdad Alemozaffar, MD, MS

Introduction: The PET radiotracer [18F]-fluciclovine was recently approved by FDA and CMS for detection of metastases in the setting of recurrence after primary treatment for prostate cancer and is undergoing rapid adoption; however, its potential to improve staging and decisions prior to treatment for initial staging has not yet been characterized. We sought to evaluate the potential for fluciclovine-PET to enhance care decisions in the setting of newly diagnosed, high-risk prostate cancer, where standard imaging has suboptimal sensitivity for detecting metastases.

Methods: Patients with AUA defined high-risk or unfavorable intermediate-risk prostate cancer and clinically localized disease on CT and/or MRI and bone scan already scheduled for robot assisted radical prostatectomy with extended pelvic lymph node dissection (RARP-EPLND) were eligible for this IRB-approved trial. Patients underwent fluciclovine PET-CT according to study parameters. RARP-EPLND with anatomic lymph node packets sent individually was then performed. Histologic findings of metastatic lymph nodes in patients and within specific packets (left pelvic, right pelvic, presacral and non-regional) were then compared to the pre-surgery fluciclovine PET-CT findings to calculate sensitivity and specificity.

Results: 38 patients underwent fluciclovine PET-CT and 35 patients underwent surgery. Mean age was 61.7yrs, mean PSA was 24.4, and median Gleason score was 4+4. Fluciclovine PET-CT showed suspected extraprostatic disease in 15 patients (39.5%). Three patients were found to have extensive disease on fluciclovine PET-CT and determined to have metastatic disease (confirmed on biopsy, standard of care MRI for bone or clinical response to ADT) and therefore did not undergo surgery. Of the 35 patients undergoing surgery 18/35 (51.4%) had metastatic nodes on histology with fluciclovine PET detecting nodes in 10/18 (55.6%) of these patients for a calculated sensitivity of 61.9%, specificity of 88.2%, PPV of 86.7%, and NPV of 65.2%, with overall accuracy of 73.7%. Diagnostic performance at the lymph node packet level demonstrated a sensitivity of 62.2%, specificity 97.1%, PPV 88.5%, NPV 87.7%, and overall accuracy 87.9%.

Conclusion: Fluciclovine PET-CT appears to be a valuable tool for pre-treatment staging of patients with high-risk prostate cancer with a high specificity for detection of metastatic lymph nodes. Fluciclovine PET-CT may help in decision-making for treatment options and help guide lymph node dissection during surgery.

Podium #77

IDENTIFICATION OF TRANSCRIPTION FACTOR RELATIONSHIPS ASSOCIATED WITH ANDROGEN DEPRIVATION THERAPY RESPONSE AND METASTATIC PROGRESSION IN PROSTATE CANCER

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Presented By: Carlos Sanchez Moreno, PhD

Introduction: Patients with locally advanced or recurrent prostate cancer typically undergo androgen deprivation therapy (ADT), but the benefits are often short-lived, and responses are variable. ADT failure results in castration-resistant prostate cancer (CRPC), that inevitably leads to metastasis. We hypothesized that differences in tumor transcriptional programs may reflect differential responses to ADT and subsequent metastasis.

Methods: We performed whole transcriptome analysis of 20 patient-matched Pre-ADT biopsies and 20 Post-ADT prostatectomy specimens, and identified transcription factor coordinated groups (TFCGs) using the PANDA algorithm.

Results: We identified two subgroups of patients (high impact and low impact groups) that exhibited distinct transcriptional changes in response to ADT. We found that all patients lost AR-dependent subtype (PCS2) transcriptional signatures. The high impact group maintained the more aggressive subtype (PCS1) signal, while the low impact group more resembled an AR-suppressed (PCS3) subtype. Computational analyses identified transcription factor coordinated groups (TFCGs) enriched in the high impact group network. Leveraging a large public dataset of over 800 metastatic and primary samples, we identified 33 TFCGs in common between high impact group and metastatic lesions, including SOX4/FOXA2/GATA4, and a TFCG containing JUN, JUNB, JUND, FOS, FOSB, and FOSL1. The majority of metastatic TFCGs were subsets of larger TFCGs in the high impact group network, suggesting refinement of critical TFCGs in prostate cancer progression.

Conclusion: We have identified TFCGs associated with pronounced initial transcriptional response to ADT, aggressive signatures, and metastasis. Our findings suggest multiple new hypotheses that could lead to novel combination therapies to prevent development of CRPC following ADT.

Podium #78

COMPARISON OF ABIRATERONE ACETATE AND DOCETAXEL WITH ANDROGEN DEPRIVATION THERAPY IN HIGH-RISK AND METASTATIC HORMONE-NAIVE PROSTATE CANCER: UPDATED RESULTS OF A NETWORK META-ANALYSIS

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Presented By: Eric D. Webb, MD

Introduction: Randomized clinical trials (RCTs) have recently examined the benefit of adding docetaxel or abiraterone to androgen deprivation therapy (ADT) in men with high-risk or metastatic hormone-naïve prostate cancer (mHNPc). However, no direct comparison of these treatments has been evaluated. We previously performed a systematic review and network meta-analysis (NMA) of RCTs, indirectly evaluating overall survival (OS) for men treated with abiraterone acetate plus prednisone/prednisolone with ADT (Abi-ADT) versus docetaxel with ADT (Doce-ADT) in mHNPc, finding no significant difference in OS between Abi-ADT and Doce-ADT. With recently published long-term survival analysis of patients in the CHAARTED trial, we updated the results of our NMA assessing Abi-ADT versus Doce-ADT.

Methods: A systematic review identified five RCTs that fit inclusion criteria, as well as an updated OS analysis of one of the included trials (CHAARTED). We pooled results using the inverse variance technique and random-effects models. The Bucher technique for indirect treatment comparison was used to compare Abi-ADT with Doce-ADT.

Results: Overall, 6067 patients from five trials were included in the analysis. The CHAARTED trial original OS HR was 0.61 (95%CI 0.47-0.79), which changed to 0.72 (95%CI 0.59-0.89) in the updated OS analysis. When assessing all patients, the HR for Abi-ADT versus Doce-ADT was 0.81 (95%CI 0.68-0.96), now statistically significant, from the previous HR 0.84 (95%CI 0.67-1.06). In low-volume patients, the updated OS HR for Abi-ADT versus Doce-ADT was 0.63 (95%CI 0.38-1.02), previously HR 0.78 (95%CI 0.42-1.47); for the high-volume subgroup, the updated HR was 0.88 (95%CI 0.65-1.20), previously HR 0.88 (95%CI 0.62-1.25).

Conclusion: This updated NMA comparing Abi-ADT versus Doce-ADT for patients with mHNPc shows that Abi-ADT was significantly associated with improved OS compared to Doce-ADT. This association is likely driven by a trend towards improved OS for low-volume patients treated with Abi-ADT. While the data suggests a preference for Abi-ADT as the initial treatment modality, currently both approaches are reasonable for patients newly diagnosed with mHNPc.

Podium #79

META-ANALYSIS OF THE PROGNOSTIC UTILITY OF THE CELL CYCLE PROGRESSION SCORE GENERATED FROM NEEDLE BIOPSY IN MEN TREATED WITH DEFINITIVE THERAPY

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Presented By: Kristen Elizabeth Gurtner, MD

Introduction: The cell cycle progression (CCP) score is a validated prognostic molecular RNA signature that has proven to have utility in various clinical settings. Here, we evaluated the ability of the score to predict 10-year risk of metastatic disease in a large meta-analysis of patients who received definitive therapy.

Methods: We combined patient cohorts from the Martini Clinic, Durham VA Medical Center, Intermountain Healthcare, and Ochsner Clinic (N= 1,062). Men were included if they were treated for localized prostate cancer by either RP or EBRT. The CCP score was derived from biopsy and evaluated for association with 10-year risk of metastatic disease following definitive therapy after adjusting for other clinical information. We also evaluated the performance of the CCR score (combined clinical CCP risk (CCR) score = (0.57xCCP) + (0.39xCAPRA)) for predicting metastatic disease and derived a CCR-based metastatic risk curve. Patient data was censored at 10 years.

Results: In the combined cohort, 3.3% (35/1062) of the patients progressed to metastatic disease by 10 years. The CCP score was strongly associated with 10-year risk of metastatic disease in multivariable analysis (Hazard Ratio (HR) per unit score = 2.14, 95% Confidence Interval (CI), 1.58, 2.86; p=3.1x10⁻⁶) after adjusting for CAPRA, ethnicity, and treatment. The cohorts were not significantly different (p=0.71) nor was there evidence for an interaction between CCP and the four cohorts (p=0.69). CCR was also highly prognostic in a univariate model (HR per unit score = 4.00, 95% CI 2.97, 5.47; p=6.3x10⁻²¹). There was no evidence of interaction between CCR and cohort (p=0.86). Observed patient CCR-based predicted risks for metastatic disease by 10 years ranged from 0.1% to 99.4%, (IQR 0.7%, 4.6%), and the highest decile had metastatic risks greater than 14%. The C-index was 0.790 for CCP, 0.857 for CAPRA, and 0.894 for CCR. Calibration plots show that CCR was better calibrated than CAPRA, and that its prediction range was wider.

Conclusion: The CCP score derived from biopsy sample was strongly associated with adverse outcome after definitive therapy. These results indicate that the CCP score can be used to guide intensity of therapeutic intervention in patients who need treatment.

Podium #80

EVALUATION OF FEMALE SEXUAL DYSFUNCTION IN ADULT ENTERTAINERS

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Presented By: Justin M. Dubin, MD

Introduction: Female Sexual dysfunction (FSD) incorporates a wide range of sexual issues within the female population, however it has not been evaluated among female adult entertainers. We evaluated the prevalence of FSD in women working in the adult entertainment industry.

Methods: A 41-question online survey was distributed to female adult entertainers via email through collaboration with the Free Speech Coalition (FSC), the North American Trade Association of the Adult Industry. Surveys were sent by the FSC to those within the Performer Availability Screening Services (PASS) database who met the criteria of having biological vaginas and having experience as adult entertainers.

The surveys were answered anonymously. Statistical analysis was performed in Microsoft Excel. The survey acquired baseline characteristics, use of contraceptives, sexual activity, work versus home satisfaction and orgasm, in addition to evaluation of female sexual function using the Female Sexual Function Index (FSFI) survey with a total score < 26.55 indicative of FSD.

Results: Of the 147 respondents, 99 met inclusion criteria of fully completing the survey, having a biological vagina, and working in the adult entertainment industry. The mean age was 34.2 ± 10.1 years (range 20-66). Based on the FSFI survey, the average FSFI score was 28.7 ± 5.6 , and of those surveyed 26.3% (26/99) of entertainers had scores indicative of FSD. Overall, women found their personal sex lives more satisfying when compared to their adult entertainment sex lives (3.99 vs 3.08 , $p < 0.01$). When comparing women with FSD to those without FSD, women with FSD had less sexual satisfaction at home (2.8 vs 4.4 , $p < 0.01$), less overall sexual events (6.1 ± 6.6 FSD vs 12.0 ± 10.0 non-FSD, $p < 0.01$), and had fewer satisfying sexual events overall (2.9 vs 10.7 , $p < 0.01$).

Conclusion: Female sexual dysfunction appears to be less prevalent amongst female adult entertainers when compared to the general population, but is more often seen in the women that have less satisfying personal sex lives. Female sexual dysfunction is prevalent amongst all women, including those within the adult entertainment industry and must be addressed during patient interactions.

Table 1: Baseline characteristics	
Age	
Mean	34.2 +/- 10.1
Median	31
Range	20 - 66
N = 99	
Obstetrics	111 (91%)
Heart disease (N)	113 (91%)
Intermarriage	
Men	42 (42.4%)
Women	113 (91%)
Multiple partners	57 (57.6%)
Monogamous	
Yes	18 (18.2%)
No	101 (91.8%)
ORP	
Yes	10 (10.1%)
No	89 (89.9%)
Contraceptive devices	
Yes	46 (46.5%)
No	53 (53.5%)
No-ORP, No device	34 (11.1%) (not compared)
FSFI (Mean +/- SD)	109.2%, 15.1%
Age 20-29 (N = 62)	27.8 +/- 3.3 (N = 36)
Age 30-39 (N = 33)	28.9 +/- 1.7 (N = 31)
Age 40+ (N = 24)	30.8 +/- 1.8 (N = 21)
FSFI overall (N=99) (26.3%)	26/99 (26.3%)

Podium #81

HIGHER TRAIT EMOTIONAL INTELLIGENCE CORRELATES TO LOWER CHRONIC SCROTAL CONTENT PAIN AND BETTER WORK ENGAGEMENT

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Presented By: Richard Mendelson, PhD

Introduction: There is scant literature exploring the relationship between chronic scrotal content pain (CSP), trait emotional intelligence (TEI), and work engagement (WE). This study analyzes the impact of TEI on the relationship between CSP and WE. Surgical interventions are available for CSP. However, there is paucity of data on how CSP affects men who are considering surgical treatment. This study attempts to better understand how these patients may respond to therapy.

Methods: 75 patients were prospectively surveyed with standardized self-reported assessment tools from July 2017 to September 2018 at initial presentation prior to surgical interventions for CSP. Measures used were: Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF), Pain Index Questionnaire-6 (PIQ-6), and Utrecht Work Engagement Scale (UWES). Linear regression analysis with a Moderator variable was performed.

Results: The data indicates a significant inverse correlation between overall TEI and CSP ($p=.004$) as well as facets of TEI including self-control and sociability (generating $p=.005$ and $p=.024$ respectively). Further, a moderator analysis was performed in order to determine whether or not TEI moderates the relationship between CSP and WE. The Adjusted R Square of .304 generated by the model summary indicates that approximately 30.4% of the variance between CSP as measured by the PIQ6 and WE, as measured by the UWES is attributed to the level of TEI that an individual possesses. The F change is 3.965 with an R Squared Change of .407. This means that while the amount of variance accounted for is 30.4%, when a moderator variable is accounted for, the accuracy of the model improves to 40.7%. Essentially, the TEI variable is the key correlator between CSP and WE. Patients with a higher trait emotional intelligence, have lower chronic scrotal pain and better work engagement.

Conclusion: This study illustrates that patients with a higher trait emotional intelligence, have lower chronic scrotal pain and better work engagement. Implications include a) the development of more effective pre and post-surgical adjunctive emotional treatment modalities, and b) pre-surgical preparation and identification of patients more likely to respond favorably to surgical intervention for chronic scrotal content pain.

Podium #82

PREOPERATIVE NARCOTIC USE IS PREDICTIVE OF HIGH POSTOPERATIVE NARCOTIC REQUIREMENTS AFTER PENILE PROSTHESIS INSERTION

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Presented By: Benjamin Dropkin, MD

Introduction: Inflatable penile prosthesis (IPP) is the most effective treatment for end-stage erectile dysfunction (ED). With over 6000 IPPs placed annually in the United States, a significant cost burden is associated with inpatient care. We sought to determine which patients have high postoperative narcotic requirements that could predict candidacy for outpatient surgery.

Methods: This was an IRB approved, retrospective review of IPP insertions, identified by CPT code 54405, between June 2013 and November 2017. Medical records were reviewed for patient demographics, medical and surgical history, and postoperative inpatient narcotic use after release from the post-anesthesia care unit. Patients were categorized into two groups based on narcotic utilization above or below the 75th percentile of morphine milligram equivalents (mme) administered. T-tests were used for continuous variables and chi-squared tests for discrete variables.

Results: We identified 242 men who underwent IPP insertion for analysis. There were 182 patients in Group 1 (< 75th percentile narcotic use) and 60 patients in Group 2 (> 75th percentile narcotic use). Mean postoperative narcotic use was 26.39 + 15.90 mme in Group 1

and 70.71 ± 24.31 mme in Group 2 (p<0.0001); median use for all patients was 34 mme. The proportion of patients using narcotics preoperatively was 14.3% in Group 1 and 41.7% in Group 2 (p < 0.001).

Conclusion: Chronic preoperative narcotic use was associated with high postoperative inpatient narcotic use. Developing algorithms to optimize IPP patient care must account for narcotic utilization in determination of candidacy for outpatient procedures.

Variable	Group 1	Group 2	p-value
Age (mean ± SD, years)	62.7 ± 9.9	61.2 ± 9.0	0.203
BMI (mean ± SD, m ²)	27.7 ± 5.3	27.7 ± 5.3	0.989
ICC (mean ± SD, mL)	68.2 ± 81.0	68.2 ± 95.0	0.911
ICC (mean ± SD, log10)	1.83 ± 0.4	1.84 ± 0.4	0.816
Offense Pre-op (days) (N not per group)	14.2	16.7	<0.0001
Pre-op Penicillin (N not per group)	10/11	10/11	0.102
History of Diabetes (N not per group)	17/8	10/8	0.012
History of Hypertension (N not per group)	19/8	17/8	0.003
History of Prostate (N of affected group)	13/4	1/3	0.194
Active Reservoir (N not per group)	14/8	11/7	0.008
Pre-Transurethral (N not per group)	14/11	14/7	0.002
Pre-Testosterone (N not per group)	6/11	6/7	0.004
Postoperative catheterization prior to discharge (N not per group)	1/4	1/7	0.012

Podium #83
INTRA-OPERATIVE USE OF BETADINE IS ASSOCIATED WITH AN INCREASED RATE OF PENILE PROSTHESES INFECTIONS

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Mayo Clinic
 Presented By: Jack Andrews, MD

Introduction: Although inflatable penile prostheses (IPP) represent the gold standard for medically refractory erectile dysfunction (ED) with excellent long-term outcomes, infection remains a significant complication. In our clinical practice, we noted a persistently high infection rate, despite use of multiple anti-infective protocols (no-touch, IV antibiotics, post-op antibiotics, antibiotic impregnated devices, etc.). To address this issue, we switched from using intra-operative Betadine as a routine irrigant to Vancomycin/Gentamicin. The objective of the current abstract was to compare infection rates prior to and following changes to the intra-operative irrigating fluid.

Methods: We reviewed a prospectively-maintained, consecutive database of men undergoing penile prostheses at our institution to compare infection rates prior to and following a change from Betadine to Vancomycin/Gentamicin irrigant. No other changes to operative or perioperative techniques occurred following the change in irrigation solution. Potential confounders were reviewed, including patient demographics, comorbidities, type of surgery (primary, revision, salvage), number of prior prostheses, and adjunctive techniques. Univariate and regression analyses were performed to analyze for statistical significance.

Results: A total of 217 patients (mean age, 65 years) underwent IPP placement at our institution from January 2014 through April 2018, of whom 8% experienced infections (including primary, revision, salvage cases). Overall, 152 (70%) received irrigation with Betadine compared to 65 (30%) with Vancomycin / Gentamicin. On univariate analysis, Vancomycin / Gentamicin significantly reduced the infection rate (1.5% vs 13.2% with Betadine, p=0.006). Significance was maintained after controlling for age, BMI, Charlson Comorbidity Index, smoking, diabetes, primary vs revision/salvage, prior penile surgery, use of ectopic reservoir, and adjunctive glanulopexy. Although the underlying mechanism for the difference in outcomes was not studied in the current analysis, the authors hypothesize that it may potentially relate to the relative toxicity of Betadine to intra-scrotal tissues or non-sterile nature of Betadine.

Conclusion: Changing from intra-operative Betadine to Vancomycin / Gentamicin solutions significantly reduced infection rates among men undergoing placement of an IPP. Although these data are not randomized and represent a single center, given the common use of Betadine during IPP surgeries (washout procedures), further study is warranted.

Podium #84

INTRALESIONAL COLLAGENASE CLOSTRIDIUM HISTOLYTICUM CAUSES MEANINGFUL IMPROVEMENT IN MEN WITH PEYRONIE'S DISEASE: THE RESULTS OF A MULTI-INSTITUTIONAL ANALYSIS

Hoang Minh Tue Nguyen, Wayne J. G. Hellstrom, Laith Alzweri, Amanda Chung, Ramon Virasoro, Ashley Tapscott, Matthew Ziegelmann, Landon Trost, Martin Gelbard

Tulane University School of Medicine

Presented By: Hoang Minh Tue Nguyen, MD

Introduction: Peyronie's disease (PD) affects 3-13% of the adult male population. Collagenase Clostridium histolyticum (CCH) is an injectable agent that enzymatically degrades the abnormal interstitial collagen in PD plaques, and was documented in the IMPRESS trials to reduce penile curvature by an average of 35%. Though a number of single center studies have evaluated the safety and efficacy of CCH in different settings with varying protocols, there have not been any published studies analyzing the effect of CCH on patients with PD in a multi-institutional analysis following the IMPRESS trials protocol. We evaluated, in a real-world setting, the efficacy/safety outcomes of multiple high-volume centers employing CCH to treat PD.

Methods: Retrospective data were collected for consecutive patients with PD who underwent treatment with CCH between April 2014 and March 2018 at five institutions. 918 patients were included. Main outcomes of interest include the change in curvature after receiving CCH therapy, and frequency of serious treatment-related adverse events. Other variables of interest included patient age, penile curvature measurements (defined as the largest single plane curvature), curvature direction, plaque location, duration of PD, and number of CCH cycles received. Two-tailed paired Student t-test was used for comparisons of continuous variables. Univariate and multivariate logistic regression analyses were performed to assess predictors of success of CCH therapy in improving curvature, defined as a $\geq 20\%$ improvement in curvature, and global response scores.

Results: For the 918 patient cohort, curvature improved from a mean of 48.2° pre-treatment to 32.9° post-treatment ($p \geq 20\%$ improvement in curvature. 502 patients had completed four or more cycles. For them, curvature improved from a mean of 49.7° pre-treatment to 32.7° post-treatment ($p \geq 20\%$ improvement in curvature. 9% of patients experienced a complication from treatment. Number of cycles of CCH received was the only predictor of improvement in curvature in the multivariate logistic regression (coefficient=0.33, $p < 0.0001$).

Conclusion: This large multi-institutional analysis confirms the safety and efficacy of CCH therapy in men with PD. Intraleisional CCH for PD following the IMPRESS trial protocol produced an improvement in penile curvature in men with PD with a low rate of complications.

Podium #85

ADHERENCE TO XIAFLEX (COLLAGENASE CLOSTRIDIUM HISTOLYTICUM) LABEL RECOMMENDATIONS AND PROVIDER SATISFACTION: A SURVEY OF INTERNATIONAL SOCIETY FOR SEXUAL MEDICINE MEMBERS

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Presented By: Alexander Galante, MD

Introduction: Xiaflex (collagenase clostridium histolyticum) is the only FDA-approved medication for treatment of Peyronie's disease in patients with a palpable plaque and curvature of at least 30 degrees since 2013. It is unclear how practitioners actually use Xiaflex in their own practices. The objectives of the study were: 1) to identify variability in practice patterns for Xiaflex among practitioners, 2) to assess adherence to the package insert instructions and 3) to evaluate whether provider satisfaction was associated with adherence to instructions.

Methods: A 30-question online survey was distributed to 1,270 members of the International Society for Sexual Medicine (ISSM) from the EU, USA, Canada and Australia. Of the 30 questions, 10 survey questions had only one response consistent with the Xiaflex package insert recommendations. An "adherence" score was calculated for each survey participant

depending on how many of these questions were answered correctly. The average adherence scores of various groups were compared using a student's t-test. A chi-squared test was used to determine association between categorical variables.

Results: Of 202 total responses, 132 practitioners reported using Xiaflex out of 1,270 ISSM members from countries where Xiaflex is available (10.4% response rate). Only 122 Xiaflex users completed the entire survey. Practitioners from the USA had significantly better adherence scores than those outside the USA (average 7.7 vs 5.9, p20 uses) were more likely to be satisfied than less experienced users (<10 uses) (p=0.046). Satisfied users of Xiaflex did not have significantly different adherence scores than non-satisfied users (p=0.08). Limitations were a low survey response rate, omission of some answers from some survey participants, and recall bias.

Conclusion: There appears to be wide variability in Xiaflex practice patterns among the international urology community. Even though 67% of practitioners believed they followed the package insert guidelines, only 11% adhered to all the recommendations evaluated by the survey. More experienced users and practitioners outside the USA tended to be more satisfied with the product. Treatment adherence to package insert guidelines does not appear to be associated with provider satisfaction.

Podium #86

EVALUATION OF THE IMPACT OF MARIJUANA USE ON SEMEN QUALITY: A PROSPECTIVE ANALYSIS

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Presented By: Omer Raheem, MD

Introduction: The use of marijuana has been increasing among U.S. men of reproductive age and its recreational consumption was legalized in Washington State (WS) on November 12th, 2012. Marijuana and its active metabolite tetrahydrocannabinol (THC) can alter the signaling system within spermatozoa which may result in negative effects on spermatogenesis and male fertility. We aimed to characterized differences in semen quality among men with variable consumption of marijuana.

Methods: We prospectively evaluated semen analyses (SA) from men who presented for infertility evaluation at a single male fertility laboratory. Semen analyses were performed from July 2017 to April 2018. All participants completed a reproductive health questionnaire which included specific queries on past and present marijuana consumption. Questionnaire data included age, ethnicity, marijuana use (≤ 1 or >1 time per week), duration (months), and tobacco smoking. SA was performed in accordance with World Health Organization (WHO) 2010 criteria. SA parameters included volume (mL), concentration (million/mL), motility (%), progressive motility (%), rapid and linear motility (%) and strict normal morphology (%).

Results: A total of 409 patients underwent SA and completed the questionnaire of which 174 (43%) men reported marijuana use (ever users.) Among the ever users, current and past users compromised 71 (18%) and 103 (25%) respectively. Compared to non-user, semen quality was significantly decreased in volume, concentration, morphology, total motile count (TMC) and total progressive motile count (TPMC) compared to never users (Table 1). In multivariate logistic regression analyses, controlling for age, marijuana use was associated with increased odds of abnormal morphology (OR 2.28 (95% confidence interval (CI): 1.52-3.43)), volume (OR 2.02 (1.04-3.94)), and TPMC (OR 1.8 (1.05-3.06)). There was no significant association between marijuana use and sperm concentration, motility or progressive motility as solitary parameters.

Conclusion: Marijuana use is common among men presenting for fertility evaluation in our cohort and may have a detrimental effect on semen quality, particularly morphology, volume, and TPMC. Given these findings, large, prospective studies of both semen quality and fertility in this growing, at-risk population are warranted.

Podium #87

IN VITRO PROPAGATION OF KLINEFELTER SYNDROME SPERMATOGENIAL STEM CELLS: A TRANSLATIONAL SYSTEM FROM MOUSE TO HUMAN

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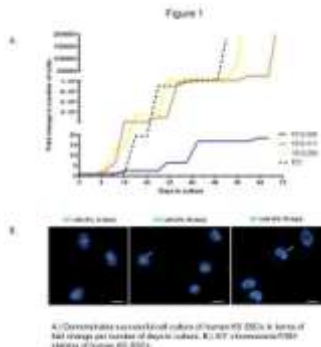
Presented By: Nicholas Allen Deebel, MD

Introduction: Klinefelter Syndrome (KS) is defined by masculine phenotype and aneuploidy (most frequently 47,XXY). The onset of puberty in KS patients is associated with progressive testicular fibrosis, loss of spermatogonial stem cells (SSC), and impaired fertility. While it is feasible to cryopreserve SSCs from KS patients for future fertility treatments such as SSC transplantation or *in vitro* spermatogenesis, the adaptation of current SSC propagation systems for KS patients must be demonstrated. This work demonstrates the *in vitro* culture of a KS mouse model as well as KS human tissue.

Methods: KS postnatal mouse testicular tissue was obtained from the previously designed and characterized UCLA model. KS human tissue was donated by patients enrolled in the experimental testicular tissue bank at Wake Forest Baptist Health. Selected patients underwent peripheral blood karyotyping and were demonstrated to be non-mosaic 47,XXY. Testicular cells were extracted from previously cryopreserved tissue and propagated in long-standing culture based on an adapted version of our previous method with normal human testes. These cells were further characterized with q-PCR, digital-PCR, Flow Cytometry and Magnetic Activated Cell Sorting, next generation sequencing (NGS)-based molecular karyotyping and X/Y chromosome FISH staining.

Results: The mouse and human KS cells were isolated and propagated in culture for at least 80 days. The presence of Spermatogonia, Leydig, Sertoli, and Peritubular cells were confirmed with cell specific gene expression. The population of ZBTB16+ undifferentiated spermatogonia was consistently identified throughout all stages of culture. This was reinforced by the detection of HLA-CD9+/CD49f+ stem cells throughout culture. FISH staining for X/Y chromosomes showed that most cells in culture were XXY. However, subpopulations of XY and XX cells were observed; representing 4% and 2% of all propagated cells respectively. The XX and XY subpopulations were enriched with MACS for CD9 as an enriched spermatogonia marker. NGS testing showed all cells being 47,XXY (with 90% sensitivity of mosaicism detection).

Conclusion: To the best of our knowledge, this is the first study to demonstrate the successful isolation and propagation of mouse and human KS testicular cells. It is our belief that these findings will expand the therapeutic arsenal for azoospermia in KS patients through both *in vitro* or *in vivo* avenues.



Podium #88

COMPARISON OF OUTCOMES IN SALVAGE ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY FOR POST-PRIMARY RADIATION VS. ABLATION THERAPIES

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Presented By: Fikret Fatih Onol, MD, FEBU

Introduction: Salvage robotic-assisted laparoscopic prostatectomy (sRALP) represents a feasible option for local failure after primary non-surgical therapies. Outcomes of sRALP in post-primary radiation (RAD) vs. ablation (ABL) therapies were not thoroughly investigated. We aimed to compare clinical and oncological outcomes in these patients by examining the largest single-surgeon sRALP series reported to date.

Methods: We retrospectively reviewed our IRB-approved database including >11.500 RALP cases. Between July 2008 and April 2018, 121 patients underwent sRALP by a single surgeon (VP). Of these, 90 (74.3%) and 31 (25.7%) patients had underwent RAD and ABL, respectively; including external beam radiation (EBRT, n=37), intensity modulated radiation (n=14), proton beam radiation (n=3), brachytherapy (n=22), combined EBRT and brachytherapy (n=14), HIFU (n=9), cryoablation (n=18), and other (electroporation, microwave, n=4) therapies. We analyzed the differences in clinical and oncological outcomes between RAD and ABL groups by using t-test, chi-square and Fisher's exact tests.

Results: Preoperative characteristics were similar between 2 groups, except for sexual function (Table 1). Before surgery, 38% of patients in ABL group were potent as compared to 18% in RAD group (p=0.06). Operative times, perioperative complication rates, postoperative catheter duration and cystographic leak rates were not significantly different between 2 groups (Table 1). At final pathology, ABL group showed higher non-organ confined disease rates (71% vs 47.8%, p=0.036) and higher positive surgical margin (PSM) rates as compared to RAD group (45% vs. 17%, p=0.004).

Based on functional outcomes follow-up data (n=105), 9.7% of men in RAD and 26% of men in ABL group achieved potency (p=0.125) at a median 24.2 months follow-up (range: 3-116). Postoperative full continence (no pads/day) and social continence (0-1 pad/day) rates were significantly higher in ABL as compared to RAD group (73.9% vs. 46.3%, p=0.031 and 88.9% vs. 54.7%, p=0.012, respectively). Full continence rates at 3, 6, 9, and 12 months were significantly higher in ABL group (Table 1).

Conclusion: All salvage prostatectomies are not the same. When discussing sRALP, patients should be warned that RAD is associated with higher postoperative incontinence rates and ABL is associated with higher non-organ confined disease and PSM rates.



Podium #89

THE RATIO OF ATPASE6:ATPASE8 AS A URINE BIOMARKER FOR THE DETECTION OF PROSTATE CANCER

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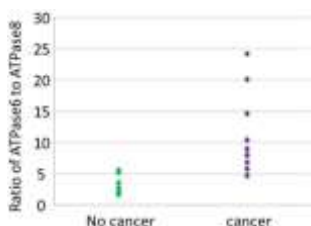
Presented By: Rebecca Susan Arnold, MS, PhD

Introduction: Elevated PSA screening test results can lead to a prostate biopsy which frequently results in no aggressive cancer or indolent cancer (Grade Group 1), reflecting suboptimal specificity of PSA for detection of aggressive variants of prostate cancer. A more accurate noninvasive biomarker for prostate cancer could greatly benefit those men who undergo unnecessary biopsies. The objective of this study was to determine the feasibility of using mitochondrial derived biomarkers to improve prostate cancer screening.

Methods: Post-DRE urine specimens were collected from study participants as part of the NCI Early Detection Research Network Emory-Harvard-U.Washington Prostate Cancer Biomarker Clinical Validation Center. RNA was extracted from urine pellets from patients without prostate cancer (biopsy negative; N=6) or patients with a confirmed diagnosis of prostate cancer (N=9) and cDNA was prepared. Semi-quantitative realtime PCR was performed using primers designed to amplify regions of mitochondrially transcribed ATPase8 and ATPase6 as well as actin. The ratio of ATPase6 to ATPase8 was calculated and p-values calculated by ANOVA and the Kruskal-Wallis test. The presence of mitochondrially encoded ATPase6 and ATPase8, and not nuclear encoded pseudogenes, was verified through TA cloning followed by sequencing.

Results: The ATPase6:ATPase8 mean values for cancer patients compared to non-cancer patients were statistically different, 11.5 ± 6.8 and 3.5 ± 1.6 respectively ($p = 0.003$). Using a cutoff value of 5.0 the specificity of the test is 67% and the sensitivity 89%. Using a cutoff value of 6.0, the specificity is 100% and the sensitivity 78%.

Conclusion: In an initial cohort of urine pellets from 15 patients, the ratio of mitochondrially encoded ATPase6:ATPase8 transcripts is statistically significantly higher in the cancer patients compared to the non-cancer patients. While PSA screening may affect a substantial public health benefit by way of reduced prostate cancer mortality, the drawbacks of over diagnosis and overtreatment compel the need for improvement in early detection. Our findings suggest potential utility of this non-invasive, urinary biomarker as a tool that could enhance prostate cancer detection, and provide rationale for larger cohort studies to validate its sensitivity and specificity in predicting prostate cancer to enhance selection of men for prostate biopsy.



Podium #90

COMPARISON OF BI-PARAMETRIC MRI TO FULL MULTIPARAMETRIC MRI FOR DETECTION OF CLINICALLY-SIGNIFICANT PROSTATE CANCER

Rachael Sherrer¹, Zachary Glaser¹, Jennifer Gordetsky^{1,2}, Jeffrey Nix¹, Kristin Porter³, Soroush Rais-Bahrani^{1,3}

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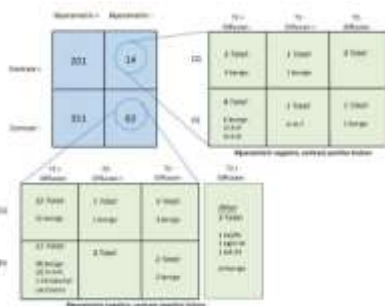
Presented By: Rachael Leigh Sherrer, BA

Introduction: Multiparametric magnetic resonance imaging (MP-MRI) and MRI/Ultrasound (US) fusion-guided biopsy are becoming more widely used techniques for prostate cancer (PCa) diagnosis and management. However, their widespread adoption and use, where available, are limited by cost and added time. These limitations could be minimized if the dynamic contrast enhanced (DCE) phase of the full MP-MRI is eliminated and a Bi-parametric MRI (BP-MRI) focusing on T2-weighted and diffusion-weighted imaging is performed. Herein, we report the cancer detection rate of BP-MRI compared with full MP-MRI and consider the clinical significance of cases identified on MRI-targeted biopsy.

Methods: Biopsy-naïve and prior negative biopsy patients with clinical suspicion for PCa underwent MP-MRI with an imaging protocol incorporating narrow field-of-view T2-weighted, diffusion-weighted, and DCE pelvic MRI. Then patients underwent MRI/US fusion-guided biopsy of target lesions between November 2013 and October 2017. The pathology results were compared to the positivity of each imaging sequence to define the differential value of the DCE sequence compared to the BP-MRI findings alone.

Results: There were 648 targeted lesions biopsied in 344 patients. We defined biparametric screen filter positivity as both T2W and DWI positivity for the same lesion. The majority of target lesions (552/648, 85%) were screen filter positive. For those that were screen filter negative, a minority (14/96, 15%) had DCE positive findings. Of these, all but one cancer positive case was seen on T2W imaging. For those 82 that were screen filter negative and DCE negative, the DCE phase would not have added imaging suspicion. Only 3/82 (3.7%) were cancer positive; two with low-risk, GG1 cancer and one with intraductal carcinoma variant histology, all identified and targeted based on T2-weighted MRI positivity.

Conclusion: BP-MRI for the evaluation of PCa and for guiding MRI/US fusion-targeted biopsy has the advantages of reducing cost, time, and contrast exposure of MP-MRI by eliminating the DCE phase. These benefits are realized without forfeiting valuable diagnostic information, as shown by the similar cancer detection rates of BP-MRI and MP-MRI in this study, particularly for clinically-significant cases of PCa.



Podium #91
**ESTABLISHING A MULTI-PARAMETRIC MRI FUSION PROSTATE BIOPSY PROGRAM:
IS THERE A LEARNING CURVE?**

Daniel Zapata¹, Patrick Probst¹, Ryan Russell², Michael Haillemariam², Robert Wake¹

¹UTHSC Memphis, Urology Department, ²UTHSC Memphis, College of Medicine

Presented By: Daniel Fernando Zapata, MD

Introduction: Multi-parametric MRI (mpMRI) is an important supplementary tool for the diagnosis of prostate cancer. Our mpMRI-US fusion biopsy program began in January of 2017. We analyzed our first 100 prostate mpMRIs, subsequent MRI-US biopsies and compared our results with the PRECISION trial results.

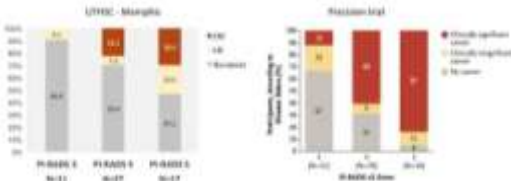
Methods: We retrospectively reviewed 100 men who underwent mpMRI due to persistently elevated PSA after a negative 12-Core TRUS guided biopsy. In patients undergoing mpMRI-US biopsies, 3-6 targeted cores were taken from each PI-RADS lesion. Demographic, clinical, pathological and oncological data were collected and compared with the PRECISION trial results.

Results: Of the 100 men that underwent mpMRI, 3 were excluded. Two were diagnosed with metastatic disease and one refused biopsy. Of the remaining 97, the majority were white (76%, 74/97). Mean PSA was 6.6 (4.65 – 9.6), %Free PSA was 16% (12.5 - 20) and mean BMI was 29.1 (18.78 – 40.32). 19% of men had a PI-RADS 5 lesion. 28% had a PI-RADS 4 lesion. 17% had a PI-RADS 3 and 11% had a PI-RADS 2 lesions. Twenty –four of the 97 (25%) mpMRIs were negative.

Patients with PI-RADS 3, 4 or 5 lesions underwent mpMRI-targeted fusion biopsies. Clinically significant cancer (GS 7 or above) was found in 5 of the 17 PI-RADS 5 lesions (29.4%), 6 of the 27 PI-RADS 4 (22.2%) and none of the 11 PI-RADS 3 (0%) compared to detection rates of 83%, 60% and 12% for PI-RADS 5, 4 and 3, respectively, in the PRECISION trial.

Conclusion: Compared to the PRECISION trial, our detection rate for clinically significant cancer was significantly lower. Plausible explanations are: 1. Our patients all had previous negative biopsies unlike the biopsy naïve patients in the PRECISION trial, 2. Overdiagnosis of PI-RADS 4 and 5 lesions and 3. Inaccurate targeting is certainly possible but less likely as the PRECISION trial included biopsy results from Urologists with a wide range of experience suggesting targeting has less inconsistency. Since radiologic acquisition and reporting of mpMRI has the steepest learning curve, we believe this is the most plausible explanation for our results. We hope to determine the threshold of prostate mpMRIs needed to reach accepted published standards.

Results of biopsy by PI-RADS lesions



Podium #92

COMPLICATIONS AFTER TRANSPERINEAL PROSTATE BIOPSY AMONG MEN WITH EMPLOYER BASED INSURANCE COVERAGE

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Presented By: KC Biebighauser, MD

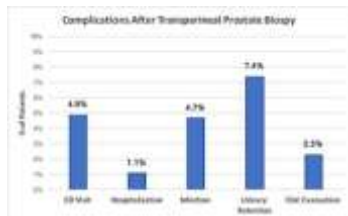
Introduction: In response to rising risk of infectious complications following transrectal ultrasound guided prostate biopsies, advocates of transperineal prostate biopsy purport a near-zero risk of infectious complications and decreased need of peri-procedural antibiotics compared to traditional transrectal prostate biopsy. This study aimed to evaluate the population-level incidence of complications after transperineal prostate biopsy.

Methods: Using a database on employer-based private insurance claims, we identified men less than 65 years old who underwent transperineal prostate biopsy (CPT 55706) from 2009 – 2015. Procedure and diagnosis codes were used to identify infectious, bleeding, and urinary retention complications associated with claims for hospitalization, emergency department (ED) and clinic visits within 30 days after transperineal prostate biopsy. Bivariate and multivariate analyses were performed to assess associations between outcomes of interest and pertinent patient covariates.

Results: We identified 2206 claims for transperineal prostate biopsy episodes. 45.8% of patients were between 60-64 years old, 31.7% between 55-59, and 22.4% less than 55 years old. 50% of biopsies were performed in the Southern region of the United States. Within 30 days of biopsy, 4.9% of patients visited the ED and 1.1% of patients were hospitalized. Across all settings (hospital, ED, and clinic visits) infectious complications occurred in 4.7% of patients and urinary retention in 7.4% of patients. Overall, 2.3% of the episodes required cystoscopy with clot evacuation. After adjusting for other factors, age and prior diagnosis of diabetes were not significantly associated with any complication. Patients treated in a rural setting were more likely to have all forms of complications compared to patients treated in a metropolitan area (p value < 0.001).

Conclusion: Despite other claims of minimal risk with transperineal prostate biopsy, complications of infection, urinary retention and bleeding do occur. Future studies will assess the impact on biopsy approach and antibiotic management on these outcomes.

Figure. Complications after transperineal prostate biopsy.



Podium #93

INCREASED ADOPTION AND UNDERUTILIZATION OF HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) IN THE UNITED STATES FROM 2008-2014

Jennifer Robles, MD¹, Vernon Pais, MD², Nicole Miller, MD¹

¹Vanderbilt University Medical Center, ²Duke University Medical Center

Presented By: Jennifer Robles, MD

Introduction: With multiple randomized controlled trials supporting its use, Holmium Laser Enucleation of the Prostate (HoLEP) is recommended as first line therapy for men with benign prostatic hypertrophy (BPH) in the European Association of Urology guidelines. In the United States (U.S.) there is increasing recognition of its benefits but relatively few HoLEP providers and HoLEP rates are unknown. This study aims to assess national HoLEP adoption rates and regional trends from 2008-2014.

Methods: We retrospectively analyzed a dataset of 100% Medicare claims at three time points (2008, 2011 and 2014) to determine the rate of U.S. HoLEP adoption using Current Procedural Terminology (CPT) codes for HoLEP and other BPH treatment modalities. Rates were adjusted

by age and race and stratified by Hospital Referral Region (HRR). Linear and logistic regression models were used to assess for trends in HoLEP adoption over time. Maps of regional trends were created using Tableau v.10.5.

Results: The number of total U.S. BPH cases decreased from 109,809 in 2008 to 83,956 in 2014 and the number of HoLEP cases increased significantly from 1086 in 2008, to 3062 cases in 2011, to 3368 in 2014. Nevertheless, HoLEP still accounts for a very small proportion of total BPH cases (from 1% in 2008 to 4% in 2014). In 2008 only 28/306 (9%) of hospital regions recorded >10 HoLEPs/year, but this increased to 89 HRRs (29%) in 2011 and 94 HRRs (31%) in 2014 (see Figure 1). Conversely the number of HoLEPs done in low-volume centers (<10 HoLEPs/year) decreased from 40% in 2008 to 15% in 2014. No significant regional trends were found over time.

Conclusion: Based on this 100% sample of Medicare claims, surgical BPH treatment volume has decreased from 2008 to 2014 while HoLEP volume and regional adoption have tripled. However, rates of HoLEP remain extremely low at just 4% of all BPH procedures in 2014. Only 31% of hospital regions in 2014 recorded >10 HoLEPs/year and no significant regional trends were identified. This data indicates that while HoLEP adoption in the U.S. has increased, it is substantially under-utilized and the majority of regions still lack access to centers performing >10 HoLEPs/year.



Podium #94

ASF1B AS A POTENTIAL TARGET TO ATTENUATE HYPER-PROLIFERATION IN BENIGN PROSTATE HYPERPLASIA (BPH)

Paul Knoll, MD, Tiffany Perkins, MD, Samarjit Rai, MD, Jamie Messer, MD, Murali Ankem, MD
University of Louisville

Presented By: Samarjit Rai, MD

Introduction: Benign Prostate Hyperplasia (BPH) is enlargement of the prostate, which occurs in 50% men above 50 years of age. Alpha-adrenergic blockers and 5-alpha-reductase inhibitors are the standard medical therapy for BPH. However, these treatments eventually cause resistance and may cause significant side effects in patients. Understanding the molecular pathogenesis of BPH may reveal novel preventive or therapeutic targets for BPH.

Methods: Normal Human Prostate Epithelial Cells (HPrEpC) RWPE-1 and Benign Prostate Hyperplasia (BPH) were utilized for RNA sequencing and molecular studies. To determine the cell cycle regulators in BPH and RWPE-1 cells, Real time PCR, Western blot and cell cycle analysis was performed. The kinetics of cell cycle progression was estimated by subjecting the cells and cell lysates collected at successive time-points post serum starvation to cell cycle and

Western blot analysis respectively. Knock down experiments were conducted to understand the function ASF1B (Anti-Silencing Function 1B Histone Chaperone) in normal and BPH cells.

Results: RNA sequencing analysis revealed that the expression of ASF1B was over 80 times upregulated in BPH as compared to normal prostate epithelial cells. Expression of ASF1B was specific to BPH as confirmed by Western blot results. Induction of ASF1B expression correlated in a time-dependent manner with the increased expression of G1 (cdk4, 6 and cyclin D), G1-S (cdk2) and S-phase (cdk2 and cyclin-A) regulators at both transcription and translation levels. The cell cycle analysis at sequential time-points revealed that the BPH cells entry to G0/G1 phase was achieved earlier than the normal prostate epithelial cells. Knocking down ASF1B expression by siRNA inhibited the proliferation of BPH cells and downregulated the expression of cdk-4, cdk-2, cyclin A1, E2F1 and CHK1. Studies are ongoing to validate the expression of ASF1B in clinical specimen.

Conclusion: Our studies suggest that ASF1B is a G1 and S phase regulator which are critical phases for hyper-proliferative BPH cells. Decoy or small drug molecules targeting ASF1B expression maybe used in combination with finasteride to achieve safer and improved treatment with less resistance for BPH.

Podium #95
12 MONTH RESULTS OF THE PROSTATIC URETHRAL LIFT STUDY FOR OBSTRUCTIVE MEDIAN LOBE

Gregg R Eure¹, Daniel B Rukstalis²
¹Urology of Virginia, ²Wake Forest Baptist Health
Presented By: Gregg R. Eure, MD

Introduction: The Prostatic Urethral Lift (PUL) procedure for benign prostatic hyperplasia (BPH) delivers rapid, significant, durable symptom relief with low morbidity and no sexual dysfunction. To date, the evidence has been from studies of men with lateral lobe enlargement only (LL). The objective of this study was to determine the safety and effectiveness of a new PUL technique to treat obstructive median lobe (OML) and to compare results with those from the L.I.F.T. study.

Methods: The MedLift clinical trial was an extension of the L.I.F.T. randomized study. Inclusion criteria were the same as those in the L.I.F.T. study (age ≥ 50 years, AUASI ≥ 13, peak flow rate (Qmax) ≤ 12 mL/s and prostate volume ≤ 80cc) except that OML was required. During the PUL procedure, small UroLift® implants were placed to retract the lateral lobes. If OML remained, a modified technique using the same design UroLift® system was used to deploy implants into the median lobe to create an unobstructed anterior channel. LUTS, quality of life (QOL), Qmax and sexual function were compared to L.I.F.T. study results at 12 months.

Results: 45 subjects were treated. Compared to LL subjects in the L.I.F.T. study, OML subjects experienced significantly better symptom response (Table 1). AUASI improvement for OML subjects was at least 13.4 points at 1, 3, 6 and 12 months and significantly better than baseline at every time point (p60% and >70%, respectively at 3, 6 and 12 months). Qmax improved 90-130% throughout follow up. At 1 month, 65% subjects reported ≥ 80 on the Quality of Recovery scale, 80% reported being “much” or “very much better,” and 89% would recommend the procedure. Erectile function as measured by IIEF-5 remained stable and ejaculatory function (MSHQ-EjD score) was significantly improved throughout follow up (p< 0.001). There were no reports of de novo chronic erectile or ejaculatory dysfunction.

Conclusion: PUL may be safely and effectively used to treat OML patients and is supported by a new FDA indication. Subjects in this study experienced excellent symptom improvement, recovery and preservation of sexual function.

Table 1. 12 Month Comparison of Symptom and Quality of Life Response by LL							
	Obstructive Median Lobe N=41			Lateral Lobe Only N=123			P-value
	Baseline	12 Months	Change	Baseline	12 Months	Change	
AUASI	14.1 ± 5.0	16.6 ± 7.0	-2.5* ± 1.7	22.1 ± 5.4	19.5 ± 7.3	-2.6* ± 7.3	0.03
QOL	6.9 ± 0.8	5.9 ± 1.3	3.0* ± 1.5	6.6 ± 1.0	5.3 ± 1.6	3.3* ± 1.6	0.01
Qmax*	7.1 ± 2.7	5.5 ± 1.8	0.4* ± 1.4	8.0 ± 2.4	12.3 ± 5.3	-4.0* ± 6.5	0.00
IPSS	7.7 ± 2.8	5.1 ± 2.5	0.0* ± 1.1	6.8 ± 2.8	2.8 ± 0.9	-4.0* ± 3.3	0.007
IIEF-5	16.1 ± 6.0	16.6 ± 6.5	1.3 ± 5.6	16.8 ± 7.8	17.2 ± 7.6	0.3 ± 5.1	0.8
MSHQ-EjD	6.4 ± 1.1	5.1 ± 2.8	1.0* ± 2.8	6.7 ± 3.3	10.3 ± 3.3	3.6* ± 1.7	0.0
MSHQ-EjD better	1.6 ± 1.7	0.9 ± 1.1	0.6* ± 1.8	2.2 ± 1.7	1.4 ± 1.4	0.8* ± 1.5	0.7

* indicates significant change from baseline

Posters

Poster #1

MOSES AND THE STONE: IN VITRO COMPARISON OF A NOVEL LASER TECHNOLOGY TO SHORT AND LONG PULSE IN AN AUTOMATED, HANDS-FREE MODEL

Brenton Winship, MD¹, Daniel Wollin, MD¹, Russell Terry, MD¹, Evan Carlos, MD¹, Jingqiu Li², Chloe Peters³, W. Neal Simmons, PhD⁴, Glenn Preminger, MD¹, Micheal Lipkin, MD¹

¹Duke University Division of Urology, ²Duke-NUS Medical School- Singapore, ³Duke University School of Medicine, ⁴Duke University Department of Mechanical Engineering

Presented By: Brenton Winship, MD

Introduction: Moses technology is a novel Holmium:YAG laser pulse delivery system designed to minimize urinary stone retropulsion and improve stone fragmentation even when the laser is not in direct contact with the stone. Our aim was to assess the ablation efficiency of Moses technology in laser lithotripsy using an *in vitro* "dusting model" of stone comminution.

Methods: All tests were conducted using a Lumenis Pulse 120H Holmium:YAG laser with a 365µm Moses fiber. "Hard" (15:3) and "soft" (15:6) BegoStones mimicking calcium oxalate monohydrate and uric acid stones, respectively, were used. To assess stone ablation efficiency and fiber tip degradation, an automated hands-free dusting model was employed: the laser tip was moved by a 3-dimensional positioning system in a spiral motion across a flat Begostone surface submerged in water. Ablation efficiency was measured as the loss of stone mass after 4kJ of energy delivery. Fiber tip degradation was measured at 1kJ intervals. Comparative trials at short pulse, long pulse, Moses-contact and Moses-distance settings were completed with the laser tip positioned at 0, 1, and 2mm distances from the stone surface at energy settings of 0.4J delivered at 70Hz.

Results: In our dusting model, stone ablation was significantly greater the closer the laser tip was to the stone surface. On hard stones, pulse type did not have a significant impact on stone comminution at any distance. On soft stones at 0mm, Moses-contact produced the greatest amount of comminution, significantly greater than long pulse ($p < 0.05$) and trending toward significance relative to short pulse. At 1mm, Moses-distance produced significantly greater comminution than all other settings ($p = 0.025$) and was as effective as long or short pulse at 0mm (Figure). Fiber tip degradation was minimal and there was no significant difference between any laser settings.

Conclusion: In an *in vitro* dusting model, the novel Moses Holmium:YAG laser technology provides greater comminution of soft stones when in contact with the stone surface and enables effective comminution at 1mm from the stone surface. Further clinical studies are warranted to assess the clinical utility of this new technology.

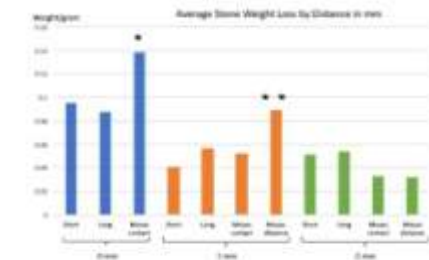


Figure: Stone weight loss (mg) per 4kJ by stone distance and pulse type. * greater than long pulse ($p < 0.05$); ** greater than other settings at 1mm ($p < 0.025$).

Poster #2

24-HOUR URINE CALCIUM OXALATE SUPERSATURATION RISK CORRELATES WITH CT VOLUMETRIC CALCIUM OXALATE STONE GROWTH

Stanislav Yuzhakov, BS, Shavano Steadman, BS, Brandon Otto, MD, Vincent Bird, MD, Benjamin Canales, MD, MPH

University of Florida, Gainesville, FL

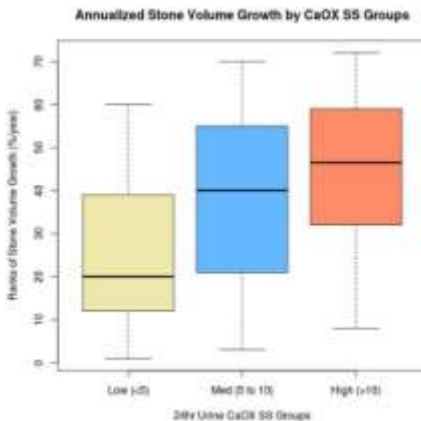
Presented By: Stanislav Yuzhakov

Introduction: *In vitro* studies have shown that calcium oxalate supersaturation (CaOX SS) principally drives CaOX stone formation and growth. As this has not been previously validated in humans, the objective of this study was to investigate the link between 24-hour urine CaOX SS and “*in vivo*” CT stone growth.

Methods: From a database of 368 patients with >70% CaOX stone composition, we identified 72 individuals who, prior to stone intervention, obtained at least two separate CT scans and at least one 24-hour urine collection between the CT studies. In addition to demographic and laboratory data, two reviewers, blinded to each other’s findings, calculated bilateral 3D kidney stone volume using an ROI Pen Tool (Visage 7® Platform) on all image series. When measurements differed by >10%, a third reviewer served as an arbitrator. The difference between first and second CT was divided by time between scans, yielding % stone volume growth per year (%/year). CaOX SS were grouped into low (<5), medium (5-10), and high risk (>10). Statistical significance between groups was assessed by the Kruskal-Wallis test.

Results: All 72 individuals had stone growth as measured by 3D CT with mean interval between studies of 7 +/- 6 months. Inter-reviewer reliability of CT volume measurement was well correlated at 0.98 (Gwet’s AC2), and an arbitrator was only needed in 14/144 (10%) cases. Median stone % growth/year was 29%, 77%, and 169% for low, medium, and high risk groups, respectively ($p = 0.02$; Figure). Despite marked inter-individual stone growth variation, a best fit line of log mean CaOX SS vs. log stone volume growth rate (%/year) showed a positive moderate correlation (Pearson’s $r = 0.39$, $p < 0.001$).

Conclusion: In our population of pure calcium oxalate stone formers, increased 24-hour CaOX SS risk was associated with increased stone growth rate. Further investigations into the variations between individuals and impact of other modulators on stone growth may allow for better stone prediction and stone growth simulators.



Poster #3

SPECIFIC GUT BACTERIA ARE RESPONSIBLE FOR ABSORPTIVE HYPERCALCAIURIA USING A NEW ANTIBIOTIC RODENT MODEL

Paul Dominguez Gutierrez, PhD, Pedro Espino-Grosso, MD, Raghav Pai, BS, William Donelan, PhD, Benjamin Canales, MD

University of Florida

Presented By: Paul Dominguez-Gutierrez, PhD

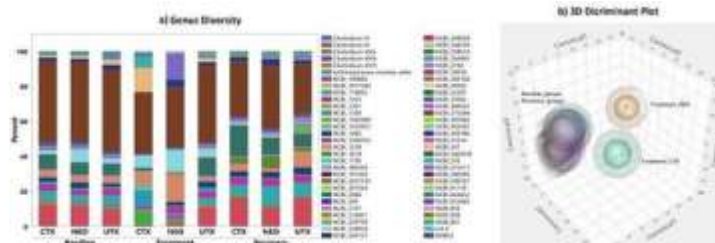
Introduction: Absorptive hypercalciuria, or excessive gut absorption of dietary calcium, is the most commonly identified metabolic cause of calcium-based renal stones. Since intestinal commensal bacteria are known to play an integral role in nutrient metabolism, we hypothesized that gut microbiota may affect calcium absorption and tested this using an antibiotic rodent model.

Methods: Young, pathogen-free Sprague-Dawley rats were evenly distributed into untreated controls (UT; n=12), chloramphenicol-treated (CT; n=12) and neomycin-treated (NT; n=12) groups. Urine and feces were collected in metabolic cages before (baseline) and after (1 week, 4 weeks) a 7 day course of 0.07% oral antibiotic treatment in sterile water. Rats received identical amounts of food quantity during metabolic cage collection periods and similar *ad-libitum* amounts during the remainder of the protocol. Serum calcium, phosphate, and albumin were measured at 4 weeks on an automated system (Dimension Xpand Clinical Chemistry Analyzer). Rat intact PTH (Immutopics, Inc; San Clemente, CA), circulating bone turnover markers (BTM), and serum 25(OH)D (Immunodiagnostic Systems, Ltd; Scottsdale, AZ) were measured using commercially available kits according to manufacturer instructions. 24-hour urine and fecal calcium samples were analyzed using Litholink Corporation. LC Sciences characterized intestinal microbiota using 16S rRNA Illumina paired-end sequencing, and QIIME and metaGenomeSeq software were used to analyze microbial community differences.

Results: At one week, both male and female CT animals showed a reversible, 3-fold increase in urinary calcium excretion coupled with a 25% increase in intestinal calcium absorption. These changes resulted in two-fold increase in calcium oxalate and phosphate urinary supersaturation stone risk. No differences were observed in serum labs, BTM, PTH, or vitamin D among the three groups. CT microbial communities were markedly different from UT and NT groups by heat-map and discriminant plotting (Figure a/b).

Conclusion: In our model, one week of chloramphenicol caused increased intestinal gut calcium absorption and resultant urinary calcium excretion without changes in circulating measures of bone and mineral homeostasis. Gut microbiome was markedly different between the three groups. Should these findings be validated in future studies, functional study of the gut microbial communities responsible for these changes may allow us to target and treat the gut microbiota responsible for absorptive hypercalciuria.

Funding: NIDDK T32 DK094789



Poster #4

RNA INTERFERENCE OF HEPATIC LACTATE DEHYDROGENASE AND LIVER METABOLOMIC EFFECTS

Carter Boyd¹, John Knight, PhD², Ross Holmes, PhD², Dean Assimos, MD², Kyle Wood, MD²

¹UAB School of Medicine, Birmingham, Alabama, ²Department of Urology, University of Alabama, Birmingham, Alabama

Presented By: Carter Boyd, BS

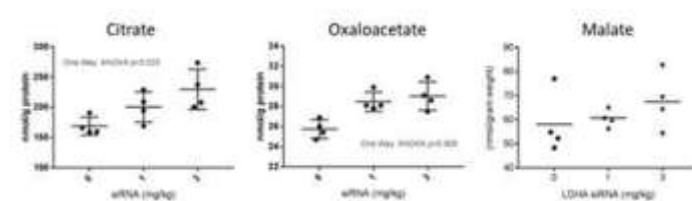
Introduction: Endogenous oxalate synthesis primarily occurs via lactate dehydrogenase (LDH) activity in the liver. Liver specific RNAi LDH therapeutics are currently in clinical trials. Previous work using RNAi against liver lactate dehydrogenase demonstrated reduction of urinary oxalate in the Agxt knock out mouse (Agxt KO), a model for primary hyperoxaluria Type 1 (PH1). Our objective was to evaluate the effects of siRNA knock down of liver LDHA on liver metabolomics

Methods: Agxt KO mice (n=4 for each group) were placed on an ultra-low oxalate diet. The mice were subcutaneously administered various doses (0, 0.3, 1, 3, 10 mg/kg) of LDHA siRNA (Alnylam Pharmaceuticals). Liver tissue was collected at 4 weeks post single siRNA dose. Tissue metabolites were measured using ion chromatography/mass spectrometry and high pressure liquid chromatography. Statistical analysis was performed utilizing one way ANOVA.

Results: Statistically significant decreases in liver lactate (p=0.012) were noted with increased dosage. Statistically significant increases in liver pyruvate (p=0.0002) and liver alanine (p=0.03) were noted with increased dosage. Certain KREB cycle amino acids were altered; liver citrate (p=0.025), liver oxaloacetate (p=0.006), and liver malate (p=0.0003) levels were increased following dose escalation.

Conclusion: These results demonstrate an alteration in liver metabolism following increasing dosage of RNA interference of hepatic LDH. Further studies are needed to determine the long term consequences of these findings especially since clinic trials are ongoing.

Funding: AUA Research Scholar/Medical Student Summer Fellowship; NORC Intramural Grant; K-08



Poster #5

PREMATURE BONE AGING: AND THE CUMULATIVE EFFECTS OF KIDNEY STONES AND CHRON'S DISEASE AND RELATED BOWEL DISORDERS ON THE PREVALENCE OF OSTEOPOROSIS: THE KIDNEY-BOWEL-BONE AXIS

Elizabeth Kwenda¹, Yaroub Fayoub, MD², Paul Dominguez, PhD², Zhaoyi Chen³, Sara Glover, MD², Abdel Alli, PhD², Victoria Bird, MD⁴

¹University of Florida School of Medicine, ²COM University of Florida, ³Dept. of Epidemiology, College of Public Health, University of Florida, ⁴NMARG, Division of Urology

Presented By: Elizabeth Kwenda, BS

Introduction: Osteoporosis is a morbid condition with serious consequences for patients' quality of life. Other disorders that are related to calcium metabolism such as kidney stones (KS) and Chron's Disease (CD) were studied to find their relationship to osteoporosis. We aim to explore the prevalence of osteoporosis in KS, patients with CD or both conditions in comparison to the general population.

Methods: Institutional board review approval was awarded for this study. The first population cohort involved the retrospective analysis of patients from the Informatics for Integrating Biology and the Bedside (i2b2) from the North Florida Region, ICD-9-10 codes were used to obtain diagnosis of interest. A second cohort of patients was analyzed in a retrospective manner via chart review. Univariate and multivariate logistic regression analysis were performed in this database. We used SASv.9.4 for all our analysis.

Results: A total of 1,002,357 patients were included in our i2b2 cohort from 2011 to 2017. The prevalence of Crohn's was 0.69% and the prevalence of kidney stone disease was 1.67%. The prevalence of osteoporosis was 1.3% in the general population, 8.02% ($p<0.0001$) in CD patients, 5.48% ($p<0.001$) in KS patients and 18.4% ($p<0.001$) in patients with CD and KS. The prevalence of osteoporosis was the highest in women with CD and KS disease age 75-84 at 44.4% and in males of the same group at 27.4% age 55-64 years of age. In our second cohort, a total of 254 patient's charts were reviewed. On univariate analysis the prevalence of osteoporosis in patients with CD and KS was 36% vs. 16% in patients with CD (p 0.002). On multivariate logistic regression analysis, osteoporosis was the highest in patients with CD and KS and vitamin D deficiency (OR 4.477, SE 2.13, p 0.002 [95% CI 1.76-11.34]), followed by CD and KS (OR 3.51, SE 1.68 p 0.009 [95% CI 1.37-9.0]).

Conclusion: There is significant premature bone aging in the form of osteoporosis in patients with KS and CD. Future studies should pursue this cumulative synergistic relationship between CD and KS and their negative impact on bone metabolism.

Poster #6

THE RISE AND FALL OF DANGEROUS TEMPERATURE CHANGES DURING URETEROSCOPIC LASER LITHOTRIPSY

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Presented By: Brenton Winship, MD

Introduction: Temperatures over 43°C -the threshold for cellular injury- may be achieved during ureteroscopic holmium laser lithotripsy. Prior studies have shown the importance of irrigation during laser activation, but the time to reach and clear dangerous temperatures has not been studied. Our objective was to determine the relationship between ureteroscope type, irrigation pressure, and laser setting on heat production during ureteroscopy.

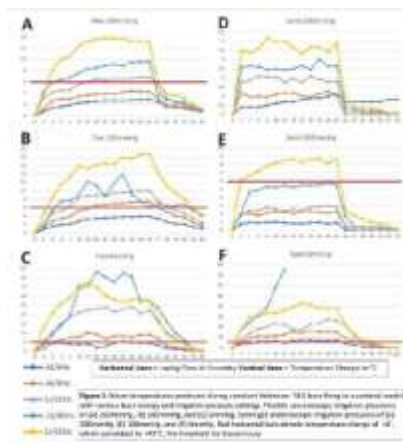
Methods: A flexible (Lithovue) or short Olympus semirigid (SR) ureteroscope was placed within a 36cm, 13Fr. ureteral access sheath inserted into a 250cc minibag of saline to simulate a normal caliber ureter, renal pelvis reservoir effect, and antegrade flow of urine. A thermocouple was placed 1mm adjacent to the tip of a 365µm laser fiber that was fired for 45sec at 0.6J/6Hz, 0.8J/8Hz, 1J/10Hz, 0.2J/80Hz and 1J/20Hz. Irrigation pressures of 200, 100, and 0mmHg were tested. The mean temp change (Δ) was recorded with 6°C above baseline as a threshold for possible tissue injury (as body temperature is 6°C below 43°C).

Results: Flexible group: At 200mmHg, $\Delta >6^\circ$ occurred with 1J/10Hz (15sec), 0.2J/80Hz (3sec), and 1J/20Hz (2sec). Δ Ts returned to $\leq 6^\circ$ of baseline within 2 sec of laser cessation for each setting (Fig 1A). At 100mmHg, $\Delta >6^\circ$ occurred in all but .6J/6Hz. Δ Ts returned to $\leq 6^\circ$ within 10sec of laser cessation (Fig 1B). At 0mmHg, all settings surpassed $\Delta >6^\circ$ within

3sec, except .6J/6Hz (35sec). ΔT s returned to $\leq 6^\circ$ within 10sec (Fig 1C).

Semirigid group: At 200mmHg there was no mean $\Delta T > 6^\circ$ (Fig 1D). At 100mmHg, $\Delta T > 6^\circ$ occurred at 1J/20Hz after 1sec of activation and returned to $\leq 6^\circ$ within 1sec of laser cessation (Fig 1E). At 0mmHg of pressure, $\Delta T > 6^\circ$ was seen at all laser settings and occurred as quickly as 1sec when power was $\geq 10W$. The 0.2J/80Hz tests were halted at ~5 sec due to fluid boiling. ΔT returned to $\leq 6^\circ$ within 5sec in all but 0.2J/80Hz, which took 10sec (Fig 1F).

Conclusion: Potentially dangerous intraureteral temperatures were achieved in our *in vitro* model in as little as 1 second at common irrigation pressures, particularly with a flexible ureteroscope and/or laser settings $\geq 10W$. Fortunately, high temperatures return to a safe level within seconds at each irrigation pressure.



Poster #7

PSYCHIATRIC DIAGNOSES AND OTHER FACTORS ASSOCIATED WITH EMERGENCY DEPARTMENT RETURN WITHIN 30 DAYS OF URETEROSCOPY

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¹Duke University Medical Center, ²Duke University School of Medicine, ³Duke NUS Medical School
Presented By: Evan Carlos, MD

Introduction: Unplanned emergency department (ED) visits after ureteroscopy (URS) are costly and inconvenient. To better understand populations at risk for ED presentation after ureteroscopy we aim to identify patient demographic, medical and surgical factors associated with ED presentation following URS for urolithiasis. We paid particular attention paid to those with a history of a psychiatric diagnosis (PD) who have been identified to be at increased risk of post-surgical ED return in other surgical disciplines.

Methods: We retrospectively reviewed 1576 cases on 1395 adults who underwent stone-related URS over 3 years at two hospitals. We collected patient demographics, medical history, and operative details. The primary outcome was return to ED within 30 days of ureteroscopy. Logistic regression was performed to examine factors associated with ED presentation.

Results: 613(43.9%) patients had a history of PD. 12.6% of URS encounters returned to the ED within 30 days of their ureteroscopy procedure. Of those, 58.8% had a history of PD. On multivariable analysis, variables associated with ED return included: history of PD(OR 1.57,p=0.012), uninsured status(OR 2.46,p=0.001), and stone only in the kidney(OR 1.76,p=0.022). Patients who returned to the ED had more ED visits in the year prior to surgery(OR 1.40,p<0.001). On univariable analysis, older patients and those with longer OR times were more frequently admitted from the ED(OR 1.03,p=0.002; OR 1.96,p=0.03 respectively) while uninsured patients were admitted less frequently(OR 0.19,p=0.013). There was no difference in admission rate between those with at least one PD and all others (60.7% vs 55.8%; p=0.48).

Conclusion: We identified factors associated with ED return after ureteroscopy, including history of a PD, uninsured status, and ED visits in the year before surgery. Between patients with and without a PD, there was no difference in same-encounter hospital admission from the ED. These at-risk patients may benefit from targeted interventions to help avoid unnecessary ED visits.

Poster #8
INCIDENCE AND RISK OF PROLONGED OPIOID USE AMONG OPIOID NAIVE PATIENTS FOLLOWING UROLOGIC STONE SURGERY

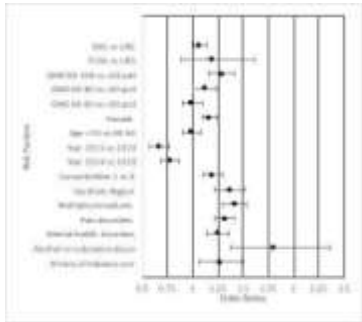
Mohammed Said, Andrew Leung, Dattatraya Patil, Kenneth Ogan, Akanksha Mehta, Christopher Filson, Aaron Lay
Emory University School of Medicine
Presented By: Mohammed Adnan Said, MD

Introduction: The USA is in the midst of an opioid epidemic, the scope of which is currently being elucidated. Given the widespread use of postoperative opioids, identifying patients at risk for prolonged opioid use is an important avenue for prevention. Thus, we evaluated the risk and incidence of prolonged opioid use in opioid-naïve patients after kidney stone surgeries.

Methods: We studied insurance claims from the Truven MarketScan to identify opioid-naïve patients, age 18-64, who underwent shockwave lithotripsy (SWL), ureteroscopy (URS), or percutaneous nephrolithotomy (PCNL) between 2009 and 2015. Patients were observed for 6 months to determine the number and oral morphine equivalent (OME) dosage of postoperative opioid prescriptions. We assessed prolonged opioid use, defined as patients who filled a perioperative opioid prescription followed by a prescription between 90 and 180 days after surgery, and evaluated risk factors using logistic regression.

Results: 50,249 opioid-naïve patients filled a perioperative. Of these, 8.1% of patients continued to fill prescriptions between 90 and 180 days after surgery. In multivariate models there was no significant difference between URS, SWL, or PCNL in prolonged opioid use. There was an association between greater total OME prescribed peri-operatively and prolonged opioid use; patients receiving the 80th percentile of OMEs were more likely than patients receiving <20th percentile, OR 1.28 (1.15-1.41, p<0.01). Pain and mental health disorders were associated with prolonged opioid use, OR 1.31 (1.22-1.41, p<0.01) and OR 1.24 (1.13-1.36, p < 0.01), respectively. Substance and alcohol abuse as well as tobacco use also associated, OR 1.80 (1.38-2.35) and OR 1.26 (1.06-1.49). Other variables that were associated with prolonged opioid use include female gender, multiple procedures, higher Charlson comorbidity index, and region.

Conclusion: 8.1% of opioid-naïve patients continue to fill opioid prescriptions 90 days after stone surgery. Surgery was not associated with prolonged use. Receiving relatively large doses of opioids relative to the lowest quintile was associated with prolonged use. Preoperative interventions centered on opioid alternatives and early cessation, particularly among patients at risk for long-term use, such as those with pain and mental health disorders as well alcohol, substance and tobacco use, are critical to addressing the prescription opioid crisis in the USA.



Poster #9

ASSOCIATION OF OBESITY WITH INCREASED ENDOGENOUS OXALATE SYNTHESIS

Carter Boyd¹, John Knight, PhD², Ross Holmes, PhD², Dean Assimos, MD², Kyle Wood, MD²

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Presented By: Carter Boyd, BS

Introduction: Urinary oxalate levels are affected by both dietary and endogenous components. Prior studies have demonstrated the positive correlation between weight/body mass index (BMI) and urinary oxalate excretion. Our objective was to determine if this association is secondary to increased endogenous oxalate synthesis.

Methods: Healthy subjects, between 18 and 65 years old, with variable BMI were recruited. Subjects of various BMIs were recruited. Subjects consumed a low oxalate controlled diet containing 16% protein, 30% fat, 54% carbohydrate, 1000 mg calcium, and 30 mg oxalate which was devoid of vitamin C and calcium supplements. This diet limits the contribution of diet to the urinary oxalate pool. Subjects remained on this diet for 3 days. 24-hour urine collections were performed on the last two days. Urinary oxalate was measured by ion chromatography coupled with mass spectroscopy. Statistical analysis included Chi-squared, correlation and linear regression analysis, and student t-test.

Results: There were 41 subjects recruited with various BMIs (19-42). Urinary oxalate excretion (mg/day) was positively correlated with BMI ($r=0.44$, $p=0.004$) and waist circumference ($r=0.42$, $p=0.006$). Similar correlations were seen with urinary glycolate excretion (mg/day) with BMI ($r=0.41$, $p=0.007$) and waist circumference ($r=0.36$, $p=0.02$). Urinary oxalate and glycolate excretion was positively correlated ($r=0.31$, $p=0.049$).

Conclusion: These results demonstrate a positive correlation between urinary oxalate derived from endogenous oxalate synthesis and BMI as well as other measures of obesity. This also provides an explanation for the association between stone risk and obesity.

Funding: AUA Research Scholar/Medical Student Summer Fellowship; NORC Intramural Grant; K-08

Poster #10

OXALATE DECARBOXYLASE, EFFECTIVE AT REDUCING BOTH EXOGENOUS AND ENDOGENOUS SOURCES OF OXALATE

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Presented By: Victoria Yvonne Bird, MD

Introduction: Elevated excretion of urinary oxalate continues to be a condition that affects more than 30% of the kidney stone forming population. Our aim was to develop an oral agent that is able to enzymatically reduce urinary oxalate by way of intercepting oxalate in both the stomach (diet) and the intestines (endogenous).

Methods: A0 is an orally administered recombinant oxalate decarboxylase (OxDC) enzyme from *Agrocye aegerita*, designed to degrade both dietary and endogenously produced oxalate throughout the entire length of the gastrointestinal tract (GI tract). To demonstrate its effectiveness a 24-day multiple dose IACUC approved study was conducted in male Gottingen pigs to evaluate the effects of administering A0 on the urinary response to oxalate loading (dietary: 150 mg of oxalate per meal, days 0-9) and hydroxyproline (HP) (endogenous, days 13-22). Eight Pigs were administered 344 mg of A0 (~5000 units of activity) about 15 minutes after consuming either a high oxalate diet or a low oxalate/5% HP diet, twice per day, followed by urine sample collection (24 hour total collection). Animals were housed individually and placed in metabolic cages on days that required urine collection. Urine was collected in acid to ensure slowed oxalogenesis from ascorbic acid and other oxalate precursors in urine. All animals received the antibiotic oral gentamicin (2 mg/kg) two weeks prior to and throughout the duration of the study, to ensure that the animals were not colonized by *Oxalobacter formigenes*.

Results: A0 dosing significantly decreased urinary oxalate excretion. The administered dose of A0 was capable of reducing urinary oxalate excretion by 71% from the dietary phase [dosing days – low oxalate diet (LOD) days] and 45% during the endogenous phase (dosing days – LOD days). A0's effectiveness has high catalytic efficiency, K_m between 50-250 M and a broad

active pH profile, pH 1.5-7.5. There were no related effects (body weight, clinical observations, food consumption etc).

Conclusion: Based on these results, A0 is a potential oral therapeutic agent able to reduce urinary oxalate levels, regardless of oxalate source and indication dietary or endogenous or primary, enteric or idiopathic hyperoxaluria.

Funding: NIH RDK089720B

Poster #11

ENZYMATIC CHANGES IN ENDOGENOUS OXALATE PATHWAY IN OBESE MOUSE MODEL

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Presented By: Carter Boyd, BS

Introduction: Increasing body weight/BMI has been associated with increased urinary oxalate excretion. This finding may be secondary to increased endogenous oxalate synthesis. Using an obese mouse model induced by high fat feeding (HFF), we demonstrated increased endogenous oxalate synthesis. Here, we investigated the protein expression of enzymes involved in the endogenous oxalate pathway.

Methods: Wild type (WT) controls (n=6), HFF (n=6) were fed a diet ultra-low in oxalate (<10µg/g diet) and glycolate (<3µg/g diet) and housed in metabolic cages. In the high fat diet, 45% of calories were fat vs 17% in normal diet. Liver tissue was harvested after 12 weeks of feeding. Western blot analysis was performed to assess protein expression of alanine glyoxylate aminotransferase (AGT), glycolate oxidase (GO), and glyoxylate reductase (GR). Mass spectrometry was used for protein measurements in the liver samples to corroborate Western blot results. Data analysis was performed using t-tests.

Results: Significant increase in liver GR was seen in HFF vs WT mice (p<0.001). Decreases were seen in GO (p=0.03) expression and AGT (p=0.08) expression in HFF vs WT. Proteomic results demonstrated a decrease in AGT (2.2 fold, p=0.004) and an increase in GO (1.5 fold, p=0.03) and GR (1.5 fold, p=0.004).

Conclusion: Both Western blot and proteomic data demonstrated a decrease in AGT expression and an increase in GR expression. These findings may explain the increased glycolate and oxalate seen in these mice. Further studies are needed to clarify the effects of obesity on the endogenous oxalate pathway.

Funding: AUA Research Scholar/Medical Student Summer Fellowship; NORC Intramural Grant; K-08

Poster #12

EXPRESSION OF BARLEY OXALATE OXIDASE ENZYME USING A PICHIA PASTORIS SECRETION SYSTEM

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Presented By: William Donelan, PhD

Introduction: Urinary oxalate, an integral part of the 24-hour urine stone profile, is used to calculate mineral supersaturations and estimate kidney stone risk. The goal of our laboratory is to create a spot urinary oxalate dipstick test that can be used to self-monitor. While most of the raw materials for this strip can be purchased, there is no commercially available source of oxalate oxidase - the enzyme needed to create a test-strip color change. The objective of this study was to establish an expression system for this protein using a yeast expression system.

Methods: A codon optimized synthetic OxOx gene derived from *Hordeum vulgare* (barley) was generated and cloned into the EcoRI/XbaI sites of the pPICZαA expression vector downstream of the N-terminal alpha mating factor secretion signal peptide sequence and used for expression in *Pichia pastoris* X-33 strain. This expression system is well suited for our purpose since it is relatively rapid, inexpensive, and capable of generating disulfide bonds and addition of glycans required for the functional expression of this enzyme. Another major advantage of

using this secretion system is that it functions as a first step in the process of protein purification. Since the pI of this OxOx enzyme is predicted to be 5.5, anion exchange chromatography was used for purification (Q-sepharose: equilibration/binding with tris buffer pH 9.0 and elution with 1M NaCl). Kinetic assays were performed at optimal enzyme conditions as noted in the figure legend.

Results: *P. pastoris* was transformed with the expression plasmid and induced to express active enzyme. Culture media was subsequently dialyzed overnight against distilled water. Active enzyme was purified to greater than 90% purity using Q-sepharose anion exchange chromatography. Our purified OxOx enzyme displayed standard Michaelis-Menten kinetics at substrate concentrations up to 400 μ M (after which a well-known substrate inhibition occurs) and had an estimated K_m value of 256 μ M based on linear regression analysis using a Lineweaver-Burk plot.

Conclusion: We have identified, expressed, and purified an active OxOx enzyme derived from barley. The enzyme kinetics agree with reports from the literature. We plan to optimize the expression and purification protocols for this enzyme while developing a first-generation oxalate dipstick prototype.

Funding: This work was supported in part by the Urology Care Foundation Research Scholar Award Program and The Endourological Society; and by The National Institutes of Health Grant 5T32DK094789-05



Poster #13

TISSUE MACROPHAGES AND ALKALINE PHOSPHATASE IN PAPILLARY BIOPSIES OF A STONE FORMER

Paul Dominguez-Gutierrez, Sergei Kusmartsev, Benjamin Canales

University of Florida

Presented By: Paul Dominguez-Gutierrez, PhD

Introduction: Background: Hydroxyapatite (HA) is a common constituent of most idiopathic calcium oxalate (CaOx) stones. It is frequently found at the CaOx crystal nucleation site deep within a stone and acts as suitable nucleator of CaOx in vitro. Although most crystal deposits within tissue produce inflammation (brushite and calcium oxalate), renal interstitial HA deposits in idiopathic calcium oxalate stone formers do not produce inflammation but instead accumulate within the interstitium as "Randall's plaque." CaOx and HA display competing immunological effects. HA induces tissue healing (M2)-like macrophages whereas CaOx induces inflammatory (M1)-like macrophages. In the context of Randall's plaque, HA induces monocyte differentiation into tissue healing (M2) macrophages, blocking further M1 inflammation.

Method: With the approval of the institutional review board, six papillary biopsies were obtained from a 20-year-old male undergoing PCNL using a flexible ureteroscope. Fixed tissue underwent high-pressure freezing followed by freeze substitution before embedding in HM20 polymer and section with an ultramicrotome equipped with a diamond knife. Images were taken with Evos FL Auto at 40x magnification, and Transmission electron microscopy was done with Tecnai G2 Spirit TWIN is a 120 kV

Results: We observe by immunofluorescence that macrophages are present in the papillary. Macrophages stain positive for CD163, an M2 (tissue healing) macrophage marker. The biopsy was also positive for osteopontin and alkaline phosphatase. Osteopontin has been implicated

in stone disease by potentially acting as a calcium oxalate nucleator. Alkaline phosphatase derived from macrophages has been implicated in vascular calcification and in kidneys of hyperoxaluric rats. When trimming the tissue prior to decalcification, the tissue had areas that were "crunchy" and indicative of calcification. Even after decalcification that is required before sectioning for transmission electron microscope, calcium crystals were observed attached to membrane surfaces particularly to the microvilli.

Conclusion: We identified resident tissue, healing macrophages; the macrophages are localized to focal points rather than throughout the tissue. Both osteopontin and alkaline phosphatase are throughout the tissue and display strong co-localization. Transmission electron microscopy reveals calcium crystals attached to the cellular membrane and microvilli of tubules. Potentially, macrophages, alkaline phosphatase, and osteopontin may be involved in the pathogenesis of calcium oxalate kidney stones.

Funding: 2016-2018 Urology Care Foundations

Poster #14

EFFECTIVENESS OF PREVENTATIVE COUNSELING IN RECURRENT STONE FORMERS

Gopal Narang¹, Catherine Wiener², Elizabeth Stephenson¹, Gary Koch², Davis Viprakasit¹

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Presented By: Gopal Lakhi Narang, MD

Introduction: Urolithiasis is multifactorial in its etiologies and multifaceted in its treatments. A pillar of effective treatment has been the use of preventative strategies and counseling. Dietary recommendations, fluid intake goals, and medication supplementation are keys to prevention and are widely accepted across multiple urologic guidelines. Preventive counseling, though vital to limiting stone recurrence, is ultimately limited by patient recall and implementation. We looked to evaluate the effectiveness of preventative strategy counseling in recurrent stone formers.

Methods: Established recurrent stone patients were retrospectively analyzed over a 14-month period. Patients routinely received both verbal and written information regarding their individualized stone history and preventive recommendations. At subsequent visits, patients were queried on their stone history and practiced preventative strategies. Patient recall was compared with provider recommendations and prior stone history obtained from the medical record. The relationship between correct recall of stone history and preventative strategies was evaluated using appropriate statistical measures.

Results: The cohort was comprised of 294 patients with 57% male and a mean age of 56 years. Prior stone passage was reported in 62% and 85% required surgical intervention. Stone composition was documented in 207 patients with 85% forming calcium stones. Of those with known stone composition, 39% correctly recalled their stone type. 24-hour urine studies were completed by 126 patients, with an average of 37% of urine metabolic abnormalities correctly recalled. Patients were recommended 4.4 +/- 1.3 preventative strategies each and correctly recalled 44% of recommendations. Correct recall of stone composition and/or metabolic abnormality was associated with an increased likelihood of correctly recalling preventative strategies ($p < 0.001$).

Conclusion: Patients correctly recalling their stone composition and/or urine metabolic abnormalities are more likely to remember recommended preventative strategies. A greater understanding of one's stone composition history and disease process may provide a stronger context for preventative strategy counseling. Despite a multifaceted counseling approach, less than half of recommended preventative strategies were recalled. The continued use of novel educational techniques and innovative patient outreach programs is necessary for effective stone prevention. Further study is required to determine factors to enhance patient recall and effectiveness of counseling.

Poster #15

IS AN OVERNIGHT STAY NECESSARY AFTER PENILE PROSTHESIS INSERTION? FEASIBILITY OF OUTPATIENT PENILE PROSTHESIS INSERTION

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Presented By: Benjamin M. Dropkin, MD

Introduction: Inflatable penile prosthesis (IPP) is the most effective treatment for end-stage erectile dysfunction (ED). With over 6000 IPPs placed annually in the United States, a significant cost burden is associated with inpatient care. We sought to determine whether inpatient management after IPP insertion, our current local standard of care, is necessary.

Methods: This was an IRB approved, retrospective review of IPP insertions, identified by CPT code 54405, between June 2013 and November 2017. Medical records were reviewed for patient demographics, medical and surgical history, length of stay, postoperative narcotic use, and postoperative complications.

Results: We identified 242 men who underwent IPP insertion for analysis. The cohort had a mean age of 63.3 + 9.7 years, BMI of 29.6 + 4.6 kg/m², and preoperative SHIM of 4.3 + 4.0. Ninety (37 %) patients were using chronic narcotic pain medication preoperatively, 56 (23 %) were on anticoagulation other than ASA-81 mg, and 94 (39 %) had a diagnosis of diabetes (mean A1c 7.2 + 1.2 %). Patient history included radical prostatectomy (RP) alone in 99 (41 %), radiation (XRT) alone in 8 (3 %), RP and XRT in 11 (5 %), and organic ED in 124 (51 %). Eight (3 %) patients had a history of prior IPP.

All but two (99 %) patients were discharged on the first postoperative day (POD 1); one left on POD 0 and one on POD 2. Eight (3%) patients experienced postoperative complications prior to discharge. Four were Clavien grade I. Two were grade II cardiac arrhythmias responsive to medical treatment. Two were grade IVa: delayed extubation due to respiratory acidosis and hyperkalemia requiring emergent dialysis. The 223 (92%) patients who required post-PACU PO narcotic pain medication used an average of 36.1 + 25.9 morphine milligram equivalents (mme). The 90 (37%) patients who required post-PACU IV narcotic pain medication used an average of 3.3 + 2.1 mme.

Conclusion: The vast majority of patients underwent uncomplicated IPP insertions with minimal post-PACU IV narcotic requirements. Virtually all were discharged on the first postoperative day. Transitioning to outpatient IPP insertion appears to be a reasonable strategy and may have a meaningful impact on patient experience and total costs.

Poster #16

INFLATABLE PENILE PROSTHESIS USING REAR-TIP EXTENDERS: DEVICE OUTCOMES WITH 5-YEAR FOLLOW-UP DATA FROM A SINGLE HIGH-VOLUME IMPLANTER

Andrew Gabrielson, Nickolas Scherzer, Laith Alzweri, Jacob W Greenberg, Matthew Cowper, Wayne J. G. Hellstrom

Tulane University School of Medicine

Presented By: Andrew Gabrielson, BA

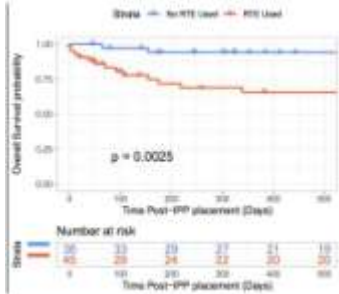
Introduction: Rear-tip extenders (RTE) are often employed to ensure optimal sizing of an inflatable penile prosthesis (IPP), however their use has been challenged under the presumption that they decrease axial rigidity. Previous work by our group demonstrated higher rates of revision/explantation in patients receiving any RTEs during IPP placement using product information forms (PIF) data, unfortunately follow-up data was lacking. This study seeks to better characterize the relationship between RTE use and postoperative complications or need for revision/explantation by providing 5-year follow-up data from a single high-volume implanter.

Methods: Demographic, prosthetic device, and 5-year follow-up data was retrospectively analyzed from patients receiving an IPP between 2010-2011 at a single tertiary referral institution. Patients were stratified based on RTE use during IPP implantation (RTE+ and RTE-). Device survival, incidence of post-operative complication, and median time to revision/explantation were compared between RTE+ and RTE- implants.

Results: A total of 83 patients were included: 48 RTE+ (57%), 35 RTE- (43%). As a tertiary referral center, 18.1% (15/83) of IPPs were non-virgin. There was no significant difference in

the percentage of implants that were non-virgin in the RTE+ and RTE- groups (11/48 vs 4/35). The rate of any post-operative complication was 31.25% (15/48) and 11.43% (4/35) in the RTE+ and RTE- groups, respectively (p=0.036). Non-virgin implants comprised 5/11 complications in the RTE+ group and 1/4 complication in the RTE- group. The most common post-operative complications were infection (6/19), erosion (3/19), and device failure (3/19). Kaplan-Meier analysis revealed significantly shorter median time-to-revision in RTE+ IPPs (259 days vs. 1,125 days, p=0.0025). This was observed despite a significantly younger population in the RTE+ group at the time of implant (59.8 vs. 63.3, p=0.048). The mean device survival was 921 and 1,074 days for the RTE+ and RTE- groups, respectively (p=0.500). There was no significant difference between the two groups for BMI, device type, cylinder length, Peyronie's disease, diabetes mellitus, hypertension, hyperlipidemia, coronary artery disease, prior pelvic radiation or pelvic surgery.

Conclusion: 5-year retrospective analysis with more robust follow-up data mimicked similar findings observed in PIF data analysis. Any RTE use was associated with higher rates of post-operative complication and shorter median time to revision or explantation.



Poster #17
DEVELOPMENT OF A CATALOG OF DISTAL CYLINDER COMPLICATIONS
REQUIRING REVISION PENILE PROSTHESIS SURGERY

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Presented By: Bruce R. Kava, MD

Introduction: Despite improvements in the design and durability of contemporary penile prostheses, many patients require revision surgery. Distal cylinder complications are not uncommon, and include: impending distal cylinder extrusions (ventral, lateral, and medial), and cases in which there is proximal migration of the cylinder tip. With a paucity of literature on this topic, the purpose of this study was to review our experience with distal cylinder complications in patients who have previously undergone penile implant surgery.

Methods: Patients undergoing management of distal cylinder complications following penile implant surgery were analyzed from a prospective, IRB- approved database consisting of consecutive patients undergoing penile prosthesis surgery at our center. Patients with overt infections, extruded cylinders, and chronic fistulae were not included in this analysis.

Results: A total of 37 patients underwent 44 procedures with 5 patients requiring 2 or more procedures for recurrence. Average patient age was 65+/-9.3 years, 17 (46%) patients had diabetes mellitus, and 19 (53%) had two or more implants prior to the existing prosthesis. The prevalence of the various cylinder complications and the techniques used to manage each of these complications is listed in Table 1. Implant cultures were positive in 4 of the 38 (11%) procedures and a modified washout procedure was performed in all of these cases. In cases in which cylinders had migrated proximally, two resulted from cylinder aneurysms. The remainder were from iatrogenic causes, including: undersized cylinders (N=8), proximal crossovers (N=3), and migration of the cylinder through a defective corporeal closure (N=1). Five patients developed infections following repair and 1 was immediately salvaged. At a mean follow up of 25 months, all except two patients have functional implants.

Conclusion: Non-infectious, distal cylinder complications are not uncommon, and often require expertise in order to prevent extrusion and subsequent loss of the implant. Medial, lateral, and

dorsal rerouting techniques with or without the use of interposition grafts are highly successful in managing these patients. Proximal migration of cylinders most often results from technical errors related to undersizing or proximal crossovers, but can also result from cylinder aneurysms. These too, can be managed successfully using contemporary rerouting and advancement techniques.

Table 1: Prevalence of various cylinder complications and the manner in which they were managed.

Complication (n patients)	Number procedures	Patients (%)	Treatment	Number
Dependent lateral extrusion (9/17)	20	1 (5%)	Rerouting alone Rerouting with interposition graft Grafts Vascular Onlay island flap	17
Dependent medial extrusion (9/9)	10	1 (11%)	Rerouting alone Rerouting with free flaps and/or interposition graft	9
Dependent ventral extrusion (9/11)	3	1 (36%)	Distal rerouting with spacing	3
Proximally positioned cylinder tip (9/18)	12*	0 (0%)	Distal advancement with cylinder spacing Repair of crossover; distal advancement +/- anastomosis Cylinder replacement and reinforced closure Anastomosis repair with distal cuff advancement	9

* 2 patients required bilateral repair procedures.

Poster #18
COMPARISON OF COMPLICATION RATES RELATED TO PENILE PROSTHESIS AND ADVANCE MALE SLINGS VERSUS PENILE PROSTHESIS AND ARTIFICIAL URINARY SPHINCTERS: NATONA MULTI-INSTITUTIONAL ANALYSIS OF NSQIP DATABASE
 Omer Raheem, MD¹, Mahmoud Khalil², Mohammed Kamel, MD
¹Tulane Urology, ²UAMS
 Presented By: Omer Raheem, MD

Introduction: Studies comparing early postoperative morbidity of combined penile prosthesis (PP) and male sling (MS) versus PP and artificial urinary sphincter (AUS) for stress urinary incontinence and erectile dysfunction are lacking. Objectives: We aim to assess the 30-day postoperative morbidity in patients undergoing combined insertion of PP and MS vs. PP and AUS utilizing the National Surgical Quality Improvement Program (NSQIP).

Methods: NSQIP database was queried to identify males who underwent simultaneous MS or AUS combined with PP for stress urinary incontinence and erectile dysfunction. Patient demographics, postoperative morbidity including complications, readmission and reoperation rates were recorded. Student t test and Chi-square or Fischer's exact test were used as appropriate.

Results: 41 patients were identified meeting selection criteria (combined AUS with PP or MS with PP) between 2010 and 2016 reported by NSQIP database. Overall, there was 26 (63%) received AUS and PP versus 15 (37%) received MS and PP. Average age were similar in both groups (65 ± 6.6 vs. 62 ± 6.3, p=0.254). Diabetes Mellitus was the most prevalent co-morbid disease in MS and PP group compared to AUS and PP group (47% vs. 12%, p=0.022). Average length of stay (days) was higher in AUS and PP group compared to PP and MS group (2.2 ± 0.6 vs. 1.8 ± 0.4, p=0.017). Postoperative morbidity occurred in 4 patients (15%) in AUS and PP group. No reported complication in MS and PP group. In the AUS and PP group, complications included 1 (4%) patient developed urinary tract infection, 1 (4%) developed surgical site infection, readmission in 2 (7%) and return to the operating room for incision and drainage of fluid collection in 1 (4%). No reported prosthesis explanation, erosion or revision in either groups.

Conclusion: Overall the 30-day postoperative morbidity of PP and AUS exhibit higher complication rates compared to PP and MS. Despite the surgical complexity of combined prosthetics procedures, these complication rates remain low and comparable to solitary prosthetics procedure.

Poster #19

CURVATURE CORRECTION TECHNIQUES FOR RESIDUAL CURVATURE AFTER PENILE PROSTHESIS PLACEMENT: INTRAOPERATIVE OBJECTIVE DATA

Gerard Henry, Bryan Kansas, Tobias Kohler, Edward Karpman, William Brant, Brian Christine, Mohit Khera, LeRoy Jones, Nelson Bennett, Eugene Rhee, Kavina Jani, Anthony Bella

Presented By: Gerard D. Henry, MD

Introduction: Residual curvature after placement of a penile prosthesis (PP) is a common occurrence; however, there is no published data that shows how much each straightening technique objectively improves intraoperative curvature, or compares these different corrective surgical methods. The objective of this study was to evaluate, intraoperatively, the need for intraoperative straightening methods, the different curvature management techniques, and their efficacy.

Methods: 313 [of the total 1297 (24.1%)] PP patients who underwent residual curvature correction procedure (CCP) from the Prospective Registry of Outcomes with Penile Prosthesis for Erectile Restoration (PROPPER) database. 4 techniques evaluated [modeling, tunical incision, incision and grafting, plication] up to 3 CCPs used per patient. Various Statistical methods were utilized: multivariable logistic regression to assess predictors of need for CCP; comparisons on continuous variables using Wilcoxon rank-sum test/one-way analysis of variance (ANOVA); and for categorical variables, Chi-square test/Fisher's exact test were used.

Results: First curvature correction techniques chosen by the implanting surgeon: Modeling (84%), tunical incision (6%), incision and grafting (5.4%), and plication (3.5%). The 2 most utilized first techniques are more likely to require additional correction techniques ($p < 0.001$) compared to the 2 least utilized first techniques. Patients who underwent modeling as their first CCP had a significant difference in their initial intraoperative angle degree measurement between those who successfully treated 31.1 ± 15.2 and those who needed an additional CCP technique 46.0 ± 19.0 ($p < 0.001$).

Conclusion: Residual curvature requiring CCP after implantation of a PP is a common problem facing prosthetic surgeons. Residual curvature of greater than 45 degrees after PP implantation appears to require more than just modeling. For the first time, this paper evaluates 4 intraoperative management techniques for residual curvature after PP implantation.

Funding: AMS/BSCI

Poster #20

EVALUATION OF COMPLICATION RATES RELATED TO SURGICAL MANAGEMENT OF CONCURRENT ERECTILE DYSFUNCTION AND PEYRONIE'S DISEASE: NATIONAL MULTI-INSTITUTIONAL ANALYSIS OF THE NSQIP DATABASE

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Presented By: Omer Raheem, MD

Introduction: Surgical treatment of concurrent erectile dysfunction (ED) and Peyronie's disease (PD) can be challenging and often requires specific surgical techniques with increased complication rates. Studies describing the postoperative complications of concurrent penile prosthesis (PP) implantation as well as surgical correction of PD are lacking. Objectives: We aim to describe the 30-day postoperative complications in patients underwent concurrent PP implantation and surgical correction of PD (tunical plication, incision, excision and grafting) utilizing the National Surgical Quality Improvement Program (NSQIP).

Methods: NSQIP database was queried to identify males who underwent simultaneous PP and surgical treatment of PD. Patient demographics, type of implant received, operative time and early postoperative complications were recorded. Student *t* test and Chi-square or Fischer's exact test were used as appropriate.

Results: 54 patients were identified between 2010 and 2016. Mean age was 60.6 ± 9.4 . Mean Body mass index (BMI) was 30.64 ± 5.06 . Ethnicity were 51.8% white and 9.3% African American. Only 11% of patients were tobacco smokers. Diabetes Mellitus was most prevalent comorbidity in 17 (31.5%) patients. Mean operative time was 114 minutes. Mean length of hospital stay (days) was 1.8 ± 0.4 . Fifty (93%) patients received the inflatable PP and 4 (7.4%) received a malleable implant. The surgical procedures performed were plication/modelling of tunica albuginea in 29 (54%) patients, excision of penile plaque with graft < 5 cm in 20 (37%) and excision of penile plaque with graft > 5 cm in 5 (9.3%). Early postoperative complications

occurred in only 2 patients (3.7%). One patient (1.8%) developed surgical site infection and 1 (1.8%) required unplanned intubation. No prosthesis related complications or readmissions were reported.

Conclusion: Despite its surgical complexity, the 30-day postoperative morbidity of concurrent PP and PD surgical correction are low and comparable to previously published data. In selected patients, this procedure may be considered with low morbidity as treatment of choice to address both ED and PD simultaneously.

Poster #21

OUTCOMES OF RESTOREX PENILE TRACTION THERAPY IN MEN WITH PD: A RANDOMIZED, CONTROLLED TRIAL

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Mayo Clinic Rochester

Presented By: Kevin Joseph Hebert, MD

Introduction: Penile traction therapy (PTT) is a common treatment used in the management of Peyronie's disease (PD). Given the limitations of existing devices, a novel PTT device, RestoreX, was developed as a primary or adjunctive therapy for PD. The objective of the current study was to assess the safety and efficacy of the RestoreX PTT device in men with PD.

Methods: A randomized, controlled trial (NCT03389854) is ongoing to evaluate the impact of PTT with RestoreX in 110 men with PD. Men are randomized to one of four groupings: no therapy (control) or treatment with Restorex for 30 minutes 1x, 2x, or 3x daily for 3 months. All men then enter an open label phase for an additional 3 months. The primary outcome is safety, and secondary outcomes include penile length, curvature, and subjective responses to standardized (IIEF, PDQ) and non-standardized questionnaires. Assessments are obtained at baseline and 3 and 6 months after starting therapy.

Results: All 110 men have been enrolled, with 3-month and 6-month data available on 75 and 31 patients, respectively. Mean age was 58.4 years (SD 7.7), mean PD duration 43.6 (42.3) mo, and 33% had previously undergone collagenase injections. Mean baseline disease characteristics included a penile length of 11.5 cm (corona; SD 1.4), primary curvature 46.1 degrees (11.7), and composite curvature 59.9 (20.4). After 3 months (completion of randomization phase), PTT significantly improved penile length (+1.5 [+10.2%] vs +0.06 [+0.5%], $p<0.01$), primary curvature (-9.1 degrees [-20.4%] vs -1.7 [-4.4%], $p<0.01$), and composite penile curvature (-12.8 degrees [-24.6%] vs +1.0 [+3.6%], $p<0.01$) compared to controls. At 6 months (following open label), those originally in the control arm increased penile length 2.0 cm ($p<0.01$), primary curvature decreased -5.3 degrees ($p=0.26$), and composite decreased -5.9 degrees ($p=0.22$). Men in the treatment arm also demonstrated significantly greater improvements in the IIEF erectile function and intercourse satisfaction domains and PDQ psych/physical and bother domains. All adverse events were temporary and included mild discomfort (47%), erythema (39%), and sensory changes (20%).

Conclusion: Based on preliminary results, PTT with RestoreX for 30-90 minutes daily resulted in statistically significant improvements in penile length and curvature compared to controls with no significant adverse events.

Poster #22

COMBINATION OF COLLAGENASE CLOSTRIDIUM HISTOLYTICUM AND PENILE TRACTION WITH RESTOREX RESULTS IN GREATER IMPROVEMENTS IN CURVATURE AND LENGTH IN MEN WITH PEYRONIE'S DISEASE

Jack Andrews, MD, Manof Alom, M.B.BS, Tobias Kohler, MD, Landon Trost, MD

Mayo Clinic

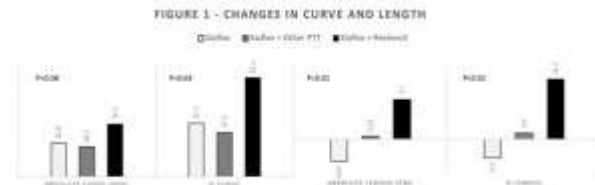
Presented By: Jack Andrews, MD

Introduction: Pre-release and post-marketing studies of clostridium collagenase histolyticum (Xiaflex) have consistently demonstrated statistically significant improvements in penile curvature in men with PD. However, manual modeling was shown to be an essential component to achieving successful outcomes (phase IIb trial data). Preliminary results from a randomized trial of a novel penile traction device (RestoreX) similarly demonstrated improvements in curvature and length in PD men. Given these findings, we sought to determine whether combination therapy with Xiaflex and RestoreX resulted in greater improvements in PD than either therapy alone.

Methods: A prospective registry has been maintained at our institution of all men undergoing Xiaflex injections for PD since 2014. All men undergo stretched penile length, curvature assessments, and have detailed PTT information obtained prior to, during, and following injections. A comparative analysis was performed of key outcomes including penile length and curvature among men electing Xiaflex alone (Control), combined Xiaflex and historically available PTT devices (Andropenis, X4 Labs, Penimaster, vacuum device, or others – [Other PTT]), and Xiaflex with a novel PTT device (RestoreX).

Results: From 2014-2018, a total of 266 men underwent one or more Xiaflex injections at our institution for PD. Complete data including final curvature assessment and traction use were available on 102 men (Control=66, Other PTT=31, RestoreX=5), which comprises the current cohort. Clinicopathologic variables including mean age (56.8 yrs), PD duration (23.1 mo), and baseline curvature (64.5 degrees) were similar between groupings. Mean duration of daily traction was 0.86 hr (RestoreX) and 2.5 hr (Other PTT). Results are demonstrated in Figure 1. No significant differences were noted regarding rates of ecchymoses (99%), hematomas (23%), restored ability to penetrate (63%), prevention of need for surgery (47%), or perceived meaningfulness (88%) between groupings.

Conclusion: Based on preliminary data, the adjunctive use of RestoreX at the time of Xiaflex injections achieved greater improvements in curvature and length compared to Xiaflex alone or other forms of traction. Given the limited series, additional data and external validation are required.



Poster #23

COLLAGENASE CLOSTRIDIUM HISTOLYTICUM (CCH) ATTENUATES HUMAN CORPUS CAVERNOSUM CONTRACTION IN VITRO

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Presented By: Laith Alzweri, MD

Introduction: Collagenase clostridium histolyticum (CCH) is an effective and safe minimally invasive intralesional treatment option for Peyronies disease (PD). A published retrospective clinical study documented a non-significant effect of CCH on penile vascular parameters, or the International Index of Erectile Function (IIEF) score in Peyronie's patients who completed four rounds of CCH when compared to baseline. Although PD is strongly associated with erectile dysfunction (ED), there are no studies related to the understanding of such effects of CCH on human corpus cavernosum (HCC) smooth muscle function. Our aim was to explore the effects of different concentrations of CCH on nitric oxide (NO)-dependent and -independent relaxations of HCC in organ bath studies to understand if CCH can improve HCC relaxation and, thus, ED in PD patients.

Methods: HCC samples were obtained from men undergoing penile prosthesis implantation (n = 10). After phenylephrine (Phe) contraction, electrical field stimulation (EFS), and acetylcholine (ACh) induced relaxation at [0.23 and 0.9 mg] CCH incubations of HCC strips were performed using organ bath preparations. HCC measurements of endothelial NO synthase (eNOS), neuronal (nNOS) and VEGF were evaluated through immunostaining and Western blotting.

Results: Various doses of CCH did not reduce the maximal contractile response of Phe and the relaxant response to electrical field stimulation (EFS, 20Hz) in HCC. Pre-incubation with CCH significantly reduced contractile tension evoked by EFS (80 Hz) by 37.5%, and increased Acetylcholine (ACh)-induced relaxation (10-3M) by five-fold at [0.23 and 0.9 mg].

Conclusion: CCH may have a potential relaxant effect on HCC tissues, which may be attributed to the blocking of sympathetic adrenergic receptors resulting in reduced EFS-induced contraction (80Hz) and enhancing the parasympathetic cholinergic response. The relaxation response to CCH is likely dependent on a NO-cGMP pathway. Although incubating HCC with CCH (0.9 mg) may have in vitro pro-erectile effects on the penile vasculature, this was not shown in a clinical setting using CCH at the 0.58 mg dose. This data adds to the safety profile of CCH. More studies are required to examine the therapeutic potential of CCH's pro-erectile effects with increased dosing in vivo to better address PD and associated ED.

	Control	0.23 mg, CCH	0.9 mg, CCH
ACh-induced relaxation (10-3M,%)	5.89 ± 1.09	33.5 ± 1.41***	30.8 ± 0.8***
EFS-induced relaxation (20Hz,%)	23.32 ± 3.32	22.9 ± 7.8	19.3 ± 17.1
EFS-induced contraction (80Hz,g/g tissue)	48.7 ± 7.78	32.82 ± 5.33	18.3 ± 1.95 **

Poster #24

CONDITIONED MEDIA OF MESENCHYMAL STEM CELLS AS A NOVEL THERAPEUTIC FOR ERECTILE DYSFUNCTION

Ethan Matz, MD¹, Xin Gu, MD PhD², Lei Dou, MD², Cara Clouse, DVM², Ryan Terlecki, MD³, Yuanyuan Zhang, MD PhD², James Yoo, MD PhD², Anthony Atala, MD³, John Jackson, PhD²

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Presented By: Ethan Matz, MD

Introduction: Using a neurovascular model of erectile dysfunction, we have previously demonstrated enhanced functional and histologic recovery following intracavernosal administration of placental derived stem cells (PSC). The regenerative mechanism is not entirely understood, but prevailing theory involves an enhanced microenvironment secondary to release of trophic factors. We aimed to identify trophic factors within the secretome of stem cells derived from placenta (PSC) and determine their efficacy in the rodent neurovascular ED model.

Methods: All cell lines were cultured in duplicate. PSCs were used at passages between 7 and 12. All cells were grown to 60-70% confluence and incubated in serum-free media for 24 hours. Conditioned media (CM) was removed and concentrated 10-20 fold. All samples were sent for 200 human biomarker analyses (Ray Biotech, Norcross, GA). The conditioned media samples were injected intracavernosal into the rodent neurovascular model. Intracavernosal pressure (ICP) and maximal arterial pressure (MAP) were recorded at 6 months for all samples using serum free media as control.

Results: When the secretome profiles of PSCs were analyzed, their makeup varied substantially from other MSCs (adipose, amniotic fluid). The ICP/MAP for the PSC-CM was 0.365 as compared to SFM (0.265) and saline (0.251). This demonstrates a statistically significant improvement in function.

Conclusion: There exists a wide array of trophic factors found in the CM of PSCs. Use of CM as an injectable therapeutic has the ability to cause improved erectile function. This could allow the development of a cell-free therapeutic alternative to the administration of stem cells for erectile function recovery.

Funding: Department of Defense, AFIRM II



Poster #25

PHOSPHODIESTERASE-5 INHIBITORS AND THE RISK OF MELANOMA: NO SIGNIFICANT PUBLIC HEALTH RISK

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Presented By: George Wayne, MD

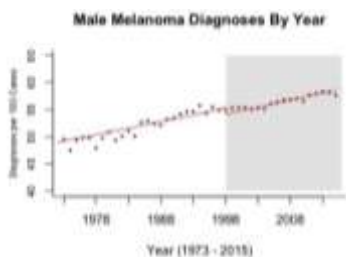
Introduction: The 2018 AUA guideline on erectile dysfunction (ED) addressed a recently identified relationship between Phosphodiesterase-5-inhibitor (PDE-5i) use and skin cancers, specifically melanoma. Despite weak evidence of causal link, several studies have affirmed this low-probability, but statistically significant association and have been widely publicized. We sought to evaluate the public health danger posed by PDE-5i drugs for ED treatment after their introduction to the U.S. market in 1998.

Methods: The Surveillance, Epidemiology, and End Results (SEER) database, which reports

cancer diagnoses between 1973-2015, was used to compare the risk of melanoma diagnosis in American men before and after PDE-5i drugs were first introduced for ED treatment in 1998. Interrupted time-series and logistic regression were used to assess this relationship.

Results: Over 43 years, the SEER database has reported 292,166 cases of Melanoma. Of these, male diagnoses have accounted for a mean 53.7% (SD 3%, Range 47.5% - 58.3%) with the period after 1998 witnessing a 2% reduction in male proportion of melanoma cases, compared to that predicted by the pre-1998 trend, $p < 0.05$ (Figure). On Logistic Regression analysis, men before 1998 were exposed to a 3.9% increase in the odds of melanoma diagnosis with each passing year ($p < 0.01$); this risk did not change afterwards (3.8% yearly increase in odds of diagnosis, $p < 0.01$).

Conclusion: Recent studies have suggested an association between PDE-5i use and skin cancer, particularly melanoma, and have been noted by recent specialty guidelines as well as lay-press. Our analysis of the SEER database demonstrates that the era of PDE-5i use for ED has not altered men's risk of melanoma diagnosis. These findings may be of value in counseling patients anxious about the potential association between PDE-5i use and skin cancer.



Poster #26

ASSOCIATION OF PHOSPHODIESTERASE 5 INHIBITORS WITH SKIN CANCERS IN THE US VETERAN POPULATION

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Presented By: Margaret Higgins, MD

Introduction: Purpose: To explore the relationship between phosphodiesterase 5 inhibitor drugs used to treat erectile dysfunction and the development of malignant melanoma and other skin cancers in a large-scale study of Veterans.

Methods: The study was a retrospective, case-control design using the Department of Veterans Affairs (VA) Informatics and Computing Infrastructure database. The database was searched from 1998 through 2017 for Veterans who received phosphodiesterase 5 inhibitors. Veterans who had never received these drugs through the VA were selected as controls. Incidence of malignant melanoma, basal cell carcinoma, and squamous cell carcinoma of the skin were measured in each group.

Results: 1.78 million Veterans who received drugs were matched by race, age, and geography to 1.78 million Veteran controls. Mean age of the drug group and control groups was 59.1 years (SD± 11.1) and 58.5 (SD± 11.1), respectively. Mean follow-up time for the drug group was 8.3 years (SD± 4.82) and 8.0 years (SD± 4.65) for controls. The drug group showed a higher incidence of malignant melanoma (OR 1.25; CI 95%, 1.22-1.27, $p < 0.0001$), basal cell carcinoma (OR 1.46; CI 95%, 1.44-1.48, $p < 0.0001$), and squamous cell carcinoma (OR 1.51; CI 95%, 1.49-1.54, $p < 0.0001$) compared to controls.

Conclusion: Veterans using phosphodiesterase 5 inhibitors showed an increased risk of developing malignant melanoma, basal cell carcinoma and squamous cell carcinoma compared to controls. Our data set is the largest to date examining the relationship between these drugs and skin cancers.

Table 1: Subgroup Analysis of FSH/Drug Exposure

FSH/Drug Exposure	FSH (IU/L)	Metastatic Sites	Metastatic Sites	p-value	SEC OR	p-value	SEC OR	p-value
Subtotal (n=3, prepubertal)	517000	147000	3.39 (3.28 - 3.49)	<0.0001	1.28 (1.25 - 1.30)	<0.0001	1.29 (1.28 - 1.30)	<0.0001
Subtotal (n=3, prepubertal)	517000	147000	1.42 (1.34 - 1.51)	<0.0001	1.27 (1.23 - 1.32)	<0.0001	1.33 (1.29 - 1.38)	<0.0001
Subtotal (n=3, prepubertal)	253,300	153,300	3.39 (3.29 - 3.49)	<0.0001	1.28 (1.23 - 1.33)	<0.0001	1.34 (1.29 - 1.40)	<0.0001
Subtotal (n=3, prepubertal)	110,871	100,071	3.39 (3.45 - 3.83)	<0.0001	1.30 (1.14 - 1.25)	<0.0001	1.38 (1.31 - 1.47)	<0.0001

Poster #27

AGE RELATED PRESENCE OF SPERMATOGONIA IN KLINEFELTER SYNDROME PATIENTS: A SYSTEMATIC REVIEW OF THE LITERATURE AND META-ANALYSIS

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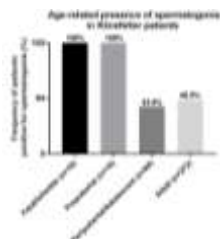
Presented By: Nicholas Allen Deebel, MD

Introduction: Klinefelter syndrome (KS) has been classically defined by the presence of gynecomastia, tall stature, low testosterone and elevated gonadotropin levels, and small, firm testes. Genotypically, these patients are most commonly 47 XXY. The onset of puberty in KS patients is associated with the initiation of progressive testicular fibrosis, loss of spermatogonial stem cells (SSC), and therefore, impaired fertility. However, focal areas of spermatogenesis have been observed in some patients. Given the recent demonstration of successful cell culture for mouse and human KS SSCs, it would be feasible to isolate, propagate, and differentiate these SSCs *in vitro*. Prior to initiating this as a therapeutic solution for azoospermia, a better idea of how many patients are positive for spermatogonia on testicular biopsy is needed.

Methods: A thorough Medline/Pubmed search was conducted using the following MeSH terms: Klinefelter syndrome, germ cell, spermatogonia, spermatogenesis, and mice. Exclusion criteria included: non-English language, abstract only, and review papers. All of the studies including data on the presence of spermatogonia in KS patients were included in the meta-analysis portion of the paper. Case reports were included and papers containing both non-KS and KS patients had the non-KS patients excluded prior to meta-analysis. Patients were subcategorized into the following age groups: Fetal/Infantile (age <1), Prepubertal (age <10), Peripubertal/Adolescent (age 10<x<18) and Adult (age≥18). The presence of spermatogonia on testicular biopsy was recorded.

Results: A total of 722 records were identified on the initial Pubmed/Medline search. After removing duplicates, non-english abstracts, and abstracts for review papers, 354 abstracts remained. A double blind review of the abstracts for relevance returned 59 abstracts, 31 of which contained information sufficient for meta-analysis. Metaanalysis was conducted on 376 patients. As seen in figure 1, 100% of the fetal/infantile and prepubertal groups were positive for spermatogonia while 42.6% and 48.5% of the peripubertal and adult groups respectively were positive for spermatogonia.

Conclusion: While azoospermia is a common finding in the KS patient population, this data shows that many patients still remain positive for spermatogonia. Given recent advances in KS SSC propagation and differentiation, isolation of these cells could be used in future fertility interventions.



Poster #28

NUMBERS OF SPERMATOGENIAL CELLS IN UNDESCENDED TESTES ARE LOWER THAN NORMAL, REGARDLESS TO THE AGE OF ORCHIOPEXY

Abinav Udaiyar¹, Demetri Hodges¹, Barber Heather¹, Guillermo Galdon¹, Nima Pourhabibi Zarandi¹, Kimberly Stogner-Underwood², Shadi Qasem², Stanley Kogan^{1,3}, Anthony Atala^{1,3}, Hooman Sadri-Ardekani^{1,3}

¹Wake Forest Institute for Regenerative Medicine (WFIRM), ²Department of Pathology, ³Department of Urology, Wake Forest School of Medicine, Winston-Salem, NC

Presented By: Hooman Sadri, MD, PhD

Introduction: Failure in congenital testicular descent - cryptorchidism - is the most frequent genital abnormality, affecting approximately 1% of mature births. Up to 20% of boys with unilateral cryptorchidism experience fertility problems and this figure increases up to 70% for boys with bilateral cryptorchidism. Paternity rate decreases significantly in corrected bilateral cryptorchidism (65%) compared with unilateral cryptorchidism (89.7%) and control men (93.2%). Recently, we established a clinical reference value to evaluate pediatric testes histology regarding to the number of spermatogonial cells. Traditionally it is recommended to move the undescended testes surgically to the scrotum (Orchiopexy) as early as possible. The main aim of current study was quantifying the number of spermatogonial cells at the time of orchiopexy surgery in children of different ages.

Methods: As part of our experimental testicular tissue banking to preserve fertility, testes biopsies were performed in patients who went through orchiopexy because of undescended testes. Patients with retractile testes were excluded from this study. After Institutional Review Board approval, testicular sections from existing paraffin blocks at Wake Forest Testicular tissue banking were prepared for PGP9.5 (UCHL1) antibody staining, an undifferentiated spermatogonial marker, in an automated clinical setting. The stained slides were scanned by NanoZoomer-XR Digital slide scanner (HAMAMTSU). By using NDP.view2 Viewing software the number of basement and adluminal spermatogonia were counted.

Results: The patient's age range was from 7 months to 12 years. In total, 44 undescended testes were evaluated. Average (\pm SE) of total spermatogonia cells per seminiferous tubule was 0.7 (\pm 0.1) and 1.0 (\pm 0.4) in boys <10 (prepubertal) and \geq 10 years old (peripubertal) respectively. The populations of spermatogonial cells in these patients' testes were 43% and 21% in boys <10 and \geq 10 years old respectively, compare to normal reference values.

Conclusion: This data demonstrated the presence of lower number germ cells in undescended testes regardless to the time of orchiopexy surgery. However, the germ cell loss increases over time. We hope that storing a portion of the testis biopsy at the time of orchiopexy, propagating the number of spermatogonial stem cells (SSCs) *in vitro* and transplanting back the SSCs may increase the chance of fertility in these patients in the future.

Funding: Wake Forest Institute For Regenerative Medicine (WFIRM)

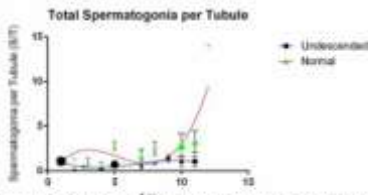


Figure 1. Comparing the Number of undifferentiated spermatogonia cells (PGP9.5 + cells) in normal and undescended pediatric testes samples. The data represented Mean \pm SEM of spermatogonia per tubule (3/T).

Poster #29

UTILITY OF ENDOUROLOGIC TRAINING SIMULATION AMONG UROLOGY TRAINEES

Jeff Goodwin, Jason Bylund, Amul Bhalodi, John Roger Bell

University of Kentucky

Presented By: Jeffrey D. Goodwin, MD

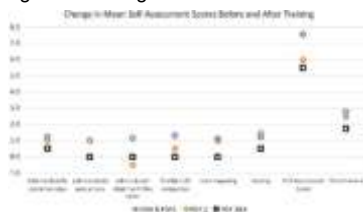
Introduction: Purpose: To assess whether didactic lectures and surgical simulation improves urology trainee self-assessment of surgical skill. Excellence in endourologic education of urology trainees is an important component of urologic training. Education strategies typically include some combination of didactic lectures and surgical mentorship. However, given the restrictions on resident work hours and concerns for patient safety, surgical simulation has become increasingly popular. Ideally, the best method of education would be one which both maximizes general knowledge and surgical skill development while minimizing risk to patients.

Methods: A didactic lecture was prepared and delivered to urology residents and 4th year rotating medical students pursuing urology at a single institution by a fellowship trained endourologist (JRB). The didactic session was followed by a hands-on training session arranged with assistance from industry representatives with simulation stations including flexible cystoscopy, flexible ureteroscopy, laser lithotripsy, and percutaneous access. Simulation stations were overseen by three fellowship trained endourologists (JRB, AAB, JRB). A survey was created asking the participants to rate themselves on a scale of one to five regarding six endourologic tasks and eight general knowledge-based questions. All participants were asked to fill out a survey before and after the training. Responses were entered into an Excel spreadsheet and analyzed.

Results: Twelve pre-training responses and eleven post-training responses were recorded with experience level ranging from 4th year medical student to post-graduate year (PGY) 4 training. The average self-assessment score increased by 7 points when comparing the pre-training assessment to the post-training assessment. (See Figure 1) The largest improvement in the self-assessment scores were seen in the medical student and PGY 1 scores followed by PGY 2 scores and PGY 3 & PGY 4 scores.

Conclusion: Didactic lectures coupled with endourologic training simulations increased both overall knowledge as well as perceived endourologic competency and familiarity with basic endourologic skills. This method was most effective in those with limited training including first year trainees and 4th year medical students. However, even PGY 3&4 residents stated they felt more comfortable after the training and demonstrated an increase in objective quiz scores.

Figure 1 – Change in Mean Self-Assessment Scores Before and After Training



Poster #30

EVALUATION OF PATIENT VARIABLES THAT INFLUENCE PREDICTIVE FORMULAS FOR DETERMINING URETERAL STENT LENGTH

Jennifer Kuo, MD, Andrew Rabley, MD, Paula Domino, MD, Brandon Otto, MD, M. Louis Moy, MD, Vincent G. Bird, MD

University of Florida, Department of Urology, Gainesville, FL

Presented By: Jennifer Kuo, MD

Introduction: Ureteral stenting to relieve or prevent ureteral obstruction is fundamental to various urologic procedures. Optimizing stent length is important to decrease stent-related discomfort and migration. Literature supports several predictive formulas (PFs) based on clinical and/or radiological variables to estimate ureteral length. Our objectives were to compare PFs with direct measurement, and to identify patient variables associated with PF deviations from direct measurement.

Methods: Patients undergoing ureteral stenting for benign and malignant indications were included. Patient variables analyzed included gender, race, body mass index, prior abdominal/pelvic surgery (PSHx), radiation therapy, pelvic organ prolapse (POP), laterality, hydronephrosis, and pre-existing stent. Three PFs were selected from original studies based on reproducibility and correlation with direct measurement: clinical PF (PFclinical) per Hruby et al., radiological PF (PFradio) per Shrewsbury et al., and combined clinical and radiological PF (PFcombo) per Kawahara et al. A common height criteria (PFheight) was also utilized. Direct measurement was obtained intraoperatively with a ruled 5-French ureteral catheter. PFs were compared with direct measurement using scatterplot and Spearman's correlation coefficient (r). Univariate and multivariate logistic regressions were used to evaluate variables associated with ≥ 2 cm deviation from direct measurement— a clinically significant difference for standard stents available in 2 cm increments.

Results: A total of 85 patients (101 ureters) were analyzed. PFcombo correlated best ($r=0.52$), followed by PFradio($r=0.49$), PFclinical ($r=0.15$), and PFheight ($r=0.1$). Several variables affected multiple PFs: gender was associated with deviations for PFclinical and PFheight; weight (BMI > 25) was associated with deviations for PFclinical and PFcombo; POP was associated with deviations for PFradio and PFheight; and PSHx was associated with deviations for PFcombo. Pre-stented patients were less likely to deviate for PFcombo and PFheight.

Conclusion: PFs were not highly correlated when applied to our patient population, which purposefully encompassed patients excluded from original studies. Some results are in concordance with anecdotal experiences and existing literature, such as the caudal displacement of ureters in POP. Other results echoed original PFclinical and PFcombo studies, which demonstrated associations of gender and weight with ureteral length. Although no PF is universally applicable, identifying patient variables associated with deviations from direct measurement helps define appropriate patient populations for each PF.

Univariate				Multivariate			
Predictive Formula	Patient Variable	OR	P	Patient Variable	OR	P	
PF _{clinical}	Male	13.4	<0.01	Male	9.3	<0.01	
	Weight	2.8	0.02	Weight	4.9	0.02	
PF _{radio}	POP	-	-	POP	5.4	0.02	
PF _{combo}	Weight	3.7	0.03	POP	3.8	0.04	
	POP	4.3	0.02	Pre-stented	0.2	0.02	
	Female	3.0	0.01	Pre-stented	0.3	0.04	

OR=odds ratio; POP=pelvic organ prolapse; PSHx=prior abdominal/pelvic surgery

Poster #31
PELVIC DIGITAL TOMOSYNTHESIS FOR THE EVALUATION OF DISTAL URETERAL CALCULI: ORGAN SPECIFIC DOSES AND EFFECTIVE DOSE COMPARED WITH NON-CONTRAST COMPUTED TOMOGRAPHY

Brenton Winship, MD¹, Justin Raudabaugh², Giao Nguyen², Russell Terry, MD¹, Daniel Wollin, MD¹, Evan Carlos, MD¹, Terry Yoshizumi, PhD², Glenn Preminger, MD¹, Michael Lipkin, MD¹

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Presented By: Brenton Winship, MD

Introduction: Follow-up imaging to confirm passage of distal ureteral stones represents a dilemma in the outpatient setting. We have previously published on the substantial radiation reduction, cost savings and clinical usefulness of abdominal digital tomosynthesis in the evaluation of renal and proximal ureteral stones relative to stone protocol non-contrast computed tomography (NCCT). The aim of this study is to report on our early clinical experience using this technique for the evaluation of distal ureteral stones as well as to describe the effective dose (ED) and organ specific doses (ODs) for pelvic digital tomosynthesis, compared to NCCT.

Methods: A validated anthropomorphic phantom was placed supine on a digital GE Definium 8000 radiological scanner. A 0.18cc ion chamber was placed on the phantom surface in the center of the imaged field to measure skin entrance exposure during 6 pelvic DTs. Using these data, PCXMC 2.0 software was used to calculate ODs by Monte Carlo simulation and ED using International Commission on Radiological Protection publication 103. Prior work at this institution used a similar phantom to determine the ODs and ED for renal stone protocol NCCT. We have recently used Pelvic DT in our ambulatory clinic to evaluate patients with suspected distal ureteral stones or suggestive symptoms.

Results: The ED for NCCT is significantly higher than pelvic DT (3.04 +/- 0.34mSv vs. 1.23 +/- 0.65mSv, p=0.013). Mean ODs for pelvic DT are substantially lower compared with NCCT, especially to the testes (0.29 +/- 0.41mGy vs. 5.17 +/- 3.73mGy, respectively). Clinically, 13 patients had a distal ureteral stone identified on pelvic DT. Stone identification was confirmed in all by ureteroscopic visualization or CT. In 4 of these patients, the stone was not visible on plain KUB.

Conclusion: In our limited clinical experience, pelvic DT appears to be a useful imaging study for the evaluation of distal ureteral stones in an office setting. Pelvic DT exposes patients to less radiation than NCCT, especially to the radiosensitive gonads. Additionally, it provides cost savings relative to NCCT. Further study is required to compare the sensitivity and specificity of pelvic DT to NCCT for stone identification.

Poster #32
ASSESSMENT OF RADIATION SAFETY KNOWLEDGE AMONG UROLOGY RESIDENTS IN THE UNITED STATES

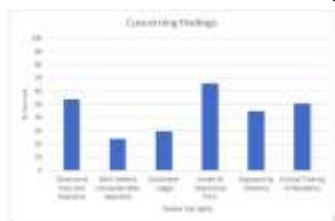
Marilyn Hopkins, John Loomis, Andrew Harris, Jason Bylund
University of Kentucky
Presented By: Marilyn K. Hopkins, MD

Introduction: Urologists are increasingly exposed to fluoroscopy as minimally invasive techniques continue to become more widespread. Fluoroscopy, or electromagnetic radiation, can be harmful due to cellular damage. Appropriate knowledge and safety precautions concerning fluoroscopy are necessary and ideally should be taught in training.

Methods: A 19-question survey was constructed to assess radiation safety training, knowledge, behavior, and attitudes. The survey was sent via REDCap™ to all Urology program directors in the United States with a request to forward this to their residents. The survey was closed after 3 weeks.

Results: 136 urology trainees responded during the study period. 13% learned fluoroscopic radiation safety formally, 46% informally, 35% both informally and formally, 6% no education. 46% reported radiation safety being part of their curriculum. Only 50% have received training in residency. When asked about directional X-ray travel and exposure, 54% answered correctly with 15% being unsure, 6% stating no difference, and 26% choosing X-ray originating below the patient exposes the operator to more radiation. Regarding conditions related to radiation exposure, 94% believe infertility is potentially related, 83% cataracts, 93% leukemia and lymphoma, 57% central nervous system tumors, 77% birth defects, and 4% diabetes. Regarding protection, 9% wear lead-lined glasses, 30% dosimeters, 99% thyroid shields, 0% lead gloves, 97% lead apron, 26% lead shield, and 0% nothing. Regarding fluoroscopy machine settings, 7% knew the machine used was set to continuous, 73% pulse, and 21% were unsure. 66% had awareness of the directional travel the machine routinely used. Regarding safety techniques, 99% knew decreasing time and 100% knew wearing protective materials were ways to decrease exposure. However, when asked about distance and exposure, only 55 % answered correctly. Most respondents believe radiation safety is important (89%) and desire more formal education (64%).

Conclusion: As minimally invasive and endoscopic urology becomes more pervasive, an appropriate knowledge of fluoroscopic safety is paramount. Education potentially decreases exposure dose to both the user and the patient. Taking appropriate exposure precautions and using techniques to lessen the exposure dose likely decreases the risk of exposure complications. Formal education and possibly credentialing programs are likely needed to ensure residents learn methods to keep them safe during their career.



Poster #33

IMPROVING RESIDENT COMPLIANCE WITH REPORTING OF RADIATION EXPOSURE BY LINKING DOSIMETERS TO MOBILE DEVICES

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Presented By: Paul J. Bloch, MD

Introduction: Urological procedures often involve the utilization of fluoroscopy, exposing both physician and patient to ionizing radiation. It has been demonstrated that mandated reporting of radiation exposure by physicians is associated with reduction of radiation use and subsequent exposure (Nicholson et al., 2015). As a part of a multidisciplinary quality improvement initiative to increase resident compliance with radiation exposure reporting, our department purchased new dosimeters for residents that can be read by mobile devices using Bluetooth technology. This study sought to determine if this new technology successfully improved compliance.

Methods: Instadose1TM dosimeters from Mirion Technology were previously worn by urology residents at the University of Tennessee Health Science Center. This dosimeter connects to USB ports of computers and is read by logging onto a secure online account. Starting July 1, 2018, Instadose+TM dosimeters were utilized by our residents. This dosimeter has Bluetooth technology, and readings are performed by the InstadoseTM app on mobile devices. This dosimeter eliminates the necessity for computer access. At the time of this abstract, retrospective review of recording data was conducted from July 1, 2015 to August 31, 2018. Outcomes reviewed were average monthly compliance rates and average monthly radiation exposure.

Results: At the time of this abstract, data from 21 urology residents was reviewed from July 1, 2015 to August 31, 2018. Monthly compliance rates prior to the new dosimeters ranged from 0-42% with average monthly compliance 18%. With the new dosimeters, compliance has ranged from 75-92% with an average monthly compliance of 83.5%. Average monthly radiation exposure prior to the new dosimeter was 6mrem/per/mo, and this average changed to 5mrem/per/mo after the new dosimeters were utilized.

Conclusion: In this study, we demonstrate that improving the ease of radiation exposure reporting lead to increased compliance and a slight decrease in average radiation exposure. This initiative lead to successful quality improvement for both resident and patient safety.

Resources: Nicholson, George T., et al. "Direct Physician Reporting is Associated with Reductions in Radiation Exposure in Pediatric Cardiac Catheterizations." *Catheterization and Cardiac Interventions*, Vol. 86, no. 5, 2015, pp. 834-840

Poster #34

PATIENT CRITERIA ON EMERGENCY PHYSICIAN ASSESSMENT TO REDUCE CT UTILIZATION: AN E-QUAL STUDY

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Presented By: Matthew Sorensen, MD

Introduction: The American College of Emergency Physicians (ACEP) conducts E-QUAL studies to determine means of cost reduction and improved outcomes in patients on initial hospital evaluation. CT scan remains the gold standard for diagnosing nephrolithiasis. In certain patients, treatment could be initiated with renal ultrasound and KUB x-ray to reduce radiation, cost, and the sheer quantity of patients undergoing CT scan through the ER. This study defines an algorithm for ER patient selection to have preferential ultrasound and plain X-ray.

Methods: Over 300 institutions participated in Wave III of the Avoidable Imaging Initiative and of these 5 chose CT stone study for quality assessment. The study objective would be assessing the trend in number of patients with stones diagnosed on CT over total studies

ordered for flank pain/back pain with history of nephrolithiasis. These numbers were compared to other institutions. Variables established for renal ultrasound/KUB were creatinine <1.2, WBC <13,000, Temperature <100 degrees Fahrenheit, Urinalysis without nitrite or large bacteria, SIRS criteria or persistent tachycardia.

Results: Over Q1, the baseline rate of identification of stones in patients suspected of renal colic was 13%. The range from all emergency departments participating in the study was 9%-52%. There were a total number of ED discharges for back or flank pain of 660 and of these 87 received CT stone study. The results for Q3 are presently in progress to determine if the intervention of these metrics affects overall CT rate in patients with a constellation of stone symptoms.

Conclusion: This preliminary data suggests there could be merit to introducing changes at the ER level to reduce overutilization of CT scan for stone patients with recurring nephrolithiasis. By identifying a scenario indicating a need for surgery, CT can be avoided in exchange for intraoperative fluoroscopy in select patients or medical expulsive therapy in known stone formers.

Poster #35
EVALUATING THE CLINICAL UTILITY OF MRI PREDICTING CLINICAL TO PATHOLOGIC TUMOR STAGE CHANGES

Brendon Gros, Jessie Gills, Danica May, Robert Helm, David Thompson, Scott Delacroix
LSUHSC - New Orleans, Dept of Urology
Presented By: Brendon J. Gros

Introduction: Prostate cancer (PCA) accounts for nearly 10% of all new cancer diagnosis, with an estimated 164,690 estimated new cases for 2018 in the United states alone; however, it only accounts for 5% of cancer deaths. It is well established that prostate cancer grade and stage are the driving factors of PCA survival. Based on these factors non-treatment or treatment planning is made. Within the NCCN guidelines for PCA, based on AJCC 2018 staging, clinical tumor (T) staging is based solely on digital rectal examination, i.e. the presence or absence and extent of involvement of palpable tumor. We examined the clinical utility of the addition of prostate MRI in clinical staging of localized prostate cancer, with the hypothesis that MRI based clinical staging is non-inferior to DRE.

Methods: Utilizing institutionally housed REDCap database we examined all patients who underwent prostate MRI for elevated PSA and subsequently diagnosed with localized PCA, analyzing the value of MRI with a PIRAD ≥ 3 to predict a clinical to pathologic tumor stage change.

Results: Of the 552 records available for review, 74 included all the follow necessary information: clinical tumor staging on DRE, MRI with PI-RADS score, and pathologic tumor staging. 66 of the 74 (89.2%) records showed a change from clinical tumor to pathologic tumor staging. To determine if MRI with a PI-RADS ≥ 3 would have been useful in predicting these changes, we calculated the sensitivity (87.9%), specificity (100%), positive predictive value (100%), and negative predictive value (50%).

Conclusion: Our results suggest more study is indicated and appropriate to determine the clinical utility of MRI in prostate cancer clinical tumor staging, preferably a prospective study directly comparing the predictive value of clinical tumor staging on DRE alone against clinical tumor staging using both DRE and MRI.

	CHANGE	NO CHANGE	
PI-RADS ≥ 3	58	0	58
PI-RADS < 3	8	9	17
all	66	9	75
Positive Predictive Value	100.00%		
Negative Predictive Value	50.00%		
Sensitivity	87.88%		
Specificity	100.00%		
Positive Likelihood Ratio	inf		
Negative Likelihood Ratio	0.12		

Poster #36
PROSTATE IMAGING REPORTING AND DATA SYSTEM VERSION 2: A PREDICTOR OF BIOPSY OUTCOME?

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²University of Tennessee Health Science Center, College of Medicine, Memphis, TN

Presented By: Joshua Adam Earl, MD

Introduction: Our aim was to examine the efficacy of the Prostate Imaging Reporting and Data System Version 2 (PIRADS v2) for identifying prostate cancer.

Methods: A retrospective review was conducted on 203 patients undergoing prostate cancer screening at the University of Tennessee Medical Center. Patients who underwent both multi-parametric magnetic resonance imaging and trans-rectal ultrasound guided prostate biopsies between October 2016 and December 2017 were included in the study. Prostate specific antigen levels and pathologic results from prostatectomy, when available, were obtained. Biographical and demographic information were also recorded. 101 patients were included in the study. Of these, 67 were diagnosed with prostate cancer and 29 underwent prostatectomy. Twenty were categorized as low risk prostate cancer and 47 were categorized as intermediate/high risk cancer. The ability of PSA, age, family history, and PIRADS score to predict prostate pathology results was analyzed using logistic regression. The diagnostic efficacy of PIRADS v2 was analyzed and receiver operator curves were constructed.

Results: Logistical regression analysis showed that PIRADS v2 was a significant independent predictor of Gleason score on prostate biopsy ($p < 0.001$). However, PSA, age, and family history were not significant predictors of Gleason score. A PIRADS v2 cutoff of 4 had a sensitivity and specificity of 0.76 and 0.63, respectively. The area under the curve for diagnosing any prostate cancer was 0.725.

Conclusion: This review indicates that PIRADS v2 can be used to estimate the likelihood of prostate cancer on prostate biopsy. The diagnostic efficacy appears consistent with what has been reported at other institutions.

Table 1

PIRADS v2 score cutoff	Negative for prostate cancer	Positive for prostate cancer	Sensitivity	Specificity
3	11	5	0	0
3	11	11	0.905	0.014
4	10	18	0.761	0.618
5	8	19	0.947	0.918

Poster #37
ACCURACY OF CONTRAST-ENHANCED ULTRASOUND (CEUS) TO DETECT RENAL CELL CARCINOMAS (RCC) IN PATIENTS WITH END STAGE RENAL DISEASE (ESRD)

Andrew Ostrowski, Amanda Kahn, Isabella Galler, Melanie Caserta, and David Thiel

Mayo Clinic Florida

Presented By: Andrew K. Ostrowski, MD, MSc

Introduction: Diagnostic work-up of suspicious renal masses has traditionally been conducted with contrast-enhanced computed tomography (CECT) and/or magnetic resonance imaging (MRI). However, patients who are not candidates for intravenous contrast due to allergy, ESRD, and/or those on dialysis are unable to utilize traditional contrast imaging due to risks of anaphylaxis, nephrotoxicity, or further kidney damage. CEUS of the kidneys is an alternative option for evaluating focal indeterminate or suspicious renal lesions. We evaluated the accuracy of CEUS in patients who presented with end stage renal insufficiency or patients on dialysis who were not candidates for CECT or MRI.

Methods: Following IRB approval, 9 kidneys from 7 patients (ages 54-74 years) were evaluated with CEUS and noted to have enhancing renal masses after the administration of ultrasound contrast agent (UCA). CEUS was performed on a state of the art US machine equipped with contrast specific software. The UCA Lumason (Sulfur hexafluoride lipid type-A microspheres, Bracco Diagnostics, Monroe Township, NJ) was utilized to evaluate the lesion in question. Imaging was performed with a dual mode screen display that allows for side by side images with the grayscale image on one half of the screen and the contrast enhanced image

on the other half of the screen. Continuous imaging of the lesion in question was performed for 3-5 minutes.

Results: A total of 9 masses from 7 patients were included in the study. 8 masses were examined following laparoscopic radical nephrectomy and 1 mass was evaluated following partial nephrectomy. All lesions had characteristics of renal cell carcinoma, demonstrating 100% accuracy for CEUS identifying malignant lesions in our cohort. The observed RCC malignancy subtypes are as follows: 3 clear cell, 2 papillary, 1 clear cell papillary, 2 cystic, 1 tubulocystic. There were no false positive results noted.

Conclusion: In this small sample size of patients with surgically resected tumors, CEUS demonstrates excellent accuracy in diagnosing contrast-enhancing renal masses with suspicion for renal cell malignancy. Future prospective validation with a large sample size is warranted to better evaluate the value of CEUS in renal mass workup.

Poster #38

SIMULATION TRAINING IN PROSTHETIC UROLOGY: CADAVERIC LABORATORY TRAINING IMPROVES TRAINEE'S SURGICAL CONFIDENCE AND KNOWLEDGE

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¹Duke University Medical Center, ²Boston Medical Center, ³VA Boston Healthcare System, ⁴Coral Gables Hospital, ⁵ArkLaTex Urology, ⁶Urology San Antonio, ⁷University of South Florida, ⁸University of Alabama, ⁹Boston Medical Center, Boston, MA

Presented By: Evan Carlos, MD

Introduction: Constraints on surgical resident training (work hour mandates, shorter training programs, etc.) and inequalities in the availability of expert surgical educators in academic programs may limit the acquisition of prosthetic surgical skills. We aimed to evaluate changes in resident procedural knowledge and self-confidence before and after an in-person course focused on penile prosthesis implantation led by high-volume surgeons.

Methods: As part of the 2017 Society of Urologic Prosthetic Surgeons and the Sexual Medicine Society of North America Annual Meeting, 31 urology residents participated in a course that included didactic lectures and a hands-on cadaveric laboratory for prosthetic Urology. Participants completed surveys before and after the course. Wilcoxon Signed Rank tests for matched pairs were used to compare respondents' pre- and post- course knowledge (% questions answered correctly) and confidence ratings. Prior implant experience was assessed by the number of penile prosthesis cases performed before the training course.

Results: 31 residents (median age: 30 years old; 24 males; 7 female) participated in this study. Most participants were fourth (41.9%) and fifth years residents (38.7%). Pre-course surgical exposure to penile prosthetic surgery consisted of less than 10 (35.5%), 10-20 (45.2%), and more than 20 cases (19.3%) during their residency. Participants showed a significant improvement in procedural knowledge test scores (68.8 ± 13.4 vs. 74.2 ± 13.0 , $p < 0.05$) and self-reported increased median surgical confidence levels (4 vs 3, p -value < 0.001) after completion of the cadaveric course. Subgroup analysis demonstrated that residents with prosthetic surgery experience of less than 10 cases benefitted the most. In addition, improvement in surgical confidence levels observed was greater than the improvement in surgical knowledge. The overall cost of the simulation training course was approximately \$1,483 per resident.

Conclusion: Simulation training of urology residents in prosthetic surgery improves surgical confidence and knowledge in a climate of increasing educational constraints and scarcity of expert prosthetic educators at a relatively reasonable cost. Improvements in resident knowledge and surgical confidence may result improved intra-operative performance. Further research is needed to better understand the benefits and limitations of cadaveric simulating training in prosthetic urology.

Poster #39

ESTABLISHING A FUNCTIONAL AND REPRODUCIBLE ANATOMICAL CLASSIFICATION SYSTEM FOR PEYRONIE'S DISEASE WITH DUPLEX DOPPLER ULTRASOUND

Katherine Cockerill¹, Colleen Ball¹, Grace Edwards², Peter Cannizzo², Jordan Cochuyt¹, Gregory Broderick¹

¹Mayo Clinic Jacksonville, ²Mayo Clinic

Presented By: Katherine Cockerill, MD

Introduction: Evaluation of Peyronie's disease (PyD) utilizing penile Color Doppler Duplex Ultrasound (CDDU) provides insight on disease characteristics, severity of concomitant erectile dysfunction, and anatomical variations in disease presentation. The literature provides limited guidance regarding the ultrasonographic appearance of Peyronie's plaques. The purpose of this study is to establish a functional and reproducible anatomical classification system for PyD based on a large retrospective series.

Methods: During work-up for PyD, 526 patients were examined using penile CDDU performed by a single surgeon at our institution from February 2005 to March 2018. Doppler 2D images were reviewed by an independent examiner based on classification criteria as follows: Grade I- hypoechoic shadowing without calcification; Grade II- focal microcalcifications; Grade III- scattered microcalcifications; Grade IV- confluent calcified and palpable plaque (a) of the tunica albuginea or (b) of the septum.

Results: 526 patients were evaluated with median age of 59 years. Patient comorbidities included HTN (43.2%), diabetes mellitus (14.9%) and heart disease (13.2%). Degree of curvature measured at the time of CDDU was noted to be < 30 degrees in 52 patients (11.1%), > 30 and <45 degrees in 68 patients (14.5%), > 45 and <60 degrees in 126 patients (26.9%), > 60 and <90 degrees in 68 patients (14.5%), and > 90 degrees in 55 patients (11.8%), with 99 patients having an hourglass effect (21.2%). A majority of patients with gross/palpable calcifications had subsequent evaluation with CT scan for further anatomic classification. Review of Doppler imaging with application of the grading criteria for 526 patients resulted in the primary diagnosis of Grade I ultrasonographic appearance in 236 (45.95%) of patients, Grade II in 104 (19.81%) of patients, Grade III in 90 (17.14%) of patients, and Grade IV(a) and IV(b) in 83 (15.81%) and 6 (1.14%) of patients. Six out of 526 patients did not have classification of their disease due to lack of images specific to their PyD.

Conclusion: We propose a unique reproducible classification system for CDDU evaluation of Peyronie's disease that will hopefully enhance the literature and serve as a useful tool in the diagnosis and interpretation of ultrasonography appearance of PyD.

Poster #40

USING A ROOT CAUSE ANALYSIS LEARNING CURRICULUM FOR QUALITY IMPROVEMENT IN UROLOGY RESIDENCY

Vince DiCarlo, Andrew Harris

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Presented By: Andrew Harris, MD

Introduction: Patient safety education is expected during residency training. The Accreditation Council for Graduate Medical Education states "The program, its faculty, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety." However, data suggests most programs fall short. Root Cause Analysis (RCA) has been established as an effective method for critically analyzing adverse events and better understanding patient safety issues. We sought to describe and assess the implementation and effectiveness of a RCA based curriculum in Urology residency.

Methods: A RCA curriculum was designed to analyze and discuss patient safety events in our department. The curriculum began with an educational session about RCA methodology given by a faculty member with a particular interest in this area. Teams composed of an attending physician, chief resident, and junior resident selected an adverse event to present at our monthly morbidity and mortality conference. Over a 6-month period, each team presented a recent complication and event timeline. Then, in an interactive format with the department, each team completed a fish bone diagram (Figure 1). Quantitative assessment of performance was done using a 5-point Likert scale and qualitative feedback of the curriculum's value, strengths, and limitations was performed.

Results: An RCA was completed and presented by 6 teams for the following adverse outcomes: fascial dehiscence, continuous bladder irrigation misuse, neonatal urosepsis, superior mesenteric artery ligation, pyelonephritis after ureteroscopy, and surgical site infection. Quantitative peer assessment of the presentations demonstrated aptitude in selecting an appropriate case (mean Likert scale score of 4.8/5, range 4.6-5.0), prioritizing important factors (score: 4.85, (4.4-5.0)), defining root causes (score: 4.9/5, (4.8-5.0)), and proposing solutions (score: 4.65/5, (4.2-5.0)). The qualitative feedback assessment noted the value of critical thinking to reduce complications, with the greatest limitation being time constraints. In addition, suggestions for improving the process included inclusion of ancillary staff and selection of topics with modifiable solutions.

Conclusion: RCA can be used as an educational tool for practice-based learning and improvement education with specific focus on quality improvement and patient safety for Urology residents. The program was well received and will continue in our department.



Poster #41

THE CAREER EXPECTATIONS AND PREFERENCES OF UROLOGY APPLICANTS

Julia Han¹, Andrew Rabley¹, Alex Vlasak², Shahab Bozorgmehr¹, Vincent Bird¹, Louis Moy¹

¹University of Florida Department of Urology, ²University of Florida College of Medicine

Presented By: Julia Han, MD

Introduction: To survey the characteristics, career goals, and practice preferences of current urology applicants.

Methods: An anonymous survey was emailed to applicants pursuing a residency position at the University of Florida for the 2017-2018 academic year Urology Match. The survey included questions on demographics, motivating factors to pursue urology, plans for fellowship training, and anticipated and desired practice patterns.

Results: 151 of 295 applicants completed the survey, mean age 26.9± SD 2.3. Males had a higher interest in academics/research, cancer, men's health, and minimally invasive surgery technology. Females had a higher interest in public health, surgery, and mixture of surgical and medical management. 64.1% planned on completing a fellowship. Males had a higher interest in urologic oncology and endourology. Females had a higher interest in female pelvic medicine and reconstructive surgery, andrology and sexual medicine, and pediatric urology. 76.9% anticipated having an academic affiliation, 68.9% working in an urban setting, and 98% working full-time, with no difference based on gender. For desired quality of life after residency, maximum number of hours considered acceptable was 51 to 60 (36.4%) and 61 to 70 (35.1%). Regarding an acceptable call schedule, most considered two to four nights reasonable. Most felt an acceptable starting salary was \$250,000 to \$400,000 and \$200,001 to \$350,000 for private practice and academic urology respectively.

Conclusion: Current urology applicants desire to work in academics, urban settings, and pursue subspecialty fellowship training. What they consider acceptable work hours, call schedule, and financial compensation appear compatible with the current practice of urology.

Poster #42

BURNOUT AND EMPATHY AMONG ACADEMIC UROLOGY FACULTY AND TRAINEES

Andrew Leung, Mark Henry, Chad Ritenour, Christopher Filson

Emory University Department of Urology

Presented By: Andrew K. Leung, MD, MPH

Introduction: Physician burnout has become more prevalent while reported satisfaction with work-life balance has been declining. A negative correlation between physician burnout and empathy has also been noted. This study aimed to determine the levels of burnout and empathy among faculty, fellows, residents, and advanced practice providers at a large academic Urology program.

Methods: The Maslach Burnout Inventory (MBI) and the Interpersonal Reactivity Index (IRI) are widely validated surveys used to detect burnout and empathy, respectively. Survey links to the MBI and the IRI were emailed to all Department of Urology faculty, fellows, residents, and advanced practice providers. Four reminders were emailed over a 2-week period. Burnout criteria was defined as subcategory "Emotional Exhaustion" ≥ 27 or "Depersonalization" ≥ 10 on the MBI. Descriptive analysis was performed and survey results were compared to those in literature.

Results: The survey response rate was 79%. Overall the department met both independent burnout criteria with MBI mean scores of 27.7 and 10.7 for "Emotional Exhaustion" and "Depersonalization", respectively. 63% (10/16) of attendings, 68% of fellows and residents (13/19), and 67% of APPs (2/3) met burnout criteria. There was no significant difference in mean empathy subset scores when stratified by role (faculty, fellow and resident, advanced practice provider), gender, or number of years in practice as a faculty member (≤ 5 , 6-20, or ≥ 21). The department had lower empathy subset scores compared to the general population (Table 1). Faculty members with 6-20 years in practice had significantly lower empathy scores in two of the four IRI subcategories (Fantasy and Personal Distress).

Conclusion: At a large academic Urology program, the majority of faculty, trainees, and advanced practice providers exhibited characteristics of burnout-which was consistent across different roles and levels of experience. Future studies should focus on understanding the variation in burnout across practice settings as well as how to increase awareness of empathy given its relationship to burnout.

IRI Empathy Data Summary

Score	Emory Urology (mean, SD)	General Population (mean, SD)
Empathy	2.2 (0.7)	2.2 (0.8)
Personal Distress	2.2 (0.6)	2.7 (0.7)
Empathic Concern	2.8 (0.7)	2.8 (0.7)
Empathy Composite	2.7 (0.6)	2.9 (0.7)

Poster #43

OPTIMIZING SURGICAL MARGINS IN HIGH RISK PROSTATE CANCER PATIENTS USING PREOPERATIVE MRI FOR SURGICAL PLANNING

John Moore, Joseph Ivey, Ryan Peacock, Raymond Pak

Mayo Clinic Florida

Presented By: John R. Moore, MD

Introduction: In the workup for prostate cancer, multiparametric MRI is commonly used to assist with diagnosis. It is utilized in the active surveillance arena, fusion biopsy setting, and patients with refractory elevated PSA. Our study looks to see the utility of mpMRI in preoperative surgical planning in patients with high risk oncologic features.

Methods: A retrospective review was performed to evaluate all patients undergoing robotic assisted laparoscopic prostatectomy with a single surgeon between June 2016 and May 2018. Charts were reviewed to evaluate preoperative mpMRI, PSA, and Gleason score. Patients were delineated into high risk subset if pathologically grade group 4 or higher, a PSA greater than 20, or cT3 disease. Postoperative pathologic characteristics such as surgical margins,

presence of extra prostatic extension (EPE), and pathologic stage were recorded. Fisher exact test was performed to determine statistical significance of surgical margins on patients with positive EPE on mpMRI vs. those patients without EPE on mpMRI.

Results: Of a total of 144 RALPs performed during this time period, 67 had high risk features. Of these 67 patients, 17 patients (25%) had findings of EPE on mpMRI. 12 of these 17 patients (71%) had congruent pathology confirming the presence of EPE. A total of 11/50 (22%) patients had EPE on final pathology in the setting of a negative MRI. This resulted in a PPV of 70%, a NPV of 78%, and a specificity of 88%. With patients that had suspected EPE at the time of surgery, prostate margins were positive in 6/17 patients (35%). In patients with negative mpMRI for EPE but EPE present on final pathology, margins were positive in 7/11 (64%) of cases (p 0.2458). This represented a relative risk reduction of 44%.

Conclusion: In the setting of high risk prostate cancer, mpMRI can be a useful tool in surgical planning. When compared to occult EPE, preoperative mpMRI findings suspicious for EPE reduced positive surgical margin status.

Poster #44

COMPARISON OF MICRO-ULTRASOUND AND MULTIPARAMETRIC MRI IMAGING FOR PROSTATE CANCER: AN INTERNATIONAL META-ANALYSIS

Giovanni Lughezzani, MD¹, Ander Astobieta, MD², Frederic Staerman, MD³, Eric Klein, MD⁴, Robert Abouassaly, MD⁴, Ahmed El-Shefai, MD⁴, Gregg Eure, MD, FACS⁵

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Presented By: Gregg R. Eure, MD

Introduction: Multi-parametric MRI (mpMRI) is growing as a screening approach for prostate cancer due to trials such as PROMIS and PRECISION demonstrating high sensitivity and negative predictive values. Unfortunately, implementation of mpMRI programs is complicated in practice due to additional costs, complexity, learning curve, procedure time, and experience required for adequate interpretation and reproducible results. Many men are also contraindicated to MRI due to concerns with renal function, claustrophobia, or ferromagnetic implants. This work aims to compare the sensitivity and specificity of mpMRI with the novel high-resolution micro-ultrasound imaging modality, which maintains the workflow, simplicity and low cost of ultrasound and can be used to target biopsies in real-time without the need for MRI.

Methods: Data from 5 sites was aggregated, totaling 274 subjects presenting for ExactVu micro-ultrasound guided biopsy with available mpMRI studies. Samples in all subjects were taken from mpMRI targets and micro-ultrasound targets, with up to 12 systematic samples filled in. mpMRI targets were sampled cognitively at 4/5 sites using the micro-ultrasound system and with either a software-fusion system or cognitively using micro-ultrasound at the 5th site. Clinically significant cancer was considered any Gleason Sum > 6 and targeted samples were taken for PI-RADS > 2 or PRI-MUS1 > 2 lesions.

Results: mpMRI demonstrated strong sensitivity (84%), with slightly weaker NPV (69%). Micro-ultrasound sensitivity (95%) and NPV (84%) were both higher. However, micro-ultrasound was considerably less specific (16% vs 25% for mpMRI) and both modalities showed a relatively poor PPV of 43%.

Conclusion: Micro-ultrasound's high sensitivity makes it an attractive option for both screening and targeted biopsy, even relative to the more widely studied mpMRI. Further larger-scale studies are required to ensure these early results are repeatable. The relatively lower specificity suggest micro-ultrasound is not yet able to exclude biopsy in as many men, though the higher sensitivity indicates the confidence may be higher in the men it does exclude.

Poster #45
CELL CYCLE PROGRESSION SCORE FROM BIOPSY SPECIMEN OUTPERFORMS UPGRADING OR UPSTAGING POST-RP FOR PREDICTING BIOCHEMICAL RECURRENCE AFTER SURGERY

Kristen Gurtner, MD, Stephen Bardot, MD, Jay Bishoff, MD, Stephen Freedland, Saradha Rajamani, MStat, Steven Stone, PhD, Thorsten Schlomm, MD, Daniel Canter, MD
 Presented By: Kristen Elizabeth Gurtner, MD

Introduction: Improved prognostic markers for prostate cancer are an important part of addressing the over- and under-treatment of prostate cancer. Active surveillance (AS) has gained rapid adoption for men with low-risk disease but concern about pathologic upgrading or upstaging is considered a significant risk factor for progression, and therefore, has in some cases limited clinical adoption of AS. Prolaris measures the expression level of cell cycle progression genes and has demonstrated accurate prediction of prostate cancer aggressiveness in numerous clinical settings. In this study, we compare Prolaris to pathologic upgrading or upstaging after RP in predicting BCR after surgery.

Methods: CCP testing was performed on the biopsy specimens from pooled cohort of men treated by RP for low risk localized prostate cancer, and the score was combined with CAPRA using a validated algorithm to generate a CCP clinical risk (CCR) score. Upgrading or upstaging was defined as patients with biopsy Gleason score $\leq 3+4$ and clinical stage $\leq T2$ who had a post-RP Gleason score $\geq 4+3$ and/or a post-RP pathological stage $\geq T3$. Association with biochemical recurrence (BCR) was evaluated by Cox proportional hazards model.

Results: In the pooled cohort of 557 men, there were 56 (10%) men with either upgrading or upstaging and 116 (20%) patients who had BCR. In multivariable analysis, CCP was strongly associated with BCR ($p = 1.7 \times 10^{-3}$, $\chi^2 = 9.87$). Both CAPRA and upgrading/upstaging were also significant, but contributed substantially less prognostic information to the final model ($p = 0.013$, $\chi^2 = 6.18$ and $p = 0.041$, $\chi^2 = 4.16$, respectively). The CCR score provided the most prognostic information for predicting BCR in univariate data (Table).

Conclusion: These data indicate that a patient's CCP score may contain more robust predictive information for eventual BCR than traditional pathologic variables. Further, these data can be used to provide significant risk discrimination to patients who are considering AS.

Funding: Myriad Genetic Laboratories

Variable	Univariate HR (95% CI)	Univariate p-value	Multivariate HR (95% CI)	Multivariate p-value
CCP	1.68 (1.25, 2.26)	0.0004	1.49 (1.16, 1.92)	0.0007
Upgrading	1.27 (1.01, 1.60)	0.04	1.27 (1.01, 1.61)	0.04
Upstaging	1.27 (1.01, 1.60)	0.04	1.27 (1.01, 1.61)	0.04
CCR	1.68 (1.25, 2.26)	0.0004	1.49 (1.16, 1.92)	0.0007
CCP + CAPRA	1.68 (1.25, 2.26)	0.0004	1.49 (1.16, 1.92)	0.0007

Poster #46
VALIDATION OF MSKCC PRE-PROSTATECTOMY NOMOGRAM IN MEN WHO UNDERGO TARGETED BIOPSY USING LESION-BASED AGGREGATE CORE HISTOLOGY REPORTING

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 Presented By: Zachary A. Glaser, MD

Introduction: The Memorial Sloan Kettering Cancer Center (MSKCC) Pre-Prostatectomy nomogram is a widely used resource for preoperative counseling. Clinical factors including prostate biopsy findings predict the likelihood of adverse pathology and cancer-specific survival following radical prostatectomy. The widespread adoption of multiparametric magnetic resonance imaging (mpMRI) and MRI/ultrasound fusion-targeted biopsy (TB) permits detection of clinically-significant cancer with image-guidance. The prognostic utility of the MSKCC Pre-Prostatectomy nomogram has not been validated in the setting of this high-yield biopsy technique. Furthermore, whether TB pathology should be reported by each individual core (IC)

or by highest Gleason score and percentage of aggregate cores (AG) from a single MRI targeted lesion is under consideration. The purpose of this study was to evaluate the MSKCC Pre-Prostatectomy nomogram using TB pathology according to IC and novel AG histologic reporting schemas.

Methods: Men who underwent systematic transrectal ultrasound biopsy (SB) followed by mpMRI and TB who later elected for radical prostatectomy at our institution were included. Patient information was entered into the MSKCC Pre-Prostatectomy nomogram using five biopsy schemes (SB alone, IC from TB alone, AG from TB alone, SB plus IC from TB, and SB plus AG from TB). The likelihood of extracapsular extension (EPE), lymph node involvement (LNI), and seminal vesical invasion (SVI) as predicted by the nomogram were compared to final surgical pathology. Clinicopathologic information was extracted from the electronic record under IRB-approval.

Results: We identified 63 men from January 2014 to November 2017. On receiver operating characteristic (ROC) curve analysis, IC, AG, SB plus IC, and SB plus AG exhibited similar if not improved area under the curve (AUC) compared to SB alone to predict EPE (0.671, 0.674, 0.658, 0.6613 vs. 0.6085). For LNI, superior AUC was observed for AG (0.647) compared to IC (0.571) and SB (0.524). Equivocal SVI prediction was observed for TRUS-B plus IC compared to TRUS-B alone (0.727 vs. 0.733).

Conclusion: Using TB pathology for the MSKCC Pre-Prostatectomy nomogram appears comparable if not improved to prognostication using SB cores. These findings should prompt further analysis in a larger cohort, and determine if AG reporting superiorly prognosticates final surgical pathology.

Poster #47

INTERPRETATION OF DOMAIN SCORES ON THE EXPANDED PROSTATE CANCER INDEX COMPOSITE: HOW DOES THE DOMAIN SCORE TRANSLATE INTO FUNCTIONAL OUTCOME?

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Presented By: Aaron Laviana, MD

Introduction: The Expanded Prostate Cancer Index short form (EPIC-26) is a validated questionnaire for measuring health-related quality-of-life in men with prostate cancer. Responses to the 26 individual questions are aggregated into 5 domains, with domain scores reported as a measure of patient function. However, the relationship between domain score and specific functional outcomes remains unclear, leading to potential confusion about expectations after treatment. For instance, what does a sexual function domain score of 80 actually mean with regard to a patient being able to obtain an erection sufficient for intercourse? Resultantly, we sought to clarify the relationship between domain scores and individual questions reflecting clinically relevant outcomes on the EPIC-26.

Methods: Utilizing data obtained from the Comparative Effectiveness Analysis of Surgery and Radiation Study, a multicenter, prospective, population-based, observational study of men diagnosed with localized prostate cancer in 2011 to 2012, we analyzed the EPIC-26 from 2,138 men at 3 years of follow-up who were treated with either radical prostatectomy, radiotherapy, or active surveillance. We dichotomized every EPIC-26 questionnaire item into its best possible outcome (best versus any other response) and assessed the percentage of men at each domain score who obtained the best result.

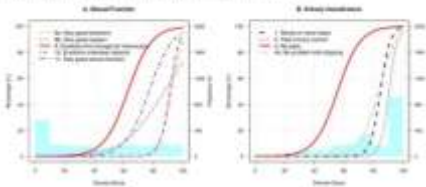
Results: Figures were created to show the relationship between domain scores and individual items. These demonstrate the domain score below which optimal functional outcomes are less likely for each question. For example, a score of 80 on sexual function corresponded to 96% of men reporting an erection sufficient for intercourse whereas at 40, only 12% of men reported adequate erections. Meanwhile, at a score of 95 on the urinary incontinence domain, 100% of patients reported no leakage, but at a score of 50, 0% of patients were dry. Similarly, at a score of 95, 100% of patients reported no pads versus only 30% at a score of 50.

Conclusion: Our findings show a novel way to interpret EPIC-26 domain scores and understand clinically meaningful differences in domain scores. Our results suggest a particular change in domain score may have a differential impact on clinically relevant functional

outcomes depending on the baseline domain score. This information may be valuable when counselling men preoperatively on treatment options.

Funding: Clinical Scientist Institutional Career Development Program Award K12 (Laviana)

Figure 1. Correlation of EPIC-26 scores in dysfunctioned hist positivity outcomes for each quadrant within that domain. A) Details the overall domain results and questions 1-4 on the EPIC-26; B) Details the survey instrument details and questions 5-6 on the EPIC-26.



Poster #48

SHOULD PATIENTS WITH HIGH RISK PROSTATE CANCER UNDERGO A MODIFIED BLADDER NECK DISSECTION DURING ROBOTIC ASSISTED LAPAROSCPOIC PROSTATECTOMY (RALP)?

John Moore, Ryan Peacock, Joseph Ivey, Raymond Pak

Mayo Clinic Florida

Presented By: Joseph Ivey

Introduction: High risk prostate cancer is an increasing commonality that generally requires acute intervention. More and more studies are suggesting that RALP might provide some survival benefit compared to other treatment options in this patient population. Our study looks to evaluate the need for wide bladder neck excision in patients with high risk prostate cancer.

Methods: A retrospective review was performed of all patients that underwent RALP with a single surgeon between 06/2016 and 05/2018. Patients were separated into high risk (grade group 4 or higher, PSA >20, cT3 or higher disease) and low/intermediate risk prostate cancer. Final surgical pathology was viewed to determine the presence of bladder neck margin positivity. A Fisher's exact test was then performed to determine the significance of bladder neck positivity between the two groups.

Results: Of the 144 patients that underwent RALP, 68 were deemed to be in the high risk criteria while 76 were in the low or intermediate risk category. Of the 68 high risk patients, 10 (14%) patients had positive bladder neck margin on final pathologic specimen. 1 of the 79 (1.2%) patients with low/intermediate risk disease had similar findings (p 0.0031).

Conclusion: A wide bladder neck margin should be performed in patients with high risk prostate cancer. In this situation, there is a significantly elevated risk of occult bladder neck involvement, and a more radical resection could reduce margin positivity.

Poster #49

SALVAGE PELVIC LYMPHADENECTOMY IN PROSTATE CANCER PATIENTS WITH PERSISTENT BIOCHEMICAL RECURRENCE FOLLOWING PRIOR RADICAL PROSTATECTOMY AND SALVAGE RADIOTHERAPY WHO HAVE ISOLATED FLUCICLOVINE-PET DETECTED PELVIC NODES

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Presented By: Mehrdad Alemozaffar, MD, MS

Introduction: The role of salvage pelvic lymphadenectomy in prostate cancer patients with biochemical recurrence after prostatectomy and salvage radiation therapy is controversial. There is concern that conventional imaging may not detect the entire disease burden and lymphadenectomy may not be helpful if extra-pelvic disease already exist. Fluciclovine PET has recently been approved for detection of persistent prostate cancer after localized therapy. We sought to evaluate our experience with salvage lymphadenectomy in prostate cancer patients with persistent biochemical recurrence after prior prostatectomy and salvage radiation therapy who had fluciclovine detected pelvic only (regional) nodes.

Methods: Retrospective IRB Database approval obtained. Patients with prostate cancer who were initially treated with radical prostatectomy and lymphadenectomy with subsequent biochemical recurrence and salvage radiotherapy with persistent biochemical recurrence who underwent fluciclovine PET and subsequent salvage pelvic lymphadenectomy were reviewed. Prostatectomy pathology, preoperative PSA, perioperative parameters, lymphadenectomy pathology, and subsequent PSA and adjuvant therapy were obtained.

Results: Six patients had fluciclovine positive pelvic only lymph nodes with no evidence of distant metastasis. Average age at salvage lymphadenectomy was 61 yrs. Post-prostatectomy pathologic stage was pT2 in 3 patients, pT3a in 2, and pT3b in 1, with only one patient having positive lymph nodes. Prostatectomy Gleason group was 2 in 1 patient, 3 in 3 patients, 4 in 1 patient, and 5 in 1 patient. Mean pre-salvage lymphadenectomy PSA was 3.79. Mean lymph nodes removed were 21.5 and mean lymph nodes positive were 6.3. Mean EBL was 466cc with mean operative time of 3 hours and median length of stay of 2 days. Mean PSA drop postoperatively was 2.77. Two patients achieved a non-detectable PSA postoperatively, (one on hormone deprivation and another off) with a mean f/u of 1 year.

Conclusion: FACBC-PET was 100% specific for detection of pelvic lymph node metastasis in prostate cancer patients with persistent biochemical recurrence after prior prostatectomy and radiation therapy. While achievement of a non-detectable PSA after salvage lymphadenectomy occurred in the minority of patients, most patients had a substantial drop in their PSA off hormones. Long-term data regarding survival are required to better understand the role of salvage lymphadenectomy in these patients.

Poster #50

PREDICTORS OF CONTINENCE AFTER SALVAGE ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY FOR RECURRENT PROSTATE CANCER

Fikret Onol, MD, Hariharan Ganapathi, MD, Seetharam Bhat, MD, Travis Rogers, MD, Cathy Jensen, Vipul Patel, MD

Florida Hospital Global Robotics Institute

Presented By: Fikret Fatih Onol, MD, FEBU

Introduction: Salvage robotic-assisted laparoscopic prostatectomy (sRALP) has emerged as a feasible treatment option for local failure after primary non-surgical therapies. As compared to primary RALP, sRALP has lower rates of continence recovery after surgery. In this study, we aimed to identify the predictors of continence by examining the largest single-surgeon sRALP series reported to date.

Methods: We retrospectively reviewed our IRB-approved database including >11,500 RALP cases. Between 2008 and 2018, 121 patients underwent sRALP by a single surgeon (VP). Of these, 93 who had complete >6 month follow-up data were included in the study. For primary treatment, 73 (78.5%) had received radiation (external beam/intensity modulated radiotherapy, brachytherapy, proton beam) and 20 (21.5%) had received ablation (HIFU, cryoablation, electroporation, microwave) therapies. We compared clinical and pathological characteristics between postoperatively continent (no pads/day) and incontinent patients using chi-square and t-tests. We determined the parameters predicting continence by using logistic regression analyses.

Results: Forty-eight (51.6%) patients achieved full continence after sRALP. Preoperative demographic characteristics and postoperative clinicopathological outcomes were similar between continent and incontinent groups, except for primary treatment (Table 1). Thirty-four (46.5%) patients with a previous radiation treatment were continent as compared to 14 (70%) patients with ablation therapies (p=0.039). Following variables were entered into univariate and multivariate analyses: age (<65 vs. ≥65 years), BMI (<30 vs. ≥30 kg/m²), preoperative AUA score (<8 vs. ≥8), preoperative SHIM score (<21 vs. ≥21), primary therapy (radiation vs. ablation), degree of nerve sparing (<50% vs. ≥50%), and postoperative leak in cystography. Age (OR: 4.51, CI: 1.5-13.49) and primary therapy (OR: 5.95, CI: 1.46-24.14) were found as independent predictors of continence.

Conclusion: Recovery of full continence was achieved in 51.6% of patients undergoing sRALP. Compared to ablation therapies, prior treatment with radiation and age >65 years were found as adverse prognostic factors that affect full continence recovery after sRALP.

Parameter	Continent (n=48)	Incontinent (n=45)	p-value
Age (years)	65.2 ± 7.1	65.1 ± 7.2	0.98
BMI (kg/m ²)	26.8 ± 4.5	27.1 ± 4.6	0.89
Preoperative AUA score	22.1 ± 6.2	22.3 ± 6.1	0.92
Preoperative SHIM score	18.5 ± 5.4	18.7 ± 5.3	0.95
Primary therapy			0.039
Radiation	34 (70.8%)	14 (31.1%)	
Ablation	14 (29.2%)	31 (68.9%)	
Postoperative leak in cystography			0.001
No leak	48 (100%)	14 (31.1%)	
Leak	0 (0%)	31 (68.9%)	
Postoperative continence			0.001
Continent	48 (100%)	14 (31.1%)	
Incontinent	0 (0%)	31 (68.9%)	

Poster #51 - WITHDRAWN

Poster #52

EVALUATING THE SAFETY OF SPACEOAR® FROM A UROLOGIC PERSPECTIVE

John Moore, Kevin Parikh, Ronak Patel, Kaitlynn Custer, Todd Igel

Mayo Clinic Florida

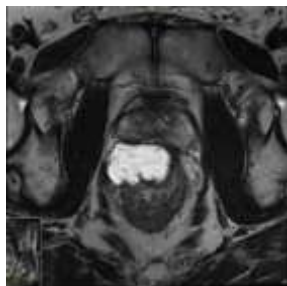
Presented By: John R. Moore, MD

Introduction: Radiation-induced rectal toxicity is a non-infrequent complication of pelvic radiation for prostate cancer. SpaceOAR is a hydrogel substance that is injected between the rectum and the prostate to increase the anterior/posterior distance between the two organs. Theoretically, this will decrease the radiation dose administered to the rectum. The primary aim of this study is to establish the safety of the administration of SpaceOAR and document the common side effects after.

Methods: A prospectively maintained, retrospective review of patients undergoing SpaceOAR® prior to IMRT from January 2016 to June 2018 was recorded (IRB: 16-006502). All patients had SpaceOAR® injected via a transperineal approach under general anesthesia. Chart review was performed to check for adverse effects including readmission, urinary tract infections, difficulty with defecation, and urinary retention.

Results: 81 patients with a mean age of 72 (48 - 81) and a mean BMI of 29.9 (21.6 – 50.7) met criteria for the study. Mean prostatic volume was 46.62 grams (11 – 150 g). One patient had an episode of urinary retention after general anesthesia and one patient experienced an episode of urinary tract infection. Another patient had SpaceOAR injected partially into the rectal wall without evidence of constipation or obstruction. There were no complications that required readmission or re-operation.

Conclusion: Our study aimed to evaluate the efficacy and safety of the administration of SpaceOAR® in patients undergoing radiation therapy for prostate cancer. We encountered no complications requiring readmission or significant intervention. SpaceOAR® is a novel concept that is safe to perform with minimal adverse effects.



Poster #53

SALVAGE CRYOABLATION OF PROSTATE WITH TRANSPERINEAL DENONVILLIERS' SPACE EXPANSION WITH SPACEOAR: POSTOPERATIVE OUTCOMES

Caitlin Shepherd, Harry Clarke, Professor of Urology

Medical University of South Carolina

Presented By: Caitlin Shepherd, MD

Introduction: Transperineal injection of a degradable hydrogel, SpaceOAR, is FDA approved for expanding the space between the prostate and rectum during radiation therapy (RT) to reduce rectal dose. We previously described the use of this agent in treating patients undergoing salvage cryoablation (SC) for recurrent prostate cancer (CaP). We now report patient outcomes after one year of use of this novel modality at our institution.

Methods: We analyzed results of patients who underwent cryoablation of the prostate with concomitant injection of SpaceOAR from July 2017 to July 2018. A retrospective database was created and postoperative outcomes at 2-weeks 3, 6, 9 and 12 months are reported using the Clavien-Dindo Classification along with PSA values for patients with available data.

Results: 16 patients underwent cryoablation of the prostate with the injection of SpaceOAR; 15 SC and 1 primary cryoablation. Mean age was 69 years; initial clinical stratification was low

(5/16), intermediate CaP (2/16), high risk (1/16) and 8 patients with unknown pathology at time of cryotherapy. Previous treatment for those undergoing SC consisted of radiation alone (7/16), radiation plus androgen deprivation therapy (4/16), external beam, brachytherapy and androgen deprivation therapy (2/16), radiation followed by SC (1/16), proton beam therapy (1/16). A mean prostate volume of 20.3g was recorded. At initial post-operative follow up, a third of patients reported a grade 1 complication including scrotal swelling, perineal pain or dysuria (5/15) with one patient reporting a grade 2 complication (inpatient admission for UTI at an outside facility). At 3 months postop, two patients continued to have grade 1 complications (perineal pain) and one patient that had previously undergone SC presented with a grade 3 complication (rectoprostatic fistula). No further complications were noted. No grade 4-5 complications have been noted. The patient with the rectorprostatic fistula required further surgical intervention for repair. PSA nadired to undetectable as defined as PSA <0.1ng/dl in 40% of patients with at least 3 month follow up with PSA data (4/10).

Conclusion: Use of SpaceOAR with prostatic cryoablation is associated with minor complications with only one reported grade 3 complication in our series. Further studies evaluating the long term outcomes of this new technique are needed.

Poster #54

HIGH INTENSITY FOCUSED ULTRASOUND FOR PATIENTS FOR FOCAL PROSTATE CANCER IN ALL GRADE GROUPS

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Presented By: Maria F. Becerra, MD

Introduction: Focal High-intensity focused ultrasound (HIFU) may reduce the morbidity of radical therapy while maintaining cancer control in localized prostate cancer (PCa). We report outcomes of the first prospective cohort in the US of patients treated with focal HIFU for localized PCa.

Methods: Single-center prospectively collected cohort of patients treated with primary focal HIFU from January 2016 to July 2018 for PCa. All patients underwent a 12 core TRUS-guided biopsy, and MRI-US fusion biopsy if a targetable lesion was identified. Any Gleason grade was considered. Patients with very low-risk or high-risk and high-volume PCa were excluded. Only patients eligible for focal (<50% of prostate volume) or subtotal (>50% but less than whole-gland) ablation were included. Follow-up protocol included trimestral Prostate-specific antigen (PSA) and patient-reported outcomes by validated questionnaires. Additionally, MRI-US fusion biopsy at 6 or 12 months for high-risk and low- intermediate-risk PCa, respectively.

Results: 50 men were included in the analysis of which 17(34%), 23(46%), 5(10%), 3 (6%), 2(4%) were from grade groups 1 through 5, respectively. Mean age was 68 (range 50-8), mean baseline PSA of 6.51 ng/mL (range 1.63-25.9) and mean prostate size of 35.82 (range 14-84) cc on TRUS. 43 (86%) men underwent focal ablation and 7(13.2%) subtotal ablation. IPSS scores went back to their baseline at 3-6 months in 68% of men. 88% of patients maintained the erectile function and 12% had erectile dysfunction at 12 months. The overall complications rate was 45%. Major complications were seen in only 4 (6%) patients, who required TURP due to urinary retention post HIFU. Mean follow up was 16.3 months (range 3-31). At 3 months follow up, a nadir PSA below 2ng/mL was achieved in 39(78%). 18(36%) patients underwent a control biopsy. Of these, 16 (88%) patients had negative infield biopsy (12 patients with negative biopsies and 4 with had low risk contralateral lesions) and 2 had low risk infield lesions. Of these, one continues surveillance and the other had 24 month biopsy demonstrating recurrence and required salvage prostatectomy.

Conclusion: Focal HIFU is a safe procedure for localized PCa with acceptable complications and excellent functional outcomes. Short-term oncological outcomes are promising but longer follow-up is needed to asses oncologic control.

Funding: NA

Poster #55
THE PROSPER TRIAL: PROSTATE-SPECIFIC ANTIGEN (PSA)- AND
CHEMOTHERAPY-RELATED ENDPOINTS IN PATIENTS WITH NONMETASTATIC
CASTRATION-RESISTANT PROSTATE CANCER TREATED WITH ENZALUTAMIDE

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Presented By: Kelvin A. Moses, MD, PhD, FACS

Introduction: Men with nonmetastatic castration-resistant prostate cancer (nmCRPC) are at high risk of developing metastatic CRPC (mCRPC). In previous clinical trials, enzalutamide improved overall survival and radiographic progression-free survival in men with mCRPC. The phase 3 PROSPER trial was designed with a primary endpoint of metastasis-free survival (MFS).

Methods: PROSPER is a randomized, double-blind, placebo-controlled, phase 3 multinational study (NCT02003924) in patients with asymptomatic nmCRPC, PSA doubling time \leq 10 months and PSA \geq 2 ng/mL at screening. Patients were randomized 2:1 to enzalutamide 160 mg or placebo. The primary endpoint was MFS. Secondary endpoints included time to PSA progression, time to first use of new antineoplastic therapy, overall survival, time to first use of cytotoxic chemotherapy, chemotherapy-free disease-specific survival (CFDS), chemotherapy-free survival (CFS), and safety.

Results: In 1401 patients, baseline characteristics were well balanced between treatment arms (Table). Enzalutamide significantly reduced the risk of metastasis or death (hazard ratio [HR], 0.29; $P < .0001$), time to PSA progression (HR, 0.07; $P < .0001$), and time to first use of new antineoplastic therapy (HR, 0.21; $P < .0001$) vs placebo. Enzalutamide treatment also significantly delayed the time to first use of cytotoxic chemotherapy, CFDS, and CFS (Table). A significantly greater proportion of patients receiving enzalutamide than those receiving placebo had confirmed PSA responses of \geq 50% decline, of \geq 90% decline, and to undetectable levels below the limit of quantification (Table). Median treatment duration was 18.4 vs 11.1 months with enzalutamide vs placebo. Adverse events (AEs) were higher with enzalutamide than placebo (any grade, 87% vs 77%; grade \geq 3, 31% vs 23%; serious, 24% vs 18%); 10% vs 8% of men receiving enzalutamide vs placebo discontinued due to AEs.

Conclusion: For patients with nmCRPC and a rapidly rising PSA, enzalutamide resulted in a clinically meaningful and statistically significant reduction in developing mCRPC as well as an increase in time to PSA progression and time to first use of new antineoplastic therapy (including chemotherapy), CFDS, and CFS. PSA responses were significantly greater in patients receiving enzalutamide than those receiving placebo. AEs were consistent with the established safety profile of enzalutamide.

Funding: Supported by Pfizer Inc. and Astellas Pharma, Inc.

Baseline Characteristics	Enzalutamide + ADT (n = 933)	Placebo + ADT (n = 468)
Age, median, y	74	73
PSA doubling time \leq 10 mo, no. (%)	725 (77.6)	385 (77.3)
Screening PSA, ng/mL	11.1	10.2
Endpoints		
Patients with baseline PSA values, no. (%)	933 (100)	468 (100)
Patients with \geq 1 postbaseline assessment, no. (%)	887 (95.1)	438 (93.6)
Confirmed PSA response \geq 50%, no. (%)	712 (76.3)	311 (2.4)
P value	< .0001	
Confirmed PSA response \geq 90%, no. (%)	511 (54.8)	2 (0.4)
P value	< .0001	
Confirmed PSA response to undetectable level, no. (%)	90 (9.6)	0
P value	< .0001	
Time to first use of cytotoxic chemotherapy, median (95% CI), mo	NR (38.1-NR)	39.7 (36.9-43.3)
HR (95% CI)	0.28 (0.20-0.52)	
P value	< .0001	
CFDS, median (95% CI), mo	38.8 (37.3-40.3)	36.9 (35.9-37.9)
HR (95% CI)	0.40 (0.31-0.52)	
P value	< .0001	
CFS, median (95% CI), mo	38.1 (37.3-38.9)	34.8 (33.5-36.1)
HR (95% CI)	0.50 (0.40-0.64)	
P value	< .0001	
Abbreviations: ADT, androgen deprivation therapy; CI, confidence interval; NR, not reached.		

Poster #56

UPGRADING RATES OF A RACIALLY DIVERSE GROUP OF VETERANS ON ACTIVE SURVEILLANCE

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Presented By: Jonathan Silberstein, MD, MBA, FACS

Introduction: Prostate cancer (PCa) is the most common malignancy in men and the second leading cause of cancer-related death. African Americans (AA) are known to have more advanced PCa features and are more likely to die from PCa. It remains unclear if active surveillance (AS), a strategy intended to prevent overtreatment of low-risk prostate cancer, is safe for AA men.

Methods: A prospective database study was performed at the South Louisiana Veterans Administration Medical Center (SLVHCS), New Orleans, LA. Included in this study were men who elected AS as their primary treatment with low- and very low-risk PCa (Gleason 3+3, PSA<10, \leq CT2a) who have undergone at least one biopsy (Bx) subsequent to their diagnostic Bx. Data analysis was performed using R 3.5.1 (Berkeley, CA).

Results: Our database included 222 men on AS, 150 met inclusion criteria: 102 AA and 48 CA (Caucasian) subjects. Within this group, men were on AS for average of 1057 days, with no differences between AA and CA ($p=0.5$). The average time to second Bx was 446 days with no significant difference between races ($p=0.5$). When comparing Age, BMI, PSA, PSA density, prostate volume, and baseline testosterone level at first and second Bx among the AA and CA men, no statistical differences were found. AA men had a greater volume of disease based on the number of positive cores, both on their initial diagnostic Bx (1.99 vs 1.56; $p=.031$) and subsequent Bx (2.42 vs 1.54; $p=.009$).

At second Bx, 27% AA vs 39% CA were found to have no malignancy, 44% AA vs 38% CA consistent disease (3+3) and 29% AA vs 23% CA had any upgrading. Subjects who upgraded on second Bx, most had 3+4 disease; 50% AA vs 72% CA. Of the 44 men who received a third Bx, no differences in upgrading were noted; 19% AA and 24% CA with one patient having ISUP grade 3,4,5.

Conclusion: At subsequent prostate Bx, AA men have a similar rate of upgrading to CA men; however, upgrading and AA with ISUP grade 3,4,5 may correlate. When considering AS for AA men, early confirmatory Bx may be of particular value to rule out higher-risk disease.

Poster #57

EXAMINING AND UNDERSTANDING VALUE: THE COST OF PREOPERATIVE CHARACTERISTICS, INTRAOPERATIVE VARIABLES, AND POSTOPERATIVE COMPLICATIONS OF ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY

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Presented By: Leslie McFann Peard, MD

Introduction: As value-based health care gains favor and reimbursement models move toward quality rather than quantity of care, a better understanding of cost and its predictors becomes increasingly important. We aim to identify how preoperative characteristics, intraoperative variables, and postoperative complications impact cost of robotic-assisted radical prostatectomy.

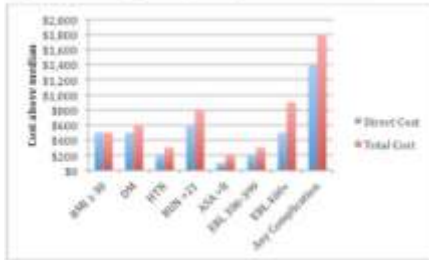
Methods: Using our institution's National Surgical Quality Improvement Program (NSQIP) database, we identified prostatectomies performed from January 2012 to March 2017. Retrospective chart review was done to collect perioperative data and financial data was collected from the business office.

Results: Two hundred seventy five patients underwent prostatectomy during this time period. Median total cost (TC) was \$16,600 (IQR \$15,100-\$18,300), and median direct cost (DC) was \$11,200 (\$10,100-\$12,400). Among preoperative characteristics, BMI \geq 30 kg/m², diabetes, hypertension, and BUN >21 were associated with an increased DC of \$500, \$500, \$200, and \$600 respectively ($p<0.05$) (figure 1). ASA class III was also associated with increased DC of \$200 compared to ASA class I-II ($P<0.05$). Considering perioperative characteristics,

increasing operative times and estimated blood loss were associated with increased DC ($p < 0.001$, < 0.05 respectively). Any postoperative complication was associated with an increased DC of \$1,400 ($p < 0.05$). On multivariable analysis, adjusted DC for each 1-unit increase in BMI was \$129 ($p < 0.001$), the adjusted change in cost for a length of stay greater than three days was \$4099 ($p < 0.001$), for each 30-min increase in OR duration DC increased by \$410 ($p < 0.05$), any post operative complication increased DC by \$5397 ($p < 0.01$), and patients with diabetes had increased DC by \$1860 ($p < 0.05$).

Conclusion: BMI, diabetes, hypertension, BUN > 21 , ASA class, operative duration, EBL, and post-operative complications were associated with significantly increased direct cost of radical prostatectomy. Understanding perioperative factors affecting cost can contribute to understanding value in prostatectomy and improve quality in urologic care.

Figure 1. Variables significantly affecting cost in RALP, N=275.



Poster #58

COST IMPLICATIONS OF PERIOPERATIVE INTRAVESICAL CHEMOTHERAPY FOR BLADDER TUMOR RESECTION: GEMCITABINE VERSUS MITOMYCIN-C

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Presented By: KC Biebighauser, MD

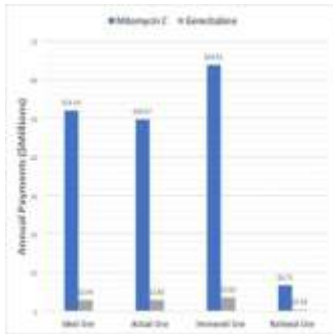
Introduction: Perioperative intravesical gemcitabine and mitomycin-C (MMC) have similar efficacy in decreasing recurrence after resection of bladder tumors, and gemcitabine is considerably cheaper than MMC. We estimated national cost savings associated with replacement of intravesical MMC with gemcitabine for eligible Medicare beneficiaries undergoing bladder tumor resection (TURBT).

Methods: We retrospectively reviewed TURBT cases (CPT 52224, 52234, 52235, 52240) performed from July 2017 through December 2017 at our institution. Appropriateness for perioperative chemotherapy was based on intraoperative tumor description and clinical factors in line with current guidelines. We extrapolated results to TURBT cases performed for fee-for-service Medicare beneficiaries in 2016. Cost estimates were calculated as if all potential doses of MMC were replaced by gemcitabine across a variety of utilization rates (i.e., actual use, all indicated cases (ideal use), and actual plus ideal (increased use)). We used current Medicare average sales price for typical doses of MMC (\$1152.61) and gemcitabine (\$64.99), and recent national use estimates of 5% of TURBT cases for Medicare beneficiaries receiving intravesical chemotherapy.

Results: Among 114 TURBT cases at our institution, 31 cases (27%) were appropriate for, and received, intravesical MMC. MMC was not indicated and not given for 59 cases (52%). For the remaining cases, MMC was either indicated and not given (13/114, 11%), or not indicated and given (11/114, 10%). We identified 117,108 TURBT cases performed for fee-for-service Medicare beneficiaries in 2016. We extrapolated ideal use at 39% of cases, actual use at 37% of cases, and increased use at 48% of cases. Replacing MMC with gemcitabine would result in annual Medicare savings of \$49.2 million with ideal use, \$46.9 million with actual use, \$60.3 million with increased use, and \$6.4 million based on the estimated national use of intravesical chemotherapy (Figure).

Conclusion: Increased costs associated with optimizing utilization of perioperative chemotherapy for bladder tumor resection at a national level would be offset by replacing mitomycin-C with gemcitabine.

Figure. National cost implications of replacing intravesical MMC with gemcitabine across different rates of utilization.



Poster #59

IMPACT OF DEMOGRAPHIC FACTORS AND SYSTEMIC DISEASE ON URINARY STONE RISK PARAMETERS AMONGST STONE FORMERS

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Presented By: Carter Boyd, BS

Introduction: Age, sex, and race are all known to influence kidney stone risk. Previous literature has demonstrated a clear link between kidney stone disease, obesity, and diabetes. Our objective was to examine in a multivariate analysis the associations between various demographic factors and systemic diseases on stone risk parameters in a stone forming population.

Methods: A retrospective chart review of adult kidney stone patients who completed 24-hour urine collections from April 2004 through August 2015 was performed. Demographic information was captured including age at collection, sex, race, and BMI. Chart review was performed to assess for a diagnosis of diabetes and hypertension. The results of CT Imaging, and renal/abdominal ultrasonography, performed with ± 6 months were reviewed for a diagnosis of fatty liver disease. Statistical analysis included Pearson correlation analysis, Spearman correlation analysis, and linear and logistic regression analyses, both univariate and multivariate.

Results: There were 589 patients included in the study. Numerous urinary parameters were significant in association with demographic factors or systemic diseases in a multivariate analysis. Older age was associated with decreased calcium (Ca) excretion ($p=0.0214$), decreased supersaturation of calcium oxalate (SSCaOx) ($p=0.0262$), decreased supersaturation of calcium phosphate (SSCaP) ($p<0.0001$), and decreased urinary pH ($p=0.0201$). Males excreted more Ca ($p=0.0015$) and oxalate (Ox) ($p=0.0010$), had lower urine pH ($p=0.0269$), and higher supersaturation of uric acid (SSUA) ($p<0.0001$) than women. For race, African Americans had lower urine volume ($p=0.0023$), less Ca excretion ($p=0.0142$), less Ox excretion ($p=0.0074$), and higher SSUA ($p=0.0049$). Diabetes was associated with more Ox excretion ($p<0.0001$), lower SSCaP ($p=0.0068$), and lower urinary pH ($p=0.0153$). There were positive correlations between BMI and Ca excretion ($p=0.0386$), BMI and Ox excretion ($p=0.0177$), and BMI and SSUA ($p=0.0045$).

Conclusion: These results demonstrate that both demographic factors and systemic disease are independently associated with numerous risk factors for kidney stones. These results highlight that there are differential risks for individuals to develop kidney stones based on these

associations. The mechanisms responsible for these associations and disparities (racial differences) need to be further elucidated.

Funding: AUA Research Scholar/Medical Student Summer Fellowship; NORC Intramural Grant; K-08

Poster #60

EVALUATION OF PATIENT SAFETY EVENT REPORTING IN A UROLOGICAL PATIENT POPULATION

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Presented By: Timothy William Stark, MD

Introduction: Patient safety event reporting is crucial to fostering a culture of safety and identifies quality problems and patient safety issues. To be effective, event reporting must be emphasized from leadership, adopted by everyone within the organization, and performed often. We sought to investigate the reporter role, as well as the types of safety events reported on urological patient admissions and operations at our institution.

Methods: A retrospective examination of patient safety event reports from July 2016 through June 2018 involving urology patients was performed. Events were examined by event type, event description, event reporter, and event reporter type. Reporter type included hospital clerical staff, technologist/technician (Lab, X-ray, etc.), registered nursing staff, pharmacy staff, resident/fellow physician, attending physician, and anonymous source. Percentage of patient safety events reported per role was determined (table 1). Additionally, each reported safety event was evaluated and categorized, including those by anonymous sources (table 1).

Results: A total number of 175 patient safety events were reported during the study period. A total of 123 events were reported by an identified role and 52 by an anonymous source. Analysis of event by reporter role revealed that registered nursing staff reported 46% of events while faculty physicians reported <2% of events, residents <1%, and anonymous reporters comprised 30%. Analysis of event by type revealed wound care/skin integrity and operating room equipment/device issues represented the highest number of reported events (table 1). Of the 30% of events reported by anonymous sources, wound care/skin integrity and operating room equipment/device events represented the highest number of reported safety events (table 1).

Conclusion: Resident and faculty physicians rarely contribute to patient safety event reporting and therefore are not involved in valuable opportunities to improve patient care. Hospital organizations should attempt to foster a culture of patient safety through ensuring a blame free environment and exhibiting the importance of the safety culture. Further education of physicians is needed in this area to enhance patient safety reporting and quality improvement in our patients.



Poster #61

TRENDS IN UTILIZATION AND SURGICAL SUBSPECIALTY PERFORMING ADRENALECTOMY IN PATIENTS WITH DISSEMINATED CANCER: AN ANALYSIS OF THE NSQIP DATABASE

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Ochsner Clinic Foundation

Presented By: Kristen Elizabeth Gurtner, MD

Introduction: The adrenal gland is a common site of metastasis for a variety of different primary tumors. Anecdotal reports have suggested that in the presence of solitary or oligometastatic disease adrenalectomy may confer a survival advantage. In this study, we compared utilization trends of adrenalectomy in this patient population as well as comparing which surgical subspecialty was performing the adrenalectomy.

Methods: Patients in the American College of Surgeons National Surgical Quality Improvement Program who underwent an adrenalectomy between 2011 and 2016 were

included. Patients were stratified by the presence or absence of disseminated cancer; patients who underwent a concomitant procedure at the time of adrenalectomy were excluded. Recent surgical trends in the utilization of adrenalectomy for disseminated cancer were compared as well as the proportion of adrenalectomies performed by different surgical subspecialties.

Results: From 2011-2016, 4,207 patients underwent an adrenalectomy, of which 270 (6.4%) patients had disseminated cancer at the time of surgery. The majority of these patients were male (58.9%), over the age of 60 years (63.0), and Caucasian (82.2%). During the study time period, there was not a significant change in the number of adrenalectomies performed either in the setting of disseminated cancer or for other indications. For the whole cohort, urologists performed the adrenalectomy 10.4% of the time, however in the setting of disseminated cancer, urologists performed the surgery almost double the amount of time (19.3%). Perioperative outcomes were not statistically different when the surgery was done in the setting of disseminated cancer ($p=0.47$) or when performed by a urologist versus a general surgeon ($p=0.52$).

Conclusion: In this study, there has not been a significant change in the utilization trend of adrenalectomy for patients with disseminated cancer. Also, general surgeons are still performing the vast majority of adrenal surgery. Urologists are more likely to perform an adrenalectomy in the setting of disseminated cancer without any perioperative detriment. Due to its retroperitoneal location adjacent to the kidney, urologists should continue to become more involved in the management of adrenal diseases.

Poster #62

SCRUTINIZING MEDICARE PAYMENTS TO THE HIGHEST PAID UROLOGISTS UTILIZING THE CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS) PUBLIC USE DATASET

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University of North Carolina

Presented By: Case Wood, MD

Introduction: Since 2012, CMS has released a series of publicly available data files summarizing the utilization and payments for procedures, services, and prescription drugs provided to Medicare beneficiaries by physicians. In 2015, the dataset covered almost 900,000 clinicians receiving over \$90B in Medicare payments. Recent cost control efforts have focused on "hot-spotting," or identifying the patients contributing the most cost within a community. This study hypothesizes that a similar approach of "hot-spotting" could be applied to clinicians.

Methods: We examined the CMS public use dataset for 2015 and 2016. A payment search tool created by Burch et al and published by the Wall Street Journal allowed for examination and comparison of providers who received Medicare fee-for-service payments in 2015. Comparisons were made between the top one and two percentiles, median percentile, and quartiles with regard to payments received. Specific payment variables analyzed were "number of unique patients", "total payments", payments related to "drugs", "evaluation and management", "surgeries and procedures", "services", "imaging", "labs", and "other". A relative ratio (top percentile: median percentile) was also calculated for each variable.

Results: The averages for each payment variable were significantly different ($p < 0.05$) when comparing the top percentile and median percentile of providers. Additionally, in 2015, the top 10 providers received more overall Medicare payments than the bottom 1100 providers combined. The top 1% (90 providers) received as much as the bottom 26% (2,378 providers). These differences in payments were also reflected in the 2016 data.

Conclusion: Significant disparities were seen in payments received between the top, median, and bottom earners with regard to Medicare payments. Although the dataset is the most complete public account of physician-specific Medicare billing, it has limitations and may not present the full picture of a specific physician's practice. Notably, the data reflects Medicare payments, not income and may include services rendered by other physicians within a practice or advanced practice providers such as physician assistants or nurse practitioners working under a doctor's supervision. Additionally, the data does not indicate quality of care nor does it account for patient complexity. Regardless, the data does suggest that significant disproportions in Medicare payments exist within the field of urology.

	Total Payments (\$)	Insurance (%)	Out-of-Pocket Payments (\$)
Top 1% (n=95)	\$62,084,799.40	0.00%	\$1,023,186.44
Top 1% (n=100)	\$111,366,966.37	0.11%	\$462,089.43
Top 10% (n=1247)	\$900,575,534.01	12.94%	\$490,429.68
Top 50% (n=2347)	\$411,021,114.97	26.77%	\$223,426.46
Median Payments (n=95)	\$18,687,462.17	0.001%	\$171,088.66
Bottom 10% (n=440)	\$147,294,796.50	28.39%	\$77,119.32
All Payments	\$1,765,645,175.49	100.00%	\$195,586.27

Table 1: Aggregate 2017 CMS Payments in Outpatient by Payers as Quantile

	Total (%)	Median (%)	Q1	Q3
# Patients	1,580	937	2.0	6,612,000.34
Total Payments	\$1,203,130	\$116,411	4.2	\$1,240,000.70
Drugs	\$177,218	\$11,208	25.1	\$1,807,000.00
Education/Management	\$111,101	\$10,805	0.0	\$6,804,000.00
Diagnostic Procedures	\$120,011	\$14,368	4.3	\$1,179,000.24
Surgery	\$179,477	\$108	36.2	\$1,204,000.00
Imaging	\$65,739	\$1,611	17.0	\$2,989,100
Lab	\$67,612	\$2,662	22.0	\$1,211,000.00
Other	\$33,446	\$97	134.3	\$1,600,179.00

Table 2: Variation of CMS payments received by Top 1% and Median 1% of Outpatient in 2017

	Total Payments (\$)	Insurance (%)	Out-of-Pocket Payments (\$)
Top 1% (n=95)	\$64,282,162.50	0.00%	\$94,207,000.28
Top 1% (n=100)	\$101,563,176.36	0.00%	\$161,767,176.28
Top 10% (n=1247)	\$633,786,964.62	15.69%	\$633,786,964.62
Top 50% (n=2347)	\$439,143,821.74	26.39%	\$639,143,821.74
Median Payments (n=95)	\$13,976,963.04	0.000%	\$105,932.87
Bottom 10% (n=440)	\$142,294,216.12	18.01%	\$162,294,216.12
All Payments	\$1,777,414,463.90	100.00%	\$195,586.27

Table 3: Aggregate 2018 CMS Payments in Outpatient by Payers as Quantile

Poster #63

RACIAL DISPARITIES IN CANCER-RELATED MORTALITY IN PATIENTS WITH URINARY BLADDER MALIGNANCY IN THE US

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Presented By: Alan Nieder, MD

Introduction: It is estimated that in 2018 there will be 81,190 new cases of bladder cancer with an estimated number of new deaths projected to be 17,240, making it the fifth most common cause of cancer in the U.S. Current evidence shows a racial disparity in survival, though studies assessing whether the association differs according to insurance status are scant. The objective of our study was to determine if the association between race and bladder cancer 5-year survival differs according to health insurance.

Methods: A retrospective cohort study was conducted using the 2015 SEER database. The inclusion criteria for study participants was >18 years, who presented with primary malignancy of the urinary bladder (n=39,587). The independent variable was patient's reported racial status (White, Black and Asian Pacific Islanders (API)), the main outcome was 5-year cancer-specific survival. The covariates included in the analysis were age, gender, marital status, stage, grade, recurrence, and surgery. Unadjusted and adjusted Cox regression analysis were used to calculate the hazard ratios (HR) and 95% confidence intervals (CI).

Results: The adjusted hazard ratios for 5-year overall survival stratified by insurance status indicated that Blacks with any Medicaid were 1.44 times more likely to die of bladder cancer (95% CI 1.28-1.62) compared with Whites. The corresponding hazard of death in uninsured Blacks was 1.30 (95% CI 1.00-1.69). However, there was no statistically significant association between race and survival between insured Black and insured White patients (HR 1.10; 95% CI 0.54-2.24). API had a similar 5-year survival compared with Whites among the insured and any Medicaid categories. However, the uninsured API group had increased survival (HR 0.71 95% CI 0.51-1.00) compared with uninjured White patients.

Conclusion: While race is accepted as a poor prognostic factor in the mortality from bladder cancer, insurance status can help to explain some of the survival differences across races. We suggest empowering clinicians to identify high-risk patients and connect them with additional services to improve access to quality care. Future research should be conducted to explore the variation in access/quality of care for patients of varying insurance status to minimize disparities in mortality between races for patients with bladder cancer.

Poster #64

REPEAT PROSTATE BIOPSY PATTERNS IN MEN WITH A SINGLE NEGATIVE PROSTATE BIOPSY: A POPULATION-BASED ANALYSIS

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Presented By: Rashid Sayyid, MD, MSc

Introduction: Transrectal ultrasound guided prostate biopsies (TRUS-BX) have false-negative rates in excess of 30%. Recent population-based studies have shown that following a single negative TRUS-BX, 24% of North American men are eventually diagnosed with prostate cancer. The frequency of repeat biopsies, and thus the frequency of health services/resources utilization, is unknown in this unique cohort of patients. Our objective was thus to determine the repeat biopsy pattern of men with a single negative TRUS-BX.

Methods: This is a population-based study of 95,675 men with a single negative TRUS-BX from Ontario, Canada between April 1994 and March 2015. All patients were older than 40 years at inclusion and had no prior history of prostate cancer. Data from the Ontario Health Insurance Plan, Ontario Cancer Registry, and Registered Persons Database, housed at the Institute of Clinical and Evaluative Sciences was used to determine the short- and long-term repeat biopsy patterns of our cohort.

Results: The median age of our cohort was 63.0 years (IQR 57.0-70.0). The median time till the 1st repeat biopsy was 1.8 years (IQR 0.7-3.9). Within the 1st year of a negative TRUS-BX, 11.5% of men underwent a repeat biopsy. This value increased to 18.5%, 30.4%, 38.5%, 41.5%, and 42.5% at two, five, ten, 15, and 20 years following a negative TRUS-BX. Among 67,675 men with five years of follow-up, 19.2% underwent only one further TRUS-BX, 6.5% only two, and 2.2% three or more. Among 33,076 men with 10 years of follow-up, 22.5% underwent one repeat TRUS-BX only, 9.6% two further TRUS-BX only, and 5.7% three or more during that time frame. The highest number of repeat biopsies underwent was 11.

Conclusion: Following a negative TRUS-BX, the median time to a repeat TRUS-BX was 1.8 years, the vast majority of which were within the initial ten years. Within ten years of a negative TRUS-BX, 38.5% of men had undergone at least one further TRUS-BX, with 15.3% of the total undergoing at least two further biopsies. These results will help inform health policy decision makers and allow urologists to educate their patients regarding their likelihood of undergoing further TRUS-BXs following a negative procedure.

Number of repeat prostate biopsies in men following a single negative TRUS-BX						
Number of repeat biopsies in patients at 5 years of follow-up (n=67,675)						
0	1	2	3	4	5+	%
46,709	12,942	6,405	1,039	527	127	
(72.2%)	(19.2%)	(9.5%)	(1.4%)	(0.8%)	(0.2%)	
Number of repeat biopsies in patients at 10 years of follow-up (n=33,076)						
0	1	2	3	4	5+	%
24,572	7,441	3,144	1,138	382	223	
(72.2%)	(22.5%)	(9.4%)	(3.4%)	(1.2%)	(0.7%)	
Number of repeat biopsies in patients at 15 years of follow-up (n=12,398)						
0	1	2	3	4	5+	%
7,381	3,725	1,349	499	135	182	
(58.9%)	(30.1%)	(10.8%)	(4.0%)	(1.1%)	(1.4%)	
Number of repeat biopsies in patients at 20 years of follow-up (n=2,865)						
0	1	2	3	4	5+	%
1,246	940	233	118	59	32	
(43.5%)	(32.8%)	(8.1%)	(4.1%)	(2.0%)	(1.1%)	

Poster #65

CRITICAL ANALYSIS ON THE ROLE AND SEVERITY OF BODY MASS INDEX ON COST FOR PATIENTS UNDERGOING ROBOT-ASSISTED RADICAL PROSTATECTOMY

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Wake Forest

Presented By: Marc Colaco, MD, MBA

Introduction: Obesity is a significant problem in the United States, affecting approximately 60 million people. The number affected is projected to meet 50% of the population in 2030. Currently, the geographic region with the highest incidence of obesity is the South Eastern United States. Our primary objective was to examine the effectiveness of robot-assisted laparoscopic radical prostatectomy in patients diagnosed with Class I, II, and III obesity to determine if it cost-equivalent among the different classes.

Methods: After Institutional Review Board approval, a retrospective review of all patients with BMI > 30 undergoing robotic radical prostatectomy for localized prostate cancer during a three-year period (January 1, 2014 to December 31, 2016) was performed. Patients were classified into specific cohorts based on the CDC Obesity classification: I, II or III, representing a BMI of 30 - 34.9, 35 - 39.9, and >, 40 respectively. We then compared perioperative variables, operative, non-operative and total surgical times, and cost between cohorts. Data regarding costs were derived from operating room time (defined institutionally as \$37 per minute), direct cost of materials, and total cost.

Results: A total of 88 subjects were identified for this study. Of these patients, 54 patients met criteria for CDC obesity class I, 29 met criteria for class II, and 5 met criteria for class III. Mean age of all patients at time of surgery was 61.4 years (SD \pm 7.2, range 41-74). Mean operative time was 191 minutes (SD \pm 37.6, range 133-309). There was a significant difference in total time across groups ($p=0.034$). When stratified by BMI classification, mean costs for operative time for Class I, II, and III were \$8,782.02, \$9,426.07, and \$10,500.60 respectively. Mean cost of materials for Class I, II, and III were \$3,107.53, \$3,025.35 and \$2,828.45. Mean total cost of Class I, II, and III was \$11,832.00, \$12,537.31, \$13,329.05. There was no significant difference in the cost of materials or the total costs.

Conclusion: With the exception of operative time, we found no differences among the varying classes of obesity, indicating that the robot, as a surgical tool, is effective in treating the obese patient, regardless of class.

Funding: N /a

Poster #66

ANALYZING PATIENT SPECIFIC FACTORS CONTRIBUTING TO EXTENDED PACU LENGTH OF STAY AND SUBSEQUENT COST: A QUALITY IMPROVEMENT INITIATIVE

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Presented By: Patrick Hensley, MD

Introduction: Extended PACU length of stay (PLOS) can frustrate patients and physicians, delay postoperative care pathways, and potentially increase cost. Predictors of increased PLOS are unknown. We examined patient-specific factors and cost in relation to PLOS.

Methods: The NSQIP (National Surgery Quality Improvement Program) database was queried for our institution to identify patients treated with open radical cystectomy (RC), robotic prostatectomy (RP), laparoscopic nephrectomy (LN), and minimally invasive partial nephrectomy (MIS PN) by CPT code. Perioperative data, PLOS, and finance data were analyzed.

Results: 787 cases were included. Median PLOS (MPLOS) was 5.0 hours (IQR 3.0-8.0, Table 1). Overnight PLOS (OPLOS) occurred in 132 pts (17.7%). Among preoperative variables, PLOS was longer in patients with preoperative dyspnea (p<0.01), creatinine >1.3, (p<0.01) or BUN >21, (p<0.05). Higher ASA class was associated with longer MPLOS, (p<0.01). MPLOS for patients undergoing RP and RC was slightly shorter than for renal cases (4 hrs vs 5 hrs, p<0.05). Increased PLOS was not associated with postoperative complications.

OPLOS was more expensive with a median total cost \$16,800 vs \$15,900 (p<0.05), and had higher median total hospital charges, \$58,300 vs \$51,800 (p=0.004). OPLOS carried more direct (\$11,200 vs \$10,500; p=0.049) and indirect costs, (\$5,400 vs \$5,100; p=0.016). Operating room and floor direct costs were higher in the OPLOS cohort compared to the non-OPLOS cohort, \$9,000 vs \$7,800 (p=0.015), and \$1,200 vs \$1,000 (p=0.02), respectively. There was no association between PLOS and overall hospital LOS (p=0.400).

Conclusion: ASA class, preoperative dyspnea, renal dysfunction, and surgery type were associated with increased PLOS. OPLOS significantly increases cost but is not associated with increased complication rate. Non-patient specific characteristics such as bed occupancy may come into play and should be further investigated to improve quality of care.

Characteristic	Median PLOS (hrs)	MPLOS (hrs)	OPLOS (%)	Median Total Cost (\$)	Median Hospital Charges (\$)
All Patients	5.0	5.0	17.7	\$15,900	\$51,800
Preoperative Dyspnea	5.5	5.5	18.5	\$16,500	\$52,500
Preoperative Creatinine >1.3	5.5	5.5	18.5	\$16,500	\$52,500
Preoperative BUN >21	5.5	5.5	18.5	\$16,500	\$52,500
ASA Class					
1	3.0	3.0	10.0	\$12,000	\$40,000
2	4.0	4.0	15.0	\$14,000	\$45,000
3	6.0	6.0	20.0	\$17,000	\$55,000
4	8.0	8.0	25.0	\$20,000	\$60,000
Surgery Type					
RP	4.0	4.0	12.0	\$13,000	\$42,000
RC	4.5	4.5	13.0	\$14,000	\$45,000
LN	5.0	5.0	18.0	\$15,000	\$48,000
MIS PN	5.5	5.5	19.0	\$16,000	\$50,000

Poster #67

IMPACT OF SURGEON AGE ON PREFERENCE FOR OPEN VERSUS LAPAROSCOPIC/ROBOTIC PARTIAL AND RADICAL NEPHRECTOMY

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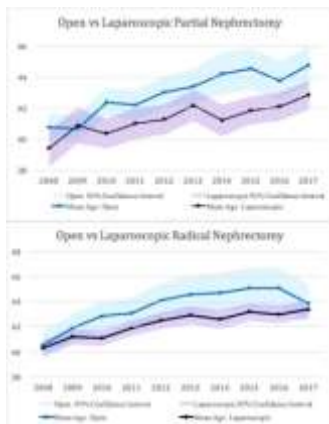
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Introduction: Urology has known aging workforce with 40% of urologists retiring over the next decade. As older urologists retire, newly trained urologists are more proficient in minimally invasive surgery. These changes have the potential to remodel future resident training and patient access to specific surgical approaches. We analyzed recent American Board of Urology recertification case logs to identify the presence of a statistically significant difference in surgeon age for open versus laparoscopic/robotic partial and radical nephrectomy as well as elaborate any potential trends over the last 10 years.

Methods: We extracted 5 CPT codes representing partial and radical nephrectomy and divided them into 4 groups to represent each approach. We analyzed the mean surgeon age of each surgery and approach annually over a 10-year period (2008-2017). Statistical significance was demonstrated by comparing 95% confidence intervals.

Results: There were a total of 33,375 cases performed. From 2008 to 2017, the percentage of all nephrectomies performed by the laparoscopic/robotic approach increased from 68.4% to 84.0%. Open nephrectomy trended towards older surgeons however only achieved statistical significance ($p < 0.05$) in partial nephrectomy from 2014 to 2015.

Conclusion: These findings suggest that while there may seem to be an apparent difference in mean age in terms of approach for this type of surgery, future resident training and patient access to both techniques may not be negatively affected by the aging urologist workforce. However, future research is required to continue studying these important trends and how they relate to the developing shortage of urologists.



Poster #68**PERI-OPERATIVE OUTCOMES AND DISCHARGE DESTINATIONS OF OCTOGENARIANS UNDERGOING RADICAL CYSTECTOMY: AN ANALYSIS OF THE NSQIP DATABASE**

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Presented By: Hayden Matthews Hill, MD

Introduction: Patients older than 80 years of age with muscle invasive bladder cancer (MIBC) are a challenging population to treat. As the general population continues to age, there will be increasing numbers of elderly patients who are diagnosed with MIBC and who will undergo a radical cystectomy (RC). Discharge destination for elderly patients has been shown to be predictive of 90-day mortality in this patient population. Thus, using a large administrative database, the objective of this study was to determine not only the peri-operative outcomes of patients undergoing RC but also the potential difference in discharge destination of octogenarians undergoing RC.

Methods: Using the National Surgical Quality Improvement Program database, we identified all patients with bladder cancer undergoing RC from 2011-2016. Patients were stratified by age into two cohorts <80 and ≥80 years old. Peri-operative outcomes and discharge destination between the two groups were compared.

Results: 5,639 patients underwent RC during the study period, 4995 (88.6%) patients <80 and 644 (11.4%) patients ≥80 years old. Of the entire cohort, most of the patients were male (82.5%) and Caucasian (93.7%). In comparing the two groups, patients older than 80 years were more likely to have a minor complication (41.8% v. 36.0%, $p=0.005$), have a longer length of stay (LOS) (9.7 days v. 8.9 days, $p=0.004$), and die within 30 days of surgery (3.3% v. 0.9%, $p<0.0001$). Comparative rates of discharge destination in patients <80 and ≥80 years old to home was 4398 patients (88.1%) vs 426 patients (66.2%) and to a skilled care facility or rehabilitation facility was 542 (10.9%) versus 193 (30.0%) (both $p<0.0001$).

Conclusion: Octogenarians undergoing RC were found to have significantly increased rates of adverse peri-operative outcomes as well as a significantly higher rate of discharge to a facility. This discharge rate to facility for octogenarians likely equates to further adverse outcomes, which may not always be well captured. This data will possibly help to risk stratify for surgery patients older than the age of 80 years with MIBC.

Poster #69**LOWER PREVALENCE OF METABOLIC COMORBIDITIES AMONG MEN WITH ERECTILE DYSFUNCTION FOLLOWING PROSTATE CANCER THERAPY**

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Presented By: Robert Craig Sineath, MPH

Introduction: Erectile dysfunction (ED) is the most common quality-of-life complaint after prostate cancer (CaP) treatment. Although various medical comorbidities have been identified as risk factors for ED, their distribution in men treated for CaP is unknown. This study compares medical risk factors associated with ED among men undergoing diagnosis and treatment of CaP.

Methods: This analysis utilized 2009-2015 commercial claims data to identify men with ED. Comorbidities associated with ED, including heart disease (HD), peripheral vascular disease (PVD), diabetes (DM), stroke, hypogonadism, obstructive sleep apnea (OSA), obesity, Peyronie's disease (PD), and chronic kidney disease (CKD) were identified utilizing ICD-9 codes. Patients were divided into comparison groups using ICD-9 and CPT codes: no history of CaP, CaP diagnosis without treatment, and CaP with treatment (prostatectomy, external beam radiation, brachytherapy, androgen deprivation therapy, immune therapy, and chemotherapy). Multivariable logistic regression compared comorbidities among groups stratified by age (35-64 and 65-80) using men without a CaP diagnosis as the reference category.

Results: Of 59,672 men with ED, 2757 had CaP without treatment and 9,911 had CaP treatment. Among younger men, DM, hypogonadism, and PD were less likely in those treated for CaP; stroke was more common in those without CaP treatment. Similarly, older patients with CaP treatment were less likely to have DM, hypogonadism, and obesity, and more likely to

have PD. Those without treatment were more likely to have heart disease and stroke. Odds ratios for this analysis are reported in Table 1.

Conclusion: Men who develop ED after CaP treatment are overall healthier than men with ED without CaP treatment, and men with ED in the general population. Treating ED in men with CaP treatment should be tailored accordingly, with a focus on preservation of erectile tissue, and recovery and restoration of sexual function in the post-treatment period.

Table 1. Multivariable Analysis of Factors Associated with ED among Groups of Prostate Cancer: No CaP, CaP without Treatment, and CaP with Treatment						
	Age 35-64 (N=46,561)			Age 65-80 (N=15,112)		
	No CaP	CaP without treatment	CaP with treatment	No CaP	CaP without treatment	CaP with treatment
Heart Disease	Ref	0.64 (0.50-1.17)	0.50 (0.75-1.07)	Ref	2.19 (2.06-2.33)	0.97 (0.80-1.18)
Peripheral Vascular Disease	Ref	1.17 (0.81-1.69)	0.58 (0.88-1.18)	Ref	1.31 (0.91-1.84)	1.00 (0.69-1.17)
Stroke	Ref	1.12 (0.84-1.47)	0.87 (0.80-0.94)	Ref	0.99 (0.71-1.17)	0.76 (0.59-0.91)
Diabetes	Ref	1.58 (1.12-2.13)	0.68 (0.86-1.05)	Ref	1.67 (1.31-2.12)	0.90 (0.79-1.01)
Hypertension	Ref	1.09 (0.75-1.64)	0.62 (0.54-0.70)	Ref	1.18 (0.94-1.47)	0.81 (0.74-0.89)
Obstructive Sleep Apnea	Ref	1.40 (0.98-2.02)	0.95 (0.83-1.07)	Ref	1.11 (0.86-1.42)	0.84 (0.66-1.01)
Obesity	Ref	1.02 (0.81-1.28)	0.67 (0.75-1.00)	Ref	1.10 (0.84-1.40)	0.86 (0.68-1.06)
Peptic Ulcers	Ref	1.72 (0.87-3.40)	0.75 (0.50-0.97)	Ref	1.09 (0.82-1.73)	1.07 (0.79-1.44)
Chronic Kidney Disease	Ref	1.05 (0.64-1.74)	0.66 (0.58-1.11)	Ref	1.34 (0.90-1.98)	0.87 (0.60-1.18)

Poster #70
INCREASED OPERATIVE DURATION IN MINIMALLY INVASIVE PARTIAL NEPHRECTOMY IS ASSOCIATED WITH SIGNIFICANTLY INCREASED RISK OF MORBIDITY, AN ANALYSIS OF 12,018 PATIENTS

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Presented By: Andrew Mitchell Harris, MD

Introduction: Longer operative duration (OD) has been shown to be a risk factor for negative outcomes in multiple surgical procedures. We seek to examine the effect of OD on morbidity in Minimally Invasive Partial Nephrectomy (MIPN).

Methods: The American College of Surgeons National Surgical Quality Improvement Program database was queried by CPT code from 2011-2016. Univariable and multivariable analysis was performed to determine risk factors for complications.

Results: 12,018 patients were examined. OD was divided into terciles, <155 minutes, 155-208 minutes, and over 208 minutes. Mean age was 59 years. Median BMI increased in each tercile, 29.0, kg/m², 29.7 kg/m², and 30.7 kg/m², respectively. Patients with increased OD were also more likely to have diabetes, be on medication for hypertension (HTN), and have higher ASA class. Female gender was significantly lower by increasing tercile. Longer OD was associated with increased morbidity. 5.0% of patients with OD <155 minutes experienced a morbidity, 7.3% in tercile 2, and 11.6% in the longest tercile. Patients in the longest tercile had significantly higher rates of pulmonary embolism or DVT, renal insufficiency, postoperative transfusion, sepsis, and surgical site infection compared to other terciles, Table 1. Unadjusted odds ratios (OR) of morbidity by OD were 1.0, 1.5, and 2.5 by increasing tercile. Adjusted OR were 1.0, 1.5, and 2.4 by increasing tercile. Other predictors of morbidity on multivariable analysis included DM (OR 1.2), HTN meds (OR 1.3), elevated creatinine (OR 1.2), ASA class III (OR 1.6), and ASA class IV-V (OR 2.0).

Conclusion: This study reveals multiple significant risk factors for morbidity in MIPN. Sicker patients are more likely to have complications. However, OD is an independent predictor of morbidity, even when adjusting for patient specific preoperative factors. Patients in the longest tercile were more than twice as likely to have complications. Further study on ideal operative duration, such as nomograms, and ways to increase OR efficiency is needed. Increased OD decreases value on multiple levels.

	Overall	<155 min	155-208 min	>208 min	P-value
All Patients, N	12018	3913	4017	4088	
Rate of the following complications, N (%)	609 (5.0)	198 (5.0)	292 (7.3)	471 (11.6)	<0.0001
Morbidity, N (%)	61 (0.5)	19 (0.5)	31 (0.8)	61 (1.5)	0.0001
Any ASA, N (%)	127 (1.1)	33 (0.8)	45 (1.1)	64 (1.6)	0.0001
Weight (kg), N (%)	118 (1.0)	37 (0.9)	37 (0.9)	61 (1.5)	0.0001
Height (cm), N (%)	100 (0.8)	33 (0.8)	33 (0.8)	61 (1.5)	0.0001
Weight (kg/m ²), N (%)	600 (5.0)	19 (0.5)	31 (0.8)	61 (1.5)	0.0001
Height (cm), N (%)	118 (1.0)	37 (0.9)	37 (0.9)	61 (1.5)	0.0001
Weight (kg/m ²), N (%)	100 (0.8)	33 (0.8)	33 (0.8)	61 (1.5)	0.0001
Unadjusted odds ratio, OR (95% CI)	1.0	1.5	2.5		
Adjusted odds ratio, OR (95% CI)	1.0	1.5	2.4		
Diabetes, N (%)	73 (0.6)	21 (0.5)	21 (0.5)	31 (0.8)	0.0001
HTN, N (%)	69 (0.6)	21 (0.5)	21 (0.5)	31 (0.8)	0.0001
Renal insufficiency, N (%)	91 (0.8)	21 (0.5)	21 (0.5)	31 (0.8)	0.0001
Chronic Kidney Disease, N (%)	73 (0.6)	21 (0.5)	21 (0.5)	31 (0.8)	0.0001

Table 1. Patient outcomes stratified by operative duration, N = 12,018

Poster #71

DEFINING THE ROLE OF ANDROGEN RECEPTOR SIGNALING IN BLADDER CANCER

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Presented By: Samarpit Rai, MD

Introduction: The aim of this study was to delineate the currently unknown role of androgen receptor (AR) signaling in bladder cancer (BCa) and to determine whether the combination of AR inhibitors, enzalutamide (Enz) and cisplatin (Cis) effectively inhibits the growth of muscle invasive bladder cancer (MIBC) cells.

Methods: AR expression was determined in 100 human BCa specimens and in a panel of BCa cell lines by immunohistochemistry. Cells grown in charcoal stripped media supplemented with dihydrotestosterone (DHT) were treated with Cis, Enz, or a combination of both (Enz + Cis). Western blotting and real time PCR (RT-PCR) were performed to determine expression of apoptotic and DNA damage markers. Isobologram analysis for the combination was performed and analyzed with CompuSyn. Experiments were and analyzed with unpaired Student's t-test and one-way ANOVA.

Results: AR expression was detected in 40% of tumors from BCa patients. Inhibition of AR signaling by Enz effectively inhibited the growth of AR+ MIBC cells (TCCSUP cell line IC50: 4.5 μ M and J82 cell line IC50: 6.6 μ M; $p = 0.0001$). Enz induced 28% apoptosis in TCCSUP ($p = 0.0201$) and 15% in J82 ($p = 0.0386$), respectively. Interestingly, Enz + Cis synergistically inhibited the proliferation of MIBC cells even at low concentrations. Combination Index value of 0.35 was obtained with 5 μ M of Cis and 1.25 μ M of Enz in TCCSUP cells. Combination index of 0.79 was seen with 5 μ M of Cis and 2.5 μ M of Enz in J82 cells. Enz + Cis treatment enhanced expression of DNA damage markers (pATM, pATR, pChk1, pHis) and pro-apoptotic genes (Bax, caspases-3 and PARP) in AR+ MIBC cells. Additionally, we demonstrated abrogation of invasive and migratory potential of TCCSUP with Enz + Cis (44% inhibition at combination index dosage, $p = 0.0005$), associated with down-regulation of mesenchymal markers (N-cadherin, slug, β -catenin, and vimentin).

Conclusion: Almost half of human BCa cells in our cohort were AR+. Inhibition of AR results in growth inhibition and induction of apoptosis in AR+ BCa cells. Our study suggests that a combination of Enz + Cis may be effective in treating patients with AR+ MIBC.

Poster #72

PD-L1 EXPRESSION IN NON-MUSCLE-INVASIVE BLADDER CANCER, IS THERE A PROGNOSTIC ROLE?

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Presented By: Maria F. Becerra, MD

Introduction: PD-L1 is a cell surface glycoprotein that can impair T-cell function. In urothelial carcinoma of the bladder (UC) it has been shown that PD-L1 facilitates localized stage-advancement of UC and may attenuate response to BCG immunotherapy by neutralizing T-cells. We aim to evaluate PD-L1 expression pre- and post- BCG therapy as a predictor of recurrence and progression in non-muscle-invasive bladder cancer (NMIBC).

Methods: Retrospective cohort of patients from our institution with NMIBC (2001 to 2017) and available pre- and post- BCG therapy formalin-fixed paraffin-embedded tissues (FFPE) samples. PD-L1 protein expression was assessed by immunohistochemistry (IHC) in all pre-BCG therapy specimens and in the post-BCG therapy specimens of patients whose pre-BCG therapy biopsy material had demonstrated PD-L1 expression. Descriptive summary statistics to correlate clinicopathological variables with PD-L1 status. Hazard ratios (HRs) for PD-L1 status were calculated using univariable Cox regression analysis for recurrence and progression. Fisher's exact binomial test was used for comparison of categorical variables. All tests were two-sided and $p < 0.05$ was used as criteria for statistical significance.

Results: A total of 49 patients, with sufficient pre- and post- BCG tissue samples, were

identified. Of these, 30 (61.2%) were high risk and 19 (38.8%) were part of the low or intermediate risk group. While 7 (14.2%) of the pre-BCG specimens demonstrated some degree of PD-L1 expression by IHC (one showed expression in 10-50% of tumor cells, the remaining ranged from 1-10% of tumor cells), none of the corresponding post-BCG specimens analyzed showed PD-L1 expression. We did not identify significant differences for PD-L1 expression when considering age, gender, race, ethnicity, smoking status, stage, grade or AUA risk group. HRs of PD-L1 expression for progression (HR=1.9; 95%CI=0.52 to 6.9, p=0.328) and recurrence (HR=1.3; 95%CI=0.56 to 3.2, p=0.514) did not reach statistical significance. Median follow-up was 2.13 years (95%CI=1.73 to 3.38), there was no significant association with progression or recurrence.

Conclusion: PDL1 expression is low in NMIBC and does not correlate with clinicopathological features or treatment outcome. Larger sample sizes may be needed to detect whether PDL1 expression is present in NMIBC.

Poster #73

SOX4 REGULATES INVASION OF BLADDER CANCER CELLS VIA REPRESSION OF WNT5A

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Presented By: Carlos Sanchez Moreno, PhD

Introduction: SOX4 is a developmental transcription factor that is overexpressed in as many as 23% of bladder cancer patients, but the role of SOX4 in bladder cancer tumorigenesis is not well understood. Given SOX4's many roles in embryonic development and context-dependent regulation of gene expression, we sought to understand SOX4's contribution to bladder cancer and to elucidate SOX4 regulated genes that might contribute to tumorigenesis.

Methods: We employed a CRISPR interference (CRISPRi) method to transcriptionally repress SOX4 expression in T24 bladder cancer cell lines, rescued these cell lines with lentivirally expressed SOX4, and performed whole genome expression profiling.

Results: SOX4 knockdown cells exhibited decreased invasive capabilities but no changes in migration or proliferation, while rescue with SOX4 lentiviral vector restored the invasive phenotype. Gene expression profiling revealed 173 high confidence SOX4 regulated genes, including Wnt5a as a potential target of repression by SOX4. Treatment of T24-SOX4-KD cells with a Wnt5a antagonist restored the invasive phenotype seen in T24-scrambled control cells and SOX4 lentiviral rescued cells.

Conclusion: High Wnt5a expression tracked with decreased invasion and was inversely correlated with SOX4 expression, suggesting that SOX4 could negatively regulate Wnt5a levels either directly or indirectly and that Wnt5a likely contributes a protective role against invasion in bladder cancer cells.

Funding: This research was funded by NIH grant number U01 CA217875-01.

Poster #74

THE PIONEER TRANSCRIPTION FACTOR FOXA2 REGULATES INTEGRIN ALPHA 1 EXPRESSION FACILITATING PROSTATE CANCER BONE COLONIZATION

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Presented By: Zachary Connelly, BS

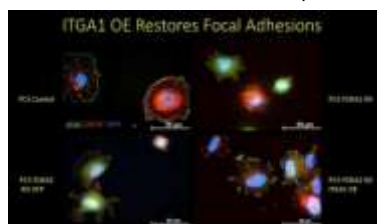
Introduction: Approximately 30,000 men will die from prostate cancer (PCa) in 2018. When localized and detected early, it has a low rate of progression and metastasis, with successful treatment. However, some patients may progress to a more lethal castrate-resistant PCa. While this occurs, frequent bone metastases will arise, and patient prognosis typically falls to 3-5 years due to lack of therapy available. The purpose of this study was to unveil the mechanisms of PCa bone colonization, allowing us to identify novel targeted therapies to prevent and treat PCa.

Methods: Gene expression profiling studies revealed a subset of metastatic PCa samples express the pioneer forkhead transcription factor, FOXA2. Consistently, we found FOXA2 abundance in a sample set of human PCa bone metastases, which may suggest a functional role for FOXA2. Protein analysis of common PCa cell lines revealed high levels of FOXA2 in aggressive bone metastatic PCa PC3 cells. To understand the role of FOXA2 in PCa metastasis, FOXA2 was stably knocked down in PC3 cells.

Results: PC3 cells with FOXA2 knocked down (FOXA2-KD) failed to generate *in vivo* bone destruction following intra-tibial injection contradictory to their parental cell line. To elucidate how FOXA2 is orchestrating these changes, we assessed the expression of all integrins and observed that loss of FOXA2 decreased mRNA and protein expression of the collagen-I binding integrin $\alpha 1$. Furthermore, we found FOXA2-KD decreased PC3 cells' adhesion, spreading, and downstream Integrin $\alpha 1$ signaling cascades on collagen-I (a major component of bone ECM) coated surfaces. Additionally, a neutralizing antibody to integrin $\alpha 1$ was administered to PC3 Control cells, prompting the same adhesion pattern, solidifying that this integrin is critical to collagen-I adherence. Through ChIP analysis, we learned that FOXA2 directly regulates the ITGA1 gene promoter. Lastly, we overexpressed integrin $\alpha 1$ in PC3 FOXA2-KD cells and rescued the adherence properties (Figure Attached). Additionally, we believed that FOXA2 could regulate the bone microenvironment due to the absence of bone pitting when FOXA2 is lost.

Conclusion: Taken together, the FOXA2-controlled expression of integrin $\alpha 1$ resulted in changes to adherence, spreading, and integrin signaling, providing a mechanism for how PCa cells colonize the bones.

Funding: This research is supported by DOD grant (W81XWH-12-1-0212), NIH grants (R03 CA212567 and R01 CA226285), LSUHSC startups (FWCC and Office of Research) to XY, and Carroll Feist Pre-doctoral Fellowship to ZC.



Poster #75

TRANSCRIPTOME-WIDE COMPARISON OF PROSTATE TUMORS AND POST-DRE URINE EXTRACELLULAR VESICLES

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Presented By: Martin George Sanda, MD

Introduction: The relatively high rate of negative prostate biopsy demonstrates the need for additional non-invasive biomarkers to improve the diagnosis and classification of prostate cancers prior to biopsy. While transcriptome-wide analysis of prostate tumor tissues has been used to expand our understanding of tumor biology and has supported the development of various commercially available gene expression assays for prostate cancer prognosis, the unbiased transcriptome-wide analysis of urine has not previously been reported. We have established that post-DRE extracellular vesicles (EVs) are enriched for prostate-specific RNAs, making them an ideal target for prostate cancer biomarker discovery and our current study is focused on the feasibility and utility of transcriptome-wide analysis of these specimens for biomarker discovery in the pre-biopsy setting.

Methods: We prepared cDNA from total RNA isolated from post-DRE urine EVs (collected prior to surgery) and matched FFPE prostatectomy tissue punches (collected following surgery) from 15 prostate cancer patients presenting at Emory Urology Clinics. Transcriptome-wide analysis was conducted using Affymetrix GeneChip Human Exon 1.0 ST Arrays and the data was SCAN normalized prior to analysis.

Results: A SCAN-normalized threshold of 0.2 was set as the minimum signal required for a gene to be classed as present. We detected 6664 transcripts in all 15 prostatectomy specimens, and 6249 transcripts in all 15 post-DRE urine EV specimens. Comparison of gene expression between the two sample types identified 3898 genes that were detectable in both the prostate tumor tissue and post-DRE urine EV specimens for all 15 patients (Figure 1). Genes that are components of currently available tissue-based prognostic signatures were not consistently detected in the post-DRE urine specimens, affecting the utility of these scoring methods in this specimen type.

Conclusion: There was a high degree of overlap between genes detected in post-DRE urine and prostate tumor tissue, with just under 4000 genes being identified as potential targets for the development of a non-invasive prostate cancer biomarker. However, the inconsistent detection of genes that have previously been identified as tissue-based biomarkers demonstrates the importance of expanding our transcriptome-wide analysis of prostate cancer into post-DRE urine RNAs as a strategy to offer new opportunities for non-invasive detection and diagnosis of prostate cancer.

Funding: NCI EDRN U01-CA113913

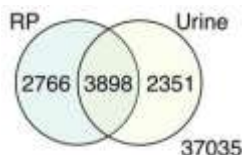


Figure 1. Genes detected on microarray for all 15 patients.

Poster #76

EXTRACELLULAR VESICLES FROM PC3 CELLS INDUCE AN IMMUNOSUPPRESSIVE PHENOTYPE IN HUMAN MACROPHAGES

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Presented By: Martin George Sanda, MD

Introduction: Extracellular vesicles (EVs) contain RNA and protein from their cell of origin, and function to mediate cell-cell signaling and communication. Tumor-derived EVs are proposed to mediate the formation of pre-metastatic niches, as shown in mouse breast, melanoma, pancreatic, and ovarian tumor models, although different target cells and molecular mechanisms have been described for each tumor type. While the effect of prostate cancer-derived EVs on other prostate cancer cells has been investigated, their effect on other cell types is less well-studied. We hypothesize that the direct uptake of prostate cancer-derived EVs by macrophages can induce M2 polarization, and potentially inhibit antigen processing and immune recognition of prostate tumors.

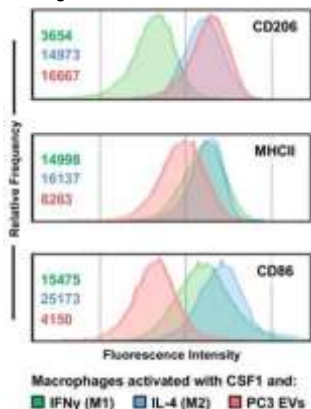
Methods: Human monocyte-derived macrophages were treated with EVs prepared from cultures of PC3 cells and assessed by FACS for the expression of CD206 to determine polarization state, and expression of MHCII and CD86 to determine activation state. This was compared to IFN γ -stimulated macrophages to represent M1-polarization and IL-4-stimulated macrophages to represent M2-polarization.

Results: Analysis of the positive control groups demonstrated a significant downregulation of CD206 in the IFN γ -treated macrophages, and a significant increase in CD206 expression for macrophages treated with IL-4. Expression of the M2 surface marker CD206 was also significantly increased in macrophages treated with PC3 EVs, demonstrating an EV-induced polarization towards an M2 phenotype. However, in contrast to the M1 and M2 controls, the

PC3 EV-treated macrophages also demonstrated a substantial downregulation of the antigen presentation and costimulatory molecules, MHCII and CD86 indicating that these macrophages may also be less effective at inducing or supporting the anti-tumor immune response to prostate cancer cells (Figure 1).

Conclusion: Our analysis suggests that prostate cancer-derived EVs are capable of inducing a tumor suppressive phenotype in macrophages, and that this function may contribute to the resistance of prostate cancer to immunotherapy. Better insight into how tumor-derived EVs and macrophages interact could reveal novel strategies to enhance the effectiveness of prostate cancer immunotherapy.

Funding: NCI EDRN U01-CA113913



Poster #77

THE LANDSCAPE OF CADMIUM INDUCED PROSTATE CARCINOGENESIS

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Presented By: Kristy Nguyen, MD

Introduction: Cadmium is a known human carcinogen; studies have shown that chronic exposure to cadmium causes autophagy deficiency that results in the transformation of normal prostate epithelial cells. Several large-scale epidemiological studies have shown that Benign Prostatic Hyperplasia (BPH) patients have an increased risk (1.7- to 3-fold) for prostate cancer (CaP). The goal of the study is to determine whether occupational exposure to cadmium is one of the risk factors for BPH to develop into CaP and, if so, to dissect the molecular signaling that governs cadmium-induced prostate carcinogenesis.

Methods: Normal prostate epithelial cells (RWPE-1) and BPH cells were exposed to cadmium (10 μ M) for approximately 12 months. Characteristics of the malignant transformed cells were determined by cell viability, apoptosis, Western blot, and xenograft analyses. Immunohistochemistry analysis was performed in transformed tumors, BPH, and prostate tumors. Cadmium levels were measured in both blood and prostate tumor specimens.

Results: Cadmium exposure in both RWPE-1 and BPH cells induced transformation and formed tumors in nude mice; however, transformed BPH cells formed tumors as early as 6 months in comparison to transformed RWPE-1 cells (12th month). To decipher the molecular signaling responsible for BPH transformation, our global RNA-sequential analysis suggests that cadmium induced the expression of ZIC2, a zinc finger transcription factor, only in BPH cells and not in RWPE-1 cells. ZIC2-positive, cadmium-transformed cells form organoids in anchorage-independent growths and are responsible for the proliferation of transformed BPH cells. Knocking down ZIC2 expression inhibits organoid formation and the proliferation of the transformed cells. Conversely, overexpression of ZIC2 in RWPE-1 cells leads to organoid formation, suggesting that ZIC2 has an oncogene function. To investigate ZIC2's clinical significance, we studied ZIC2 expression in human prostate tumor specimens. Increase in

ZIC2 expression corresponded to different grades of CaP and BPH, as compared to adjacent healthy prostate tissues. The cadmium levels are much higher in the blood (16.41 ng/ml) and prostate tissue (21.43 mg/g) of CaP patients than in controls (0.5-2ng/ml and 1.12 mg/g, respectively).

Conclusion: These results suggest that cadmium is a risk factor to develop CaP and activation of ZIC2 is responsible for cadmium-induced transformation and promotes prostate carcinogenesis.

Poster #78

BIOENGINEERED STIMULATED-CANCER CELL MEMBRANE COATED NANOPARTICLES FOR ENHANCED DELIVERY TO THE BONE

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UNT Health Science Center

Presented By: Jamboor K. Vishwanatha, PhD

Introduction: New therapeutic designs are crucial for improved quality of life and better treatment outcomes for metastatic cancer patients. Targeting therapeutic agents to specific organs in the body remains a challenge despite advances in the science of systemic drug delivery. We have engineered a Cabazitaxel encapsulated PLGA nanoparticle.

Method: The targeting was carried out by a unique method wherein the stimulated cancer cell-membrane was coated onto the nanoparticle (SCCNP), thereby using the cancer cells own homing mechanism to our advantage in delivering the drug to the cancer cells metastasized to the bone microenvironment. We have engineered a delivery system to simultaneously target the bone and increase uptake in homotypic tumor cells by coating polymeric nanoparticles with stimulated cancer cell membranes. This approach is unique in that we have incorporated relevant clinical bioinformatics data to guide the design and enhancement of biological processes that these nanoparticles are engineered to mimic.

Results: To achieve this, an analysis of RNA expression from metastatic prostate cancer patients identified ITGB3 (a subunit of integrin $\alpha V\beta 3$) as overexpressed in patients with bone metastasis. Cancer cells were stimulated to increase this integrin expression on the cell surface and these membranes were subsequently used to coat cargo carrying polymeric nanoparticles. Physicochemical optimization and characterization of the SCCNP showed desirable qualities regarding size, zeta potential, and stability. In vitro testing confirmed enhanced homotypic binding and uptake in cancer cells. SCCNP also demonstrated improved bone localization in vivo with a murine model.

Conclusion: This novel approach of identifying clinically relevant targets for dual homotypic and bone targeting has potential as a strategy for treatment and imaging modalities in diseases that affect the bone as well as broader implications for delivering nanoparticles to other organs of interest.

Funding: Research reported in this publication was supported by the National Cancer Institute of the National Institutes of Health under Award Number R21CA194295

Poster #79

EXPLORING THERMODYNAMIC THEORIES OF KIDNEY STONE COMPOUNDS TO OPTIMIZE CALCIUM OXALATE STONE DISSOLUTION AND CRYSTALLIZATION

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Presented By: Noa Grooms, BS

Introduction: Prevalence of kidney stones is increasing throughout the world. Laser lithotripsy via ureteroscopy is performed to break up the stones into 0.5 mm, which may remain behind. This "dust" may become a nidus for crystal deposition and lead to recurrence of kidney stones. Our aim is to explore thermodynamic theories to aid in determination of ideal conditions for crystallization and dissolution of calcium oxalate kidney stone fragments.

Methods: Based on the study by Thongboonkerd et. al, dissolution agent and chelator will be the solution of interest. We use the Gibbs equation ($\Delta G = \Delta H - T\Delta S$) to calculate and predict ideal conditions for stone dissolution. Calcium oxalate monohydrate (COM) crystals were formed by combining salts containing both calcium and oxalate in accordance with the chemical equation: $\text{Ca}^{2+} + \text{C}_2\text{O}_4^{2-} \rightarrow \text{CaC}_2\text{O}_4$. Dissolution agent sodium citrate and EDTA

chelator are optimal compounds for calcium oxalate dissolution. For creation of a stone crystal model, Osteopontin(OPN) at physiologic pH, protein matrix(lab-made Human-Placental-Matrix-HPM), and calcium oxalate were combined in artificial urine.

Results: The measured dissolution enthalpies of the various calcium oxalate hydrates were determined via calorimetric experiments observed. In water, COM requires 21.1 kJ/mol for dissolution, and the formation of sodium oxalate produces approximately 16.6 kJ, both at 25 C. Calcium-EDTA produces 50 kJ of energy in TRIS buffer at pH 7.5 which provides the required energy for breaking COM and hydrogen bonds. The isoelectric point of OPN is 4.7, thus at pH close to 6.5, free calcium ions will primarily bind OPN which will result in less COM crystallization observed under microscopy. Crystals were observed under fluorescent and light microscopy. HPM grown crystals promoted crystal growth over its matrix. With no OPN present, there is more crystal growth compared to the crystals grown in the presence of OPN which may indicate crystallization suppression activity by OPN.

Conclusion: Theoretically, ideal dissolution agent was found to be sodium citrate with EDTA on TRIS at physiologic pH, due to its favorable thermodynamic interactions. Osteopontin, will either enhance or inhibit stone formation depending on the pH related to its isoelectric point. Crystallization as expected occurred more readily at low pH for the agents used.

Poster #80

NAD⁺ INDUCES RELAXATION IN ISOLATED HUMAN CORPUS CAVERNOSUM

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Presented By: Laith Alzweri, MD

Introduction: Nicotinamide adenine dinucleotide (NAD⁺) is an essential small-molecule cofactor for NAD⁺-dependent enzymes, such as the sirtuins (SIRT), and important for metabolic redox-reactions. SIRT-stimulation by hydrogen sulfide (H₂S) reverses these redox changes, though SIRT and H₂S are part of the same pathway. NAD⁺ levels decline at the cellular and tissue/organ levels during aging and slow the rate of glycolysis, mitochondrial electron transport, and ATP formation in cells. The effects of NAD⁺ on human corpus cavernosum (HCC) from aged-men have not been described before. We aimed to characterize the effects of NAD⁺ on HCC smooth muscle tone in vitro.

Methods: HCC obtained from erectile dysfunction (ED) patients (n=10) undergoing penile prosthesis surgery were processed for organ bath. After precontraction with phenylephrine (Phe,10μM), concentration-response curves were performed for NAD⁺ (10nM-100μM). Underlying mechanisms of relaxation were evaluated by inhibitory agents, namely L-NAME [N(G)-nitro-L-arginine methyl ester, an inhibitor of NO synthase (NOS)], ODQ [1H-(1,2,4) oxadiazolo(4,3-α) quinoxalin-1-one, a soluble guanylyl cyclase inhibitor], and tetraethylammonium (TEA, non- selective K⁺ channel blocker). The relaxation responses to electrical field stimulation (EFS,10Hz), acetylcholine (ACh,100M), sodium hydrogen sulphur (NaHS,10-4M, a donor of H₂S), adenosine (Ado,10-4M) and contractile response to EFS (80Hz) were examined in the presence or absence of NAD⁺(10μM). Cellular localization and semi-quantification of eNOS, nNOS and VEGF expressions were performed by Western blotting and immunofluorescence.

Results: NAD⁺ reduced the maximal contractile response induced by Phe (46.16±9.9%). The NAD⁺-induced relaxations were not affected by other inhibitors. NAD⁺-induced relaxations were significantly lower (11.12±5.26%, p= 0.0270) in the older (75.6±1.2 years) group when compared with (40.68 ±6.85%) middle-aged (63.0±4.04 years) group. NAD⁺-evoked relaxations of HCC were augmented with NaHS and Ado incubations. Using different approaches including, Western blot analysis, confocal imaging and cell culture experiments for eNOS, nNOS, and VEGF, NAD⁺ could not significantly change impairment in samples.

Conclusion: NAD⁺ induced in vitro relaxation of HCC in middle- and elderly-aged men, with a decreased relaxant effect on tissues from elderly men. The relaxation in response to NAD⁺ is likely independent of changes in the activation of the NO-cGMP system. The decreased NAD⁺ biosynthesis and increased NAD⁺ consumption exacerbates the depletion of NAD⁺ and may contribute to age-associated ED.

Poster #81

BROMELAIN INDUCES IN VITRO RELAXATION OF HUMAN CORPUS CAVERNOSUM TISSUE VIA A NITRIC OXIDE-cGMP INDEPENDENT PATHWAY

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Presented By: Laith Alzweri, MD

Introduction: Bromelain (BRM) is a mixture of proteolytic enzymes found in several parts of the pineapple (*Ananas comosus*) plant. BRM is widely administered for its well-recognized properties, mainly anti-inflammatory, antithrombotic and fibrinolytic, anticancer, and immunomodulatory. BRM gained universal acceptance as a phytotherapeutic agent due to its extensive dietary usage and lack of side effects; however, the complete molecular mechanism of action of BRM has not been completely identified.

This study aims to evaluate the effectiveness of (a) pure BRM (from pineapple stem, Sigma-Aldrich, St Louis, MO), (b) BRM dietary supplement (BG, Natural Brand Bromelain 500mg tablet, GNC, Pittsburgh, PA) and (c) fresh pineapple juice (PAJ) on human corpus cavernosum (HCC).

Methods: HCC tissues were obtained from men undergoing penile prosthesis implantation ($n = 10$) and prepared for organ bath experiments as per our published procedures. BRM-induced relaxation response ($10\text{--}8\text{--}10\text{--}3\text{ M}$) was performed *in vitro* using HCC strips in an organ bath. The effects of inhibitors [NG-nitro-L-arginine methyl ester (L-NAME, $100\mu\text{M}$), 1H-[1,2,4]-oxadiazolole-[4,3-a] quinoxalin-10-one (ODQ, $30\mu\text{M}$), and tetraethylammonium (TEA, $100\mu\text{M}$, blocker Ca^{2+} - activated K^{+} channels)] on BRM-mediated relaxation responses were evaluated. The relaxation effects of BRM, BG, and PAJ on phenylephrine (Phe)-induced contraction were also compared. The protein expression of endothelial (e) and neuronal (n) nitric oxide synthase (NOS) markers and vascular endothelium growth factor (VEGF) were determined using Western blotting and immunohistochemistry.

Results: BRM inhibited Phe-evoked contractions in a dose-dependent manner. All agents induced relaxation of HCC (maximum response: BRM- $62.87 \pm 6.23\%$, BG - $61.95 \pm 4.17\%$, PAJ - $55.68 \pm 5.52\%$) after Phe-contraction. Inhibitors of nitric oxide (L-NAME) and soluble guanylate cyclase (ODQ), as well as TEA failed to affect the BRM-induced HCC relaxations. Furthermore, eNOS and nNOS protein levels were decreased and not restored after BRM, while VEGF levels remained unaltered.

Conclusion: BRM have the capacity to exert *in vitro* relaxation of HCC. The underlying mechanism of BRM is likely independent of the nitric oxide-cyclic guanosine monophosphate pathway. Overall, these *in vitro* studies suggested that BRM and its supplements may represent a potential novel agent to prevent and treat erectile dysfunction, especially when associated with inflammation secondary to diabetes and Peyronie's disease.

Poster #82

BIOPRINTED OVARY-ON-A-CHIP PLATFORM AS A MODEL OF OVARIAN PHYSIOLOGY AND DISEASE

Young Sik Choi, Il Dong Kim, Young Joon Seol, Myung Jae Jeon, John Jackson, James Yoo, Anthony Atala

Wake Forest School of Medicine

Presented By: John D. Jackson, PhD

Introduction: Organ-on-a-chip is a microengineered biomimetic system containing microfluidic channels and tissue-specific cell types, which replicate functional units of living organs to reconstitute integrated human organ-level pathophysiology *in vitro*. It provides a suitable microenvironment for recapitulating most *in vivo* functions compared to the traditional 2D culture system. The aim of this study was to develop an ovary-on-a-chip platform that could replicate ovarian endocrine function *in vitro*.

Methods: Theca cells and granulosa cells were isolated from ovaries of 10-week old rats. To enhance cell-to-cell interactions, ovarian cell organoids were induced using forced aggregation prior to printing. The ovary-on-a-chip platform was fabricated by 3D bioprinting technology. The bioprinted platform consisted of poly(ϵ -caprolactone) (PCL) for structural support of microfluidics and gelatin methacrylate (GelMa) hydrogel for cell carrier of ovarian cell aggregates. After printing, medium was continuously perfused at a flow rate of $4.7\mu\text{L}/\text{min}$ in the bioprinted microfluidics for 15 days. To demonstrate the hormone production from the

bioprinted ovary-on-a-chip, the levels of 17 β -estradiol and progesterone were measured by ELISA.

Results: The structure and viability of ovarian cell aggregates were maintained during the 3D microfluidic culture in the ovary-on-chips. Production of both 17 β -estradiol and progesterone was maintained in the ovary-on-chip platform for 15 days. Although both hormonal levels in the microfluidics were significantly lower than those in the 2D culture, they were physiologically more relevant to those in *in vivo* microenvironment.

Conclusion: This physiologically functional ovary-on-a-chip platform using 3-D bioprinting technology may provide a predictive model of human ovarian physiology and disease.

Funding: Jack and Pamela Egan

Poster #83

PROGRESSIVE MUSCLE CELL DELIVERY AS A SOLUTION FOR VOLUMETRIC MUSCLE DEFECT REPAIR

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Wake Forest School of Medicine

Presented By: John D. Jackson, PhD

Introduction: Reconstructing functional volumetric tissue *in vivo* remains a critical challenge facing cell-based approaches. Several pre-vascularization approaches have been developed to increase cell viability following implantation. While structural and functional tissue restoration was achieved in preclinical rodent tissue defect models, the approaches used in these model fail to repair larger defects in a clinical setting. We propose an effective cell delivery system utilizing appropriate vascularization at the site of cell implantation that results in volumetric and functional tissue reconstruction.

Methods: To demonstrate the feasibility of restoring functional volumetric tissues in the defect site, multiple, progressive delivery of cells was performed using ectopic cell transplantation in a subcutaneous site. Appropriate cell delivery parameters such as cell density, cell injection volume, and time interval between injections were tested. The efficiency of volumetric tissue formation was compared with single injection of the same number of cells that were used for multiple injections in ectopic and *in situ* volumetric muscle loss models. Histological and functional recovery was evaluated to determine the possibility for applications to treat critical-size muscle defects.

Results: Multiple-cell injections with one-week interval between each injection resulted in an increased volume of the implants. Increased number of cell injections (up to 8 injections) correlated with an increased implant volume. Particularly, 6-8 cell injections demonstrated a statically significant difference when compared with 2-4 cell injections. The volumes of implants in all multiple, progressive cell injected groups showed a significant increase compared to the progressive gel only-injected groups. Histologically, an increase in the volume of reconstructed tissue formation was notable between 2 and 4 cell injections, but no significant size difference was observed beyond 4 cell injections. In each group, the newly formed tissue structures were skeletal muscle fibers as confirmed within the implant.

Conclusion: Our method of multiple cell injections in a progressive manner yielded improved cell survival and formed volumetric muscle tissues in an ectopic muscle site. This strategy supported the reconstruction of functional skeletal muscle tissue in a rodent volumetric muscle loss injury model. Results from this study suggest that this method can be used to repair volumetric tissue defects by overcoming diffusion limitations and facilitating adequate vascularization.

Funding: Departmental funding and a grant from the Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology

Poster #84

IN VIVO EVALUATION OF FUNCTIONALIZED MUSCLE SCAFFOLDS FOR RECONSTRUCTION

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Wake Forest School of Medicine

Presented By: John D. Jackson, PhD

Introduction: It has been demonstrated that almost tissue in the body contains some type of stem or progenitor cells. These cells are believed to be part of an underlying regenerative machinery that is responsible for daily maintenance and repair of injured tissue. Therefore, there may be a potential opportunity to bias the host response towards repair and replacement of tissue defects. This may be achieved by maneuvering host stem and progenitor cells using target specific scaffolds. In this study, we aimed to regenerate muscle functionality following volumetric muscle loss through the use of a target-specific scaffolding system. The objectives of this study were to evaluate the functionalized decellularized tissue scaffolds on the host muscle cell migration and muscle function recovery *in vivo*.

Methods: Decellularized porcine scaffolds were implanted into a created defect site in the tibialis anterior muscle of rats. Three experimental groups were tested (along with two control groups); those with empty scaffolds, scaffolds seeded with muscle progenitor cells, and scaffolds injected with IGF-1 prior to implantation. To evaluate the effect of the scaffolds, a force transducer was utilized to measure isometric force produced by the tibialis anterior muscle at either 2 or 4 weeks post-implantation. To evaluate the cell infiltration of the scaffolds, the muscle and scaffold were removed and characterized by H&E and Masson's Trichrome.

Results: Functional testing showed an increase in muscle functionality in all groups by 4 weeks relative to the defect only group. Scaffolds seeded with primary muscle cells recovered 53% of functionality by week 4, a 21% increase over the defect only group. The retrieved implants showed progressive cell infiltration of the scaffolds over time. The IGF-1 and seeded progenitor cell scaffolds yielded the greatest cell count. Fiber-like orientation of infiltrated cells within the scaffold could be seen as early as week 2.

Conclusion: Our data suggest an ability of host stem cells to recruit into the scaffolds with the capability of differentiating to muscle cells, which resulted in accelerating muscle regeneration *in situ*. This study hopes to provide a platform for the development of tissue engineering and regenerative medicine in regards to volumetric muscle loss.

Funding: This study is funded by Musculoskeletal Transplant Foundation.

Poster #85

THE IMPLICATIONS OF INCREASING SQUAMOUS HISTOLOGY AT TIME OF TRANSURETHRAL RESECTION FOR BLADDER CANCER: RESULTS FROM A HIGH-VOLUME REFERRAL CENTER

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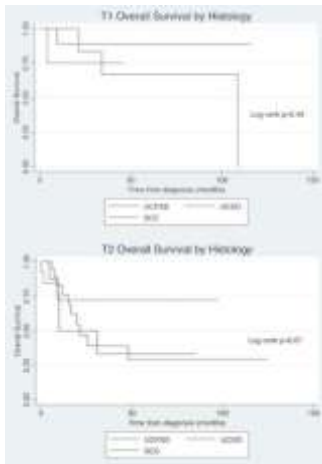
Presented By: Peter A. Reisz, MD

Introduction: There has been recent emphasis on variant histology in bladder cancer risk stratification. Prior studies suggest that pure squamous cell carcinoma (SCC) as well as urothelial carcinoma (UC) with squamous differentiation may have more aggressive biology, presenting with advanced disease and worse outcomes compared to pure UC. However, there is a paucity of high level evidence characterizing this histology, specifically in non-muscle invasive bladder cancer (NMIBC), as the majority of existing data is derived from cystectomy cohorts. We sought to examine the clinical implications of increasing squamous histology in TURBT specimens.

Methods: We reviewed a retrospective database of 3,312 TURBT specimens from 1,861 patients collected from January 2002 to January 2017 at a single high volume referral center. Of these, 72 patients demonstrated squamous histology and met our inclusion criteria. Clinical and pathological information was obtained from the electronic medical record. Survival curves by histologic subtype with increasing squamous differentiation (SCC, UC with squamous differentiation (UCSD), and UC with focal squamous differentiation (UCFSD)) and treatment type, stratified by pT1 and pT2 disease, were constructed using Kaplan-Meier (KM) methods and compared with use of logrank statistics.

Results: 73.6% of patients were male. Median age at diagnosis was 73. Median follow-up was 16.5 months. At the time of diagnostic TURBT, 48 (66.7%) patients demonstrated muscle-invasive disease (pT2) and 24 (33.3%) patients demonstrated pT1 disease. 43.8% of T2 patients had extravesical disease on staging imaging. 41 (56.9%) patients underwent radical cystectomy (RC) and 26 (36%) patients opted for bladder sparing (BS). Figure 1 demonstrates the overall KM survival curves by histologic subtype. These differences were not significant. KM survival by treatment type (RC vs BS) demonstrates a trend toward poorer survival in BS groups but this was not significant in either pT1 or pT2 subgroups (log-rank p-value = 0.49 and 0.402 respectively).

Conclusion: Increasing squamous differentiation in TURBT specimens at diagnosis did not portend significantly worse survival. However, examination of the survival curves demonstrates a trend towards poorer survival as squamous differentiation increases and in the bladder-sparing treatment groups. This data is unique in that it includes many T1 patients and is hypothesis-generating regarding squamous differentiation and risk stratification.



Poster #86

EXPERIENCE WITH DRAINLESS CYSTECTOMY WITH ILEAL CONDUIT URINARY DIVERSION

Katherine Cockerill, Max Hicks, Ryan Peacock, Paul Young

Mayo Clinic Jacksonville

Presented By: Katherine Cockerill, MD

Introduction: Previous common practice at our institution included placement of intraoperative Jackson Pratt (JP) drain during cystectomy with ileal conduit urinary diversion. JP drains can inhibit postoperative progression by limiting mobility and serving as a potential nidus for wound infections. The aim of our study is to determine the effect on postoperative readmission rate and adverse events when intraoperative JP drain placement is excluded during cystectomy with ileal conduit urinary diversion.

Methods: We performed a retrospective review of 107 consecutive patients who underwent cystectomy with ileal conduit urinary diversion from August 2015 to June 2018. JP drain placement was excluded from perioperative management. Thirty day readmission rates and postoperative adverse events were recorded, including drain placement by Interventional Radiology (IR).

Results: A total of 107 patients with a mean age of 72 years (range 45–87) underwent cystectomy with ileal conduit urinary diversion without intraoperative JP drain placement for malignant (85%) and non-malignant (15%) reasons from August 2015 to June 2018. A majority of patients (60.7%) had T2 or greater disease on final pathology. A total of 44 patients with cancer (48.3%) had preoperative chemotherapy and 23 patients overall (21.5%) had history of radiation treatment. Twenty six patients (24.3%) were readmitted within 30 days, with

fever as the most common complaint (10 patients). Postoperative 30 day adverse events (Clavien Grade 2 or higher) were denoted in 58 patients (54.2%), including those requiring readmission. A total of 5 (4.6%) patients required JP placement and/or drainage of fluid collection by interventional radiology within 30 days after surgery. Only one patient required JP drain placement for a urine leak. One patient required IR drainage of a fluid collection, but a drain was not placed. The remaining 3 patients had drains placed for abdominal abscess, ascites secondary to hepatic disease, and left thigh abscess. Only one patient required stent placement by Interventional Radiology within 30 days of the cystectomy.

Conclusion: Cystectomy with ileal conduit urinary diversion can be safely performed without intraoperative JP drain placement with similar complication rates to those reported in the literature following standard protocols.

Poster #87

REOPERATION WITHIN 30 DAYS OF RADICAL CYSTECTOMY: IDENTIFYING HIGH-RISK PATIENTS USING THE AMERICAN COLLEGE OF SURGEONS NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

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Presented By: Rashid Sayyid, MD, MSc

Introduction: Radical cystectomy (RC) remains the gold-standard treatment for muscle-invasive bladder cancer. This procedure, however, is highly morbid with 30-day peri-operative complication rates approaching 50% that may have significant medical and financial consequences. Identifying high-risk patients for such complications is thus essential. Our objective was to identify predictors of re-operation within 30 days of RC.

Methods: We identified 2608 patients who underwent RC for non-metastatic bladder cancer using the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database. Our primary outcome was re-operation within 30 days of RC. Study variables included patient demographics, medical comorbidities, and post-operative hospitalization events. Univariate (Chi-square and Fisher's exact tests), and multivariate regression analyses were used to evaluate predictors of re-operation.

Results: Median patient age was 69 years, 17.6% were female, and 79.5% received an ileal conduit. 152 patients (5.8%) were re-operated on within 30 days of their RC. On univariate analysis, race (10.9% of African-Americans vs. 5.1% of Caucasians and 4.0% of other races, $p=0.04$), history of chronic obstructive pulmonary disease (12.3% vs. 5.3%, $p<0.01$), and higher BMI (29.1 kg/m² for those with re-operation within 30 days vs. 27.8, $p=0.017$) were associated with higher re-operation rates. Notably, type of diversion (ileal conduit vs. continent) and history of chemotherapy or radiotherapy within 30 days prior to RC were not associated with higher 30-day reoperation rates. On multivariate analysis, increasing BMI (OR 1.04, 95% CI 1.01-1.07) and history of COPD (OR 2.2, 95% CI 1.3-3.5) remained significant predictors of reoperation. Patients who were reoperated on within this timeframe were more likely to die (4.0% vs. 1.6%, $p=0.03$), experience cardiac (7.2% vs. 1.9%, $p<0.01$), pulmonary (23.0% vs. 3.0%), neurologic (2.0 vs. 0.49%, $p=0.02$), and venous thromboembolic (10.5% vs. 5.4%, $p<0.01$) events, longer length of stay (16.5 days vs. 7.0, $p<0.01$), and infectious complications (64.5% vs. 24.1%, $p<0.01$) within this timeframe.

Conclusion: Increasing BMI, history of COPD and possibly African-American race are associated with higher reoperation rates within 30 days of RC, with substantial health and financial consequences. These results will help urologists identify pre-operatively patients at higher risk of such adverse events and allow physicians to adopt more aggressive approaches to minimize post-operative surgical complications.

Poster #88

EVALUATING POST-OPERATIVE OPIOID USE FOLLOWING RADICAL CYSTECTOMY

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Presented By: Kathryn E. Hacker Gessner, MD, PhD

Introduction: The incidence of new persistent opioid use following surgery is approximately 6-10%, more common than any single post-operative complication. Additionally, a recent systematic review found 67-92% of patients report unused opioid medications after a surgical prescription. Reducing the oversupply of opioids may substantially impact the opioid epidemic as a primary and secondary prevention strategy. We aimed to evaluate both inpatient and outpatient opioid requirements of patients following radical cystectomy and risk factors for increased opioid use.

Methods: Patients who underwent radical cystectomy at the University of North Carolina were identified and a retrospective analysis of inpatient opioid requirements post-operatively was performed. We evaluated the association of the amount of opioid use with demographic characteristics, pre-operative diagnoses, cancer characteristics, post-operative complications, and cancer recurrence. Additionally, we evaluated post-hospital discharge opioid use and obtained details regarding medications prescribed for postoperative pain through our pharmacy database. Two weeks post-procedure, patients were contacted to participate in a survey evaluating postoperative opioid use and disposal habits.

Results: Following radical cystectomy, inpatients utilize a wide range of morphine equivalent amounts despite use of multi-modal pain regimens. After discharge, 11 of the 28 patients who underwent a radical cystectomy during the 6 month study period were surveyed. These patients were prescribed an average of 34 tablets of 5 mg oxycodone and 80% filled this prescription. Patients reported an average of 11 tablets used following discharge and 55% reported having received counseling on proper disposal of narcotic medications.

Conclusion: Inpatient opioid use following radical cystectomy displays a wide range of opioid requirements which vary based on patient and surgical characteristics. However, following discharge, we identified that patients are receiving an oversupply of opioid medications. Multimodal pain control for inpatients and development of data-driven post-operative prescribing schedules will potentially allow urologists to decrease the opioid requirement following radical cystectomy.

Poster #89

30-DAY READMISSION CHARACTERISTICS, INTENSITY AND COST IN A DEDICATED ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM FOR RADICAL CYSTECTOMY PATIENTS

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Presented By: Blair Townsend, MD, MBA

Introduction: Our institution is the only U.S. Center of Excellence in the International ERAS Society. Since full adoption in January 2017, we have utilized a standardized ERAS protocol to structure pre-, intra- and postoperative clinical management of radical cystectomy patients. In our initial analysis we found no significant change in readmission rates after ERAS implementation. We now have focused our efforts on evaluation of readmission characteristics (type of complication by system), intensity (severity and LOS) and associated 30-day incremental costs.

Methods: From 1/1/2015-12/30/2016, readmission data was collected from 86 consecutive pre-ERAS patients ("pre-cohort"). From 1/1/2017-7/31/2018, readmission data was prospectively collected for 91 consecutive ERAS patients ("post-cohort"). Readmission data collected included type of complication by system (based on classifications defined in the ERAS Interactive Audit System (EIAS)), highest Clavien grade of complication, and LOS and incremental costs (excluding professional fees and fixed costs) associated with the first 30-day readmission. Fisher's exact tests were used to analyze categorical data and median two

Results: 30-day readmission rates were similar for pre- and post-cohorts, 17.4% and 19.8%, respectively (p=.705). Infection was the most common reason for readmission, comprising 8 of 15 (53.3%) in the pre-cohort and 7 of 18 (38.9%) in the post-cohort (p=.472). There were no renal or GI-related readmissions in the pre-cohort however there were 2 of 18 (11.1%) in post-cohort (p=.472). High grade complications, defined as Clavien grade 3 or higher, accounted for 9 of 15 (60%) readmission complications in the pre-cohort and 7 of 18 (38.9%) in the post-cohort (p=.303). Total median readmission cost between the pre- and post-cohorts were similar at \$3092 and \$3784, respectively (p=.355).

	Pre-2002 n = 10	Post-2002 n = 10	Overall n = 20
Age			
Mean	44.4	46.0	45.2
SD	10.1	10.7	10.4
Age range	22-72	27-70	22-72
Gender			
Male	10	10	20
Female	0	0	0
Marital status			
Married	10	10	20
Single	0	0	0
Divorced	0	0	0
Widowed	0	0	0
Education			
High school or less	0	0	0
Some college	0	0	0
College graduate	10	10	20
Postgraduate	0	0	0
Income			
Less than \$10,000	0	0	0
\$10,000-\$20,000	0	0	0
\$20,000-\$30,000	0	0	0
\$30,000-\$40,000	0	0	0
\$40,000-\$50,000	0	0	0
\$50,000-\$60,000	0	0	0
\$60,000-\$70,000	0	0	0
\$70,000-\$80,000	0	0	0
\$80,000-\$90,000	0	0	0
\$90,000-\$100,000	0	0	0
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\$110,000-\$120,000	0	0	0
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\$180,000-\$190,000	0	0	0
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\$730,000-\$740,000	0	0	0
\$740,000-\$750,000	0	0	0
\$750,000-\$760,000	0	0	0
\$760,000-\$770,000	0	0	0
\$770,000-\$780,000	0	0	0
\$780,000-\$790,000	0	0	0
\$			

ELEVATED JP DRAIN-TO-SERUM CREATININE RATIO PREDICTS FUTURE URETEROENETRIC LEAK AND GASTROINTESTINAL COMPLICATIONS FOLLOWING RADICAL CYSTECTOMY WITH URINARY DIVERSION

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Introduction: Elevated JP drain: serum Creatinine ratio (CrRatio) following a radical cystectomy with urinary diversion (RCUD) often suggests early, self-limiting conduit or ureteroenteric leak (UEL). Clinically significant postoperative urine leak is often described to have "markedly higher" Creatinine compared to serum with CrRatio>5-10. Although most early urine leaks are reabsorbed uneventfully, it is possible that they may predispose patients to ileus, metabolic abnormalities and delayed urinomas. We predict that an elevated CrRatio will predict postoperative complications at values lower than the classically described 5-10 range.

Results: 188 patients were included in the final analysis with 25 patients in group 1 and 163 in

group 2. There was no difference between the cohorts in preoperative characteristics including race, age, gender, surgical approach, diversion type, pathological staging, neoadjuvant chemotherapy or history of radiotherapy to the abdomen or pelvis. Tables 1 and 2 summarize the univariate and multivariate analysis of outcomes respectively. Importantly, elevated early CrRatio ≥ 1.15 is independently associated with increased GI-related readmissions and late presenting UEL.

Conclusion: An elevated CrRatio taken during initial hospital stay following RCUD predicts future complications but not the more temporally-related inpatient complications. Specifically, a CrRatio ≥ 1.15 predicts future GI-related readmissions and late UEL which is lower compared to the classically described 5-10. This suggests that CrRatio is a sensitive measurement which may influence time of ureteral stents and JP drain removal following RCUD.

Table 1. Univariate outcomes analysis

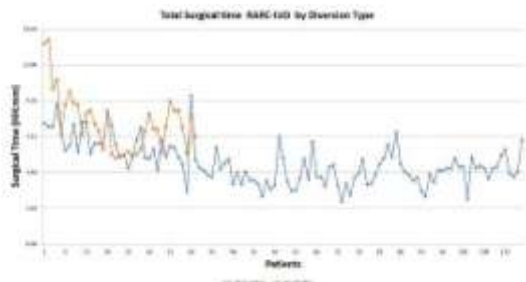
Characteristic	Overall (n = 188)	GI Read/Rescue readmission ratio		
		Ratio < 1.15 (n = 102)	Ratio > 1.15 (n = 86)	P-value
Gender				
Male (n [%])	9 (5.3%)	4 (3.9%)	5 (5.7%)	0.52
Female (n [%])	99 (52.6%)	49 (48.1%)	50 (58.3%)	0.009
Neoadjuvant chemotherapy (n [%])	98 (52.1%)	44 (43.1%)	54 (62.7%)	0.002
History of radiotherapy (n [%])	17 (9.0%)	7 (6.9%)	10 (11.6%)	0.099
Ureteral stent (n [%])	7 (3.7%)	3 (3.0%)	4 (4.6%)	0.807
Quadrant of residence (n [%])	12 (6.4%)	2 (2.0%)	10 (11.6%)	0.070
Definitive colectomy (n [%])	94 (50.0%)	49 (48.0%)	45 (52.1%)	0.786
Median follow-up months	9.0	10.1	7.7	0.032

Abbreviations: GI, Gastrointestinal; RCUD, Robot-Assisted Radical Cystectomy with Urinary Diversion.

Table 2. Multivariate Logistic Regression Analysis (n=188)

Characteristic	Late of UEL			GI Read/Rescue readmission ratio		
	OR	95% CI	P-value	OR	95% CI	P-value
GI Read/Rescue readmission ratio						
< 1.15 vs > 1.15	2.2	1.18-4.05	0.009	3.2	1.93-5.31	0.000
Pathologic stage						
T0-T1	0.49	0.12-0.80	0.009	0.19	0.04-1.14	0.040
T2-T4	0.49	0.04-0.80	0.003	0.19	0.04-1.14	0.040
T5-T7	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T8-T10	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T11-T14	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T15-T18	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T19-T22	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T23-T26	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T27-T30	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T31-T34	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T35-T38	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T39-T42	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T43-T46	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T47-T50	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T51-T54	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T55-T58	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T59-T62	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T63-T66	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T67-T70	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T71-T74	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T75-T78	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T79-T82	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T83-T86	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T87-T90	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T91-T94	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T95-T98	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T99-T102	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T103-T106	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T107-T110	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T111-T114	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T115-T118	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T119-T122	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T123-T126	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T127-T130	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T131-T134	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T135-T138	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T139-T142	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T143-T146	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T147-T150	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T151-T154	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T155-T158	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T159-T162	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T163-T166	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T167-T170	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T171-T174	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T175-T178	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T179-T182	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T183-T186	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T187-T190	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T191-T194	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T195-T198	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T199-T202	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T203-T206	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T207-T210	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T211-T214	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T215-T218	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T219-T222	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T223-T226	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T227-T230	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T231-T234	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T235-T238	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T239-T242	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T243-T246	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T247-T250	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T251-T254	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T255-T258	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T259-T262	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T263-T266	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T267-T270	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T271-T274	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T275-T278	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T279-T282	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T283-T286	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T287-T290	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T291-T294	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T295-T298	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T299-T302	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T303-T306	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T307-T310	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T311-T314	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T315-T318	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T319-T322	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T323-T326	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T327-T330	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T331-T334	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T335-T338	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T339-T342	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T343-T346	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T347-T350	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T351-T354	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T355-T358	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T359-T362	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T363-T366	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T367-T370	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T371-T374	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T375-T378	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T379-T382	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T383-T386	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T387-T390	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T391-T394	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T395-T398	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T399-T402	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T403-T406	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T407-T410	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T411-T414	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T415-T418	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T419-T422	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T423-T426	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T427-T430	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T431-T434	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T435-T438	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T439-T442	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T443-T446	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T447-T450	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T451-T454	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T455-T458	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T459-T462	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T463-T466	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T467-T470	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T471-T474	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T475-T478	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T479-T482	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T483-T486	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T487-T490	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T491-T494	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T495-T498	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T499-T502	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T503-T506	0.48	0.05-0.80	0.000	0.19	0.04-1.14	0.040
T507-T510	0.48	0.05-0.80	0.00			

Conclusion: There is a learning curve for RARC-IUD, and our data illustrated that perioperative outcomes are comparable to those of open surgeries. RARC-IUD is a safe and reasonable alternative to open cystectomy with the potential for decreased blood loss and quicker recovery. These benefits are more likely realized with complete RARC-IUD as opposed to RARC and opening for the urinary diversion. Further studies of complete RARC-IUD are needed to evaluate the possible benefits.



Poster #92

COMPARISON OF ROBOTIC ASSISTED DONOR RIGHT NEPHRECTOMY TO LAPAROSCOPIC LEFT NEPHRECTOMY IN PATIENTS UNDERGOING LIVING DONOR RENAL TRANSPLANT

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Presented By: John Samuel Fisher, MD

Introduction: The use of laparoscopic left nephrectomy has become the standard of care in living donation. The increased vessel length facilitates anastomosis for the transplant surgeon offering more anatomic flexibility. In some instances, the preoperative workup reveals difficult vascular anatomy or differing renal function between the two kidneys, which may encourage the consideration of a contralateral nephrectomy. This study investigates outcomes of robotic right nephrectomy versus laparoscopic left nephrectomy in postoperative donor patients.

Methods: This study reviewed retrospective data from transplant donor nephrectomy patients from May 2016 to July 2018. There were 13 laparoscopic left nephrectomy and 9 right robotic donor nephrectomy patients. The patient characteristics were recorded and both perioperative and postoperative factors included in the analysis.

Results: Our patient population was 70% female for left and 66% in right sided surgery with average BMI being 28.2 and 27.7 respectively. Total operative time was similar between the right and left (182.5 vs 183.3 minutes). Estimated blood loss of 51.2 cc in left versus 79.3 cc in right sided cases. Mean preoperative creatinine was 0.8 in both groups and post-operative creatinine was 1.1 for right and 1.2 on the left. All patients stayed in the hospital for 2.2 days after surgery; but 8/9 right sided patients met requirements for discharge on day 1 while 6/13 did on the left. The first 24-hour urine output was 2.16L for right and 2.1L for left nephrectomies. No vascular grafts or special vessel lengthening procedures were needed for either side and transplant allograft surgery times were similar.

Conclusion: The group of patients undergoing right-sided robotic assisted nephrectomy confirms the viability of this surgical approach in the patient with suboptimal left sided anatomy or renal function and serves as an alternative to open right donor nephrectomy.

Poster #93

RETROPERITONEAL APPROACH ROBOT ASSISTED PARTIAL NEPHRECTOMY: COMPARING OF TRIFECTA CRITERIA RATES IN MASSES

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Presented By: Jason Chiang, MD

Introduction: Objectives: To evaluate the safety and efficacy of robotic assisted partial nephrectomy on t1b renal masses with a retroperitoneal approach using a four-armed technique.

Materials: We retrospectively reviewed the medical records of 58 patients who underwent retroperitoneal approach RAPN between October 2014 and July 2018. Demographic, clinical, and peri-operative data were collected and analyzed. We utilized the trifecta criteria (warm ischemia time <25 minutes, no post-operative complications, and negative surgical margins). Outcomes were compared between patients with masses pathologically >4 cm and those ≤4 cm.

Results: 14 patients had masses >4 cm and 44 patients had masses ≤4 cm. Pre-operative patient characteristics (age, BMI, pre-op hemoglobin, pre-op GFR, and ASA score) were similar between the two groups. Mean nephrometry score by R.E.N.A.L. criteria was 6.4 vs 8.3 for >4cm masses vs ≤4 cm masses ($p < 0.01$). All patients had posteriorly located masses. Mean WIT was 20.2 vs 26.6 minutes ($p=0.07$). Mean EBL was 219 vs 311 ml ($p=0.30$). Overall complication rate was 14.3% vs 25.0% ($p=0.40$). Positive margin rate was 11.4% vs 7.14% ($p=0.65$). Positive margin rate declined each year as surgical experience improved. There were no recurrences. Rate of achievement of trifecta criteria was 64.3% vs 52.3% ($p=0.43$).

Conclusion: The rate of achievement of trifecta criteria was comparable between the two groups. Overall, the retroperitoneal approach RAPN is a feasible option for treatment of patients with larger renal masses.

Poster #94

FACTORS ASSOCIATED WITH PROLONGED LENGTH OF STAY FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY: CREATION OF THE BLOT SCORE

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Presented By: Ashley Shumate, MD

Introduction: Objective: To prospectively analyze the association of clinical and operative variables on patient length of hospital stay (LOS) following robotic-assisted partial nephrectomy (RAPN) and develop an accurate clinical-based scoring system to predict prolonged LOS following RAPN.

Methods: We analyzed 304 consecutive RAPNs performed by a single surgeon. Prolonged LOS was defined as greater than 3 days of hospitalization post-operatively. Pre-operative clinical factors and operative variables were analyzed for association with LOS. After adjusting for multiple testing, $p \leq 0.004$ was considered statistically significant.

Results: LOS was 1 day in 17 (5.6%) patients, 2 days in 136 (44.7%) patients, 3 days in 89 (29.3%) patients, and more than 3 days in 62 (20.4%) patients. Lower pre-operative hemoglobin ($p=0.004$), total operative time ($p<0.001$), estimated blood loss (EBL) ($p<0.001$), intraoperative complications or conversion ($p<0.001$), and renal mass size ($p<0.001$) were associated with prolonged LOS. EBL and total operative time were most predictive of prolonged LOS and were used to create the BLOT predictive scoring system (blood loss and operative time). Blot scores ranged from 0 to 5, to predict prolonged LOS. We observed prolonged LOS in 4.3%, 9.6%, 47.1%, 50.0%, and 100% of patients with scores of 0, 1, 2, 3, 4, and 5, respectively.

Conclusion: Pre-operative clinical factors do not accurately predict prolonged LOS following RAPN. The BLOT score accurately predicts prolonged LOS following RAPN.

Poster #95

HOW WOULD MRI-TARGETED PROSTATE BIOPSY ALTER RADIATION THERAPY APPROACHES IN TREATING PROSTATE CANCER?

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Presented By: Daniel Dix

Introduction: Magnetic resonance (MR)/ultrasound fusion-targeted prostate biopsy has been shown to improve detection of clinically-significant prostate cancer over systematic biopsy sampling. The effects of targeted biopsy on radiation therapy recommendations are not well understood. We aim to determine if targeted biopsy would lead to increased recommendations of aggressive radiotherapy treatments for higher risk prostate cancer compared to standard biopsy results.

Methods: This is a retrospective review of prospectively gathered clinicopathologic data of 533 men who underwent both standard and targeted prostate biopsy from 2014-2017. Three patient cohorts were established: (1) biopsy naïve (80/533), (2) active surveillance (185/533), and (3) prior negative biopsy (268/533). Cancer risk category criteria were established with recommended radiotherapy treatment for each (Table 1). Variation of risk classification due to biopsy method for all patients and within each cohort were analyzed using either a chi-squared statistic or Fisher's Exact test. McNemar's pairwise analyses were performed for all risk categories between targeted and standard biopsy to assess the effects of targeted biopsy on high-risk cancer identification and subsequent radiotherapy recommendations.

Results: Number of patients within cancer risk categories (1. "No Cancer or Low-Risk"; 2. "More Favorable Intermediate-Risk"; 3. "Less Favorable Intermediate-Risk"; 4. "High-Risk") varied due to targeted and standard biopsies among all patients ($p<0.0001$), in cohort 2 ($p=0.0005$), and in cohort 3 ($p<0.0001$). Further, among all patients, targeted biopsy increased cancer risk classification and, correspondingly, would likely result in more aggressive radiotherapy recommendations: "No Cancer or Low-Risk" to "Less Favorable Intermediate-Risk" (29/343, $p<0.0001$) and "No Cancer or Low-Risk" to "High-Risk" (31/353, $p<0.0001$).

Conclusion: Among men with prostate cancer, the addition of targeted biopsy commonly led to reclassification to a higher risk group, which is likely accompanied by more aggressive radiotherapy treatment recommendations when compared with systematic biopsy sampling findings alone. Future prospective studies are needed to validate the degree of altered clinical recommendations regarding radiotherapy approaches due to targeted prostate biopsy.

Poster #96

TREATMENT OUTCOMES FOLLOWING PROGRESSION ON ACTIVE SURVEILLANCE OF A RACIALLY DIVERSE COHORT OF MEN

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Presented By: Jonathan Silberstein, MD, MBA, FACS

Introduction: Active surveillance (AS) for prostate cancer aims to achieve two concurrent goals; to prevent the over treatment of prostate cancer and the timely identification and subsequent intervention in those who progress. We sought to determine the oncologic outcomes of men who had initially been on AS and subsequently underwent definitive treatment.

Methods: A prospective database study is maintained at the South Louisiana Veterans Administration Medical Center, New Orleans, LA. Men electing AS as primary treatment for prostate cancer are prospectively followed in this institutional database.

Results: Our database includes 293 men on AS: 69 (25%) underwent definitive treatment with 30 being undergoing Robot Assisted Radical Prostatectomy (RARP) and 38 Radiotherapy (RT). The majority of these patients were African American ($n=47$). Patients who underwent RARP were on AS for an average of 646.5 days while their RT counterparts were on AS for an average of 885.3 days prior to treatment ($p=.083$).

The 23 men underwent RARP for Gleason Progression and 8 had elective robotic surgery.

Those with progression had ISUP grade 2 (n=12) or ISUP grade 3-4 (n=11). RARP pathologic grading revealed ISUP grade group 1 (n=1), group 2 (n=21), group 3,4,5 (n=8), and missing pathology (n=1). Pathologic staging revealed organ confined disease (n=20), extracapsular extension (n=8), seminal vesical invasion (n=2) and missing data (n=1). For RT patients, 23 received treatment due to Gleason Progression and 15 had elective RT. Those with progression had ISUP grade 2 (n=11) or ISUP grade 3,4,5 (n=12). Following definitive treatment none of these patients have died of any causes with average followup of three years. Four patients (7%) experience biochemical recurrence and underwent early salvage RT (PSA <0.1ng/ml) without recurrence, one is pending treatment, all in the RARP arm. Those who underwent treatment due to gleason progression had no difference in BCR when compared to the cohort electing treatment.

Conclusion: Gleason progression on AS with subsequent definitive treatment has similar rates of BCR to definitive treatment without upgrading. Intermediate outcomes of racially diverse men who received treatment following initial AS protocol reveal that reasonable oncologic outcomes are achievable, longer follow is requisite.

Poster #97

PAIN CONTROL AFTER ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY: IS AN ULTRASOUND GUIDED TRANSABDOMINUS PERIPHERAL NERVE BLOCK WORTH THE HYPE?

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Presented By: Amanda B. Carter, MD

Introduction: Robotic-assisted laparoscopic prostatectomy (RALP) has been widely adopted by urologists for both oncologic and benign diagnoses. Minimally invasive surgery has many benefits; a reduced narcotic pain medication requirement is one of the most attractive features. As technology of transabdominus peripheral (TAP) blocks has improved with ultrasound guidance, we postulated that this might decrease narcotic usage in patients after a RALP.

Methods: We examined resulted in patients who underwent RALP at a single institution by a single surgeon over a four month period. Out of twenty-five cases, 15 patients received a TAP block by the anesthesia staff with ultrasound guidance prior to termination of general anesthesia. The other 11 received local anesthetic (LA) injected by the surgeon after wound closure. We examined effects on post-operative narcotic usage and length of stay (LOS). These patients are discharged the morning after surgery routinely in our practice; total morphine equivalents used were divided by hours inpatient to account for LOS differences based on scheduled surgery time. Averages between the two groups were compared using an unpaired t-test, and proportions were compared using a chi-squared test with p-values documented below.

Results: Mean operating room time was longer in the TAP block group by 8 minutes, but was not significant. Length of stay was not significantly different in either group in terms of hours or days. There were no significant differences in total morphine equivalent usage or morphine equivalents used per hour when comparing the TAP block and LA groups. There were no adverse events recorded from TAP block or LA administration. Table 1.

Conclusion: In this small series, we have not seen benefit of peri-operative TAP block in terms of narcotic usage or length of stay. With an additional cost to the patient of about \$500.00, it may prove to be an inefficient use of healthcare dollars. In the future, a randomized study examining the effect of TAP block on patients both in the hospital and once discharged may be helpful, however, our initial results do not show a significant impact on short term pain control in patients after a RALP.

	TAP block	Local Anesthetic	p-value
Age	64.267	61.545	0.3849
LOS (days)	1.333	1	0.4028
OR time (min)	218.067	210	0.6471
Total morphine equivalents	32.967	31.714	0.8729
Morphine equivalents per hour	1.186	1.237	0.8749

Poster #98

PHOSPHODIESTERASE-5 INHIBITORS AND THE RISK OF MELANOMA FOLLOWING PROSTATE CANCER

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Presented By: George Wayne, MD

Introduction: The diagnosis of prostate cancer confers an elevated risk of erectile dysfunction (ED) regardless of treatment, and these patients have been shown to utilize phosphodiesterase-5 inhibitors (PDE-5i) in treating their ED more frequently than the general population and increasingly since this class of drugs was first approved. Several studies have recently shown a low-probability, but statistically significant association between PDE-5i use and skin cancer, specifically melanoma. We sought to evaluate whether this association translated to a higher risk of melanoma as a secondary malignancy in prostate cancer patients.

Methods: The Surveillance, Epidemiology, and End Results (SEER) database, which contains 5,094,238 cancer diagnoses between 1973-2015, was used to evaluate the secondary malignancy risk of melanoma in prostate cancer patients.

Results: The SEER database houses 629,228 diagnoses of prostate cancer and 292,166 cases of melanoma between 1973 and 2015; of the latter, 92 were recorded as a patient's second cancer reported to SEER. In 43 years, including the 17 following the introduction of PDE-5i medications for ED in 1998, a total of 2 unique cases represent the population of patients who were diagnosed with melanoma following prostate cancer.

Conclusion: An analysis of SEER data demonstrates that prostate cancer patients are not at an increased risk of developing melanoma. Although these patients utilize PDE-5i medications at increased rates in the modern era, the association between these drugs and skin cancer has not translated to any significant risk of melanoma as a secondary malignancy to prostate cancer.

Poster #99

TRENDS IN AMBULATORY CARE OF OLDER ADULTS WITH URINARY STONE DISEASE

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Presented By: Ashley W. Johnston, MD

Introduction: The prevalence of urinary stone disease (USD) is increasing in the United States. Recent investigations suggest rapidly rising inpatient and emergency care utilization for older adults with stones. Data regarding ambulatory care for older adults with USD are lacking. We sought to characterize ambulatory care of USD in the United States with an emphasis on patients older than 65 years of age.

Methods: We conducted a cross-sectional analysis of ambulatory encounters for USD recorded in the National Ambulatory Medical Care Survey (NAMCS) over an 8-year period (2008-2015). NAMCS is a multistage probability survey of office-based outpatient visits and provides nationally representative healthcare utilization estimates. ICD-9-CM diagnostic codes were used to identify encounters for USD of adults aged ≥ 18 years. We accounted for the complex sampling structure of NAMCS in all analyses. Estimates were compared using the Rao-Scott chi square test or Z test, as appropriate.

Results: There were an estimated 28 million ambulatory visits for USD from 2008 to 2015. Older adults (≥ 65 years) accounted for 26.1% of those visits. During the study period, annual visits for USD increased ($p=0.039$) by 51%. In particular, substantial increases were seen among females (136%, $p<0.005$) and older adults (154%, $p=0.012$). Visit estimates among males and younger adults (18-64) were not statistically different at the beginning and end of the study period. Urologists provided care at the majority (60.7%) of the visits and primary care physicians provided care during 29.4% of the visits. Primary care physicians reported more new patient visits for USD than urologists (53.2% vs 32.6%, $p<0.005$). Visits for older adults were more likely to occur in urology than primary care (73.3% vs 56.2%, $p<0.005$). Older adults were more likely to undergo lab testing than younger adults (64.4% vs 55.2%, $p=0.011$).

Females, regardless of age, were more likely than males to undergo laboratory testing (62.9% vs. 53.1%, $p < 0.005$). There were no utilization differences by ethnicity.

Conclusion: Older adults and females constitute a substantial, growing, and resource intense portion of ambulatory visits for USD in the United States. Further research is required to focus on the factors contributing to increasing visits and higher resource utilization by these patient groups.

Poster #100

COMPLEMENTARY AND ALTERNATIVE MEDICINE USE AMONG KIDNEY STONE FORMERS

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Presented By: Joshua Calvert, MD, MPH

Introduction: Kidney stone prevalence is increasing across all demographic groups. Many stone formers choose to utilize complementary and alternative medicine (CAM) products for primary treatment and secondary prevention. We sought to describe patterns of stone-specific CAM modalities in a single institution.

Methods: In this prospective study, structured interviews were conducted with consecutive patients ($n=103$) seen at our institution with a primary diagnosis of kidney stone disease. Participants were asked about kidney stone history, knowledge about dietary prevention for kidney stones, and CAM use. We utilized open-ended questions to elicit information on CAM regarding formulation, patterns of use, and how the participant learned about the product(s).

Results: Overall, 27% ($n=28$) first time stone formers, and 73% ($n=75$) recurrent stone formers comprised the cohort; mean (\pm SD) age 54 (\pm 16.6) years, 65% male. For the cohort, 60% ($n=62$) were aware of stone-specific alternative therapies, either commercial or OTC, and 50% ($n=52$) had ever utilized them, representing 41 unique compounds. Recurrent stone formers showed a non-significant trend towards historic or current supplement use compared to new stone formers, (55% vs 39%, $p=0.16$). The most common fluids consumed with the intention of treating or preventing stone events were apple cider vinegar, cranberry juice, lemon juice, and beer. The most common over-the-counter stone-specific supplement heard of by respondents was *Chanca Piedra* (6.8%, $n=7$), although, use was uncommon (2.9%, $n=3$). Notably, 9% of participants reported their stone disease was less severe or had decreased in occurrence since starting CAM; and, 6% reported their pain-related symptoms had improved. Participants reported learning about alternative treatment most commonly from friends (44%), family (41%), and through online research (41%).

Conclusion: In our kidney stone population, the majority of patients had heard of stone-specific CAM modalities, and roughly half had utilized self-prescribed CAM therapy. These data suggest that kidney stone providers may need to be prepared to discuss CAM therapy with their patients.

Poster #101

A RANDOMIZED, CONTROLLED TRIAL FOR TRANSURETHRAL TREATMENT OF BLADDER TUMORS USING PLASMABUTTON(TM) VAPORIZATION ELECTRODE OR MONOPOLAR LOOP ELECTROCAUTERY

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Presented By: Gordon Hong, BS

Introduction: The use of an electrocautery device (monopolar loop) for patients undergoing transurethral resection of bladder tumors (TURBT) is standard of care. The aim of this study is to establish non-inferiority of complication rates for a bipolar energy device, the PK@ PlasmaButton™ (PK Button), when compared to the monopolar loop.

Methods: Seventy-nine subjects (41 monopolar loop and 38 PK Button) were enrolled in a single-center, prospective, randomized study with cystoscopically detected bladder tumors that were judged endoscopically resectable with only one trip to the operating room. Intra- and post-operative data on complication rates, operative time, catheterization time and disease recurrence rates at three-month follow-up were collected.

Results: Overall complication rates after TURBT with the monopolar loop or PK Button were similar, (56% vs. 40% respectively, $p=0.140$), however there were more bladder perforations in the monopolar loop arm compared to the PK Button arm (12.2% vs. 0%, respectively, $p=0.026$). There was no difference in overall operative time ($p=0.154$), catheterization time ($p=0.834$) and disease recurrence ($p=0.229$).

Conclusion: The results of this study demonstrated no difference between the monopolar loop and PK Button in regards to overall complications; however, there was a higher rate of bladder perforation with monopolar TURBT. PK Button vaporization for bladder tumors represents a promising alternative to traditional monopolar TURBT without compromising short-term (3 month) cancer recurrence rates. Funding: Olympus Corporation

Poster #102

MANAGEMENT AND DIAGNOSIS OF PENILE FRACTURE AT A HIGH-VOLUME INSTITUTION: A 10-YEAR REVIEW

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Presented By: Monica A. O'Hanlon, MD

Introduction: Penile fracture is a rare urological emergency with approximately 1000 cases in the United States reported per year. Given the rareness of this event, there is a sparsity of information available regarding the presentation, diagnosis, management, and concomitant injuries associated with this condition. Our aim is to present the experience of diagnosis and clinical findings of penile fracture over the past 10 years at our institution.

Methods: The charts of 49 men diagnosed with penile fracture were retrospectively reviewed and data was gathered regarding their presentation and treatment.

Results: Between 2007 and 2017, a total of 49 patients with suspected penile fracture were managed at our institution. Sexual intercourse was the reported mechanism of injury for 44 of the men with other mechanisms including masturbation, manual cracking of the penis ("taqaandan"), rolling over onto an erect penis, getting hit in the penis, and pulling an erection out of pants. On presentation, 19 men had deviation of the penile shaft, 27 had ecchymosis, and 44 had edema. Ten men had imaging as part of their evaluation including MRI, ultrasound, retrograde urethrogram, and CT. One man who had a delayed presentation and atypical exam was treated conservatively, and the other 48 patients underwent surgical treatment. Of the men who underwent surgery, 41 men were found to have a corporal laceration, 2 men had an avulsion of the dorsal vein without injury to the corpora, 3 had corporal hematomas, and 2 men had isolated urethral injuries. Thirteen of the men with corporal injuries had concomitant urethral injuries. In two instances, men who presented with hematuria did not have a urethral injury. Cystoscopy was performed in only 17 cases.

Conclusion: Penile fracture is a rare urologic emergency but when suspected, is almost always associated with corporal and frequently (about 1/3 of the time) urethral injury, which requires surgical repair. Intercourse is the most common reported cause of penile fracture, and physical exam can vary on presentation. Suspected penile fractures should be promptly evaluated and surgery should continue to be the mainstay of treatment.

Poster #103

HIGH ANXIETY WITH XIAFLEX: MEN SHOULDN'T WORRY

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Presented By: Katherine Cockerill, MD

Introduction: Patients with Peyronie's disease (PyD) often present with concurrent complaint of erectile dysfunction. Collagenase clostridium histolyticum (CCH) is commonly offered as a treatment alternative to surgery for eligible PyD patients; however there is limited research on this treatment's effects on erectile vascular function. The purpose of this study is to examine the vascular erectile function of patients pre- and post-treatment for Peyronie's disease with CCH.

Methods: After study consent, ten patients underwent vascular examination of erectile function by a single surgeon utilizing color Doppler duplex ultrasound (CDDU) before and after treatment for PyD with eight stepwise intralesional injections of CCH. Doppler variables studied include mean peak systolic velocity (mPSV) of right and left cavernous arteries and resistive

index (RI). Doppler diagnosis and curvature severities were established and recorded by the examining physician at the time of CDDU.

Results: Median age at time of initial Doppler was 59 years (range 45-63) and mean BMI was 29.9 kg/m² (standard deviation=4). Median SHIM score prior to treatment was 16 (range 10-23). Patient comorbidities included hypertension (7/10), diabetes mellitus (2/10), hyperlipidemia (6/10), and history of heart disease (2/10). Seven patients had curvature measured at > 30 to 60 degrees, 3 patients had curvature of > 60 to 90 degrees. Treatment with CCH spanned over a median of 183 days. Average mPSV among right and left cavernous measurements during pre-CCH CDDU was 35.13 mL/s (SD=8.26) compared to post-CCH mean of 39.7 mL/s (SD=16.23). Comparing pre- and post-CCH CDDU values, five out of 10 patients had stable or improved RI. Average RI pre-CCH was 75.3 (SD=13.4) while mean RI post-CCH was 73.9 (SD=12.4). Four patients had prolonged erections (>1 hour following testing) requiring reversal on CDDU exam pre-CCH while 2 had prolonged erections requiring reversal on CDDU exam post-CCH.

Conclusion: In this small cohort of patients, vascular parameters appeared relatively stable on CDDU after treatment with CCH injections. Patients can be confidently advised that CCH therapy will not adversely affect erectile function. Physicians should be aware that men with PyD are at risk for prolonged erections following intracavernous office tests.

Poster #104

ASSESSMENT OF TRANSCUTANEOUS ULTRASOUND IN IDENTIFICATION OF THE POSTERIOR TIBIAL NERVE

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Mayo Clinic Florida

Presented By: Steven Lomax, MD

Introduction: Percutaneous tibial nerve stimulation (PTNS) is a currently approved modality for neuromodulation to treat voiding dysfunction. Identification of the relative position of the nerve is by physical palpation of the ankle region utilizing accepted and identified anatomic landmarks. Treatment efficacy may be impacted by failure to optimally identify the relative posterior tibial nerve position secondary to individual anatomic variance. Optimally and reproducibly identifying the correct nerve position may impact therapeutic efficacy.

Methods: 25 adult subjects were enrolled with IRB approval to gauge the difference in position of the posterior tibial nerve by the use of transcutaneous ultrasound as opposed to cutaneous palpation.

The position of the posterior tibial nerve was determined first by palpation method and then by using the Philips Lumify Mobile App Based ultrasound with L12-4 Broadband Linear Array transducer. The difference in position between the two methods was determined in both the proximal-distal (PD(knee – sole)) and anterior – posterior planes (AP). Statistical analysis was completed with numeric variables summarized with the sample median, range, and interquartile range (IQR). Categorical variables were summarized with number and percentage of patients. Comparisons between anterior-posterior and proximal-distal distances were performed using a nonparametric Wilcoxon signed rank test. All analyses and graphics were performed using SAS statistical software (version 9.4M5, SAS Institute Inc., Cary, NC).

Results: 25 patients were studied: 7 (28%) were male and 18 (72%) were female; median age was 37 years (range, 19 to 70; IQR, 31 to 51). The median AP distance between ultrasound and provider was 2 mm (range, 0 to 5 mm; IQR, 2 to 3 mm). The median PD distance between ultrasound and provider was 4 mm (range, 0 to 9 mm; IQR, 3 to 5 mm). The median difference between the AP and PD distances was 2 mm (range, -3 to 7 mm; IQR, 0 to 4 mm).

Conclusion: The use of ultrasound identifies the nerve with greater accuracy than palpation technique. Our data suggest the distance between ultrasound and provider location of the posterior tibial nerve is higher along the PD plane compared to the AP plane (Wilcoxon signed rank p<0.001). Impact on therapeutic efficacy will need further study.

Poster #105
FINANCIAL IMPLICATIONS OF BIPARAMETRIC PROSTATE MAGNETIC RESONANCE IMAGING

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Presented By: Rachael Leigh Sherrer, BA

Introduction: Multiparametric magnetic resonance imaging (MP-MRI) targeted biopsy has been shown to identify more clinically-significant cancers and reduce the detection of clinically-insignificant disease when compared to systematic biopsy; however, the wide-spread accessibility of MP-MRI is limited. A potential strategy for reducing the cost, study time, and contrast-associated risks associated with MP-MRI is elimination of the dynamic contrast-enhanced (DCE) sequence, relying instead on biparametric MRI (BP-MRI). BP-MRI has been shown to have a diagnostic accuracy and cancer detection rate that are equivalent to those of MP-MRI.

Methods: We modeled the potential cost of BP-MRI compared to MP-MRI to determine what cost savings would occur if DCE was eliminated from these studies.

Results: When controlled for a 45-minute time window that allows for one full MP-MRI or three full BP-MRI studies, the BP-MRI 45-minute gross profit is \$1167.30. This is an increase in gross profit of \$588.48 for the 45-minute time window or \$7061.76 in a 9-hour business day when performing BP-MRI compared to MP-MRI for prostate cancer detection.

Conclusion: BP-MRI has the potential to result in substantial cost benefit and increased access to MRI in the diagnostic workflow and risk-stratification of men being evaluated for prostate cancer when compared to conventional MP-MRI.

Modality/Exam/Study	MP-MRI	BP-MRI	Notes/Source		
Primary Phase 1	9	291.00	9	277.50	Estimated data
Primary Phase 2	9	266.13	9	277.50	Estimated data
Imaging based on T2, 3000 Phase 1a	9	697.35	9	675.27	Estimated data
Phase 1a results	9	1.53			Estimated data
T2 all video coding	9	6.53			Estimated data
T2 compression	9	0.26			Estimated data
Report writing	9	0.67			Estimated data
Posterior calibration	9	16.77			Estimated data
Total Clinical Services	9	85.11	9	-	
Lab Fee					
Pathology (biopsy) and	9	33.94	9	46.99	Pathology cost
Lab (biopsy) and pathology cost	9	31.46	9	3.53	Source of Lab Fee
Lab Fee Cost	9	30.93	9	36.52	
Combined Clinical Services and Lab Fee					
Per consultation	9	119.11	9	80.57	
Lab Fee					
Per consultation	9	279.63	9	395.13	
Number of visits in 90 minutes	9	178.93	9	1,167.30	

Poster #106
MRI/US FUSION PROSTATE BIOPSY VS. SYSTEMATIC TRUS PROSTATE BIOPSY: DETECTION OF CLINICALLY SIGNIFICANT PROSTATE CANCER AT A SINGLE INSTITUTION ACADEMIC SETTING IN SOUTH FLORIDA.

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Presented By: Maurilio Garcia-Gil, MD, MPH

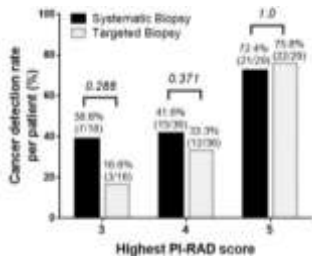
Introduction: Fusion biopsy has been proposed as a method for decreasing management of insignificant prostate cancer, and potentially for optimizing planning for focal therapy of prostate cancer. At our site, we sought to compare MRI / US Fusion biopsies with conventional systematic biopsies in a self-controlled study in patients in whom both biopsy types were performed in one setting.

Methods: A retrospective review of 83 patients and 127 MRI targeted lesions from 9/2017-

9/2018 who underwent both a MRI/US fusion biopsy and systematic TRUS biopsy in the same setting. Biopsies were evaluated by our institutional pathology department and compared by Gleason grade, volume and location using McNemar's Test. MRI-PIRADS evaluation performed by our institutional radiology department prior to fusion biopsies using UroNav system (InVivo, Gainesville, FL). Fusion biopsy performed at discretion of urologist with clinical concern for prostate cancer.

Results: For lesions in anterior-PZ, CZ, TZ, there was a "true negative" rate of 42%. For the same area there was a 22% false negative rate with fusion biopsy. Overall cancer detection rates similar between targeted and systemic methods (34.1 vs. 35.2%, $p=0.286$). When stratifying by highest PIRADS score, there was no statistical difference between the two methods on a per patient basis, (Wilcoxon signed rank test, $P=0.25$).

Conclusion: By performing a self-control of MRI/US fusion biopsy and standard biopsy, there is the best chance for comparing the efficacy of each while minimizing confounders. MRI/US fusion biopsy has potential to improve detection and management of clinically significant prostate cancers. This will depend on refinement of both radiologic evaluation to detect relevant lesions and the urologist's capacity for targeting of lesions.



Poster #107

COMPARISON OF CONVENTIONAL TRUS, MRI AND MICRO-ULTRASOUND FOR VISUALIZING PROSTATE CANCER IN AN ACTIVE SURVEILLANCE POPULATION: A FEASIBILITY STUDY

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Presented By: Gregg R. Eure, MD

Introduction: Active Surveillance monitoring of prostate cancer is unique in that most patients have low grade disease which is not well visualized by any common imaging technique. High-resolution (29 MHz) micro-ultrasound is a new real-time modality which has been demonstrated to be sensitive to significant prostate cancer and effective for biopsy targeting. This study compares micro-ultrasound imaging with MRI and conventional ultrasound for visualizing prostate cancer in active surveillance.

Methods: 9 patients on active surveillance were imaged with mpMRI prior to biopsy. During the biopsy procedure, imaging and target identification was first performed using conventional ultrasound, then using micro-ultrasound. The mpMRI report was then un-blinded and used to determine cognitive fusion targets. Using micro-ultrasound, biopsy samples were taken from targets in each modality, plus 12 systematic samples.

Results: mpMRI and micro-ultrasound both demonstrated superior sensitivity to Gleason Sum 7 or higher cancer compared to conventional ultrasound ($p=0.02$ McNemar's test). Micro-ultrasound detected 89% of clinically significant cancer, compared to 56% for mpMRI.

Conclusion: Micro-ultrasound may provide similar sensitivity to clinically significant prostate cancer as mpMRI, and visualized all significant mpMRI targets. Unlike mpMRI, micro-ultrasound is performed in the office, in real-time during the biopsy procedure, and so is expected to maintain the cost-effectiveness of conventional ultrasound. Larger studies are needed before these results may be applied in a clinical setting.

ClinicalTrials.gov #NCT03035487 (Retrospectively registered January 30, 2017)

Poster #108

VASECTOMY UTILIZING RADIOFREQUENCY ABLATION: INITIAL FDA ANIMAL STUDY

William Shingleton, Gerard Henry

Presented By: Gerard D. Henry, MD

Introduction: Vasectomy for sterilization of men has been performed by a standard procedure of isolating the vas through a small opening in the scrotal skin with local anesthesia. This method has been performed for over 50 years. We report a new, novel approach to sterilization utilizing a radiofrequency ablation (RFA) device which delivers the current to the vas via a percutaneous approach. A proof of concept study was performed to demonstrate the effect of RFA on the vas in an animal model.

Methods: A handheld RFA device was developed by the authors (WBS) and has received a US patent for the device. The proof of concept involved treating 5 male dogs with the device and obtaining tissue for histological examination. After receiving approval for conducting this study, 5 male dogs were selected. After each animal received general anesthesia, a percutaneous RFA vasectomy was performed on each vas of the animal. At day 10, the animals were placed on general anesthesia and an open vasectomy was performed with resection of the treated vas and a section of the untreated vas. Histologic examination was performed on each section of the vas removed and microscopic examination was performed on each section of the vas.

Results: All animals survived the ablation procedure without complications. Histologic evaluation of the treated vas revealed evidence of thermal injury to the vas and the initial formation of scar tissue in all animals treated. The untreated portion of the vas had no evidence of any injury.

Conclusion: In this proof of concept study, we demonstrated that percutaneous RFA of the vas in an animal model could be performed in a safe manner, with no complications and histologic evidence of thermal injury in the ablated portion of the vas. The future hope for the device is a safer, faster, human vasectomy with no local and faster recovery time.

Funding: Superior VAS

Poster #109

VASAL ANASTOMOSIS UTILIZING A NOVEL SUPER MICROSURGERY ROBOTIC PLATFORM

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Presented By: Sijo J. Parekattil, MD

Introduction: Current robotic assisted microsurgical platforms may have some limitations in terms of the ability to perform super microsurgery (reconstructive surgery in structures in the 0.3-0.8mm range). This study assesses the feasibility of performing a vasal anastomosis utilizing a novel super microsurgery robotic platform.

Methods: Vasal anastomosis was performed on an ovine aries (sheep) vas segment utilizing a novel super microsurgical robotic platform (MMI Inc., Pisa, Italy). The ovine aries vas segment was harvested and then prepared in a manner consistent with a standard vasectomy reversal procedure. The segment was transected carefully, and a vas holder clamp utilized to approximate the two ends of the vas to be anastomosed. The super microsurgery robotic platform was now engaged, and a modified single layer anastomosis was performed using 10-0 nylon sutures by a microsurgeon.

Results: The vas lumen was measured to be 0.32mm using a digital micro-caliper. The anastomosis was successfully completed. There were no suture breaks or needle bends. Patency was achieved (dye test).

Conclusion: This feasibility study suggests that vasal reconstructive surgery may be a potential application for this novel super microsurgery robotic platform. Further evaluation and studies are warranted.



Poster #110

PROSTATIC URETHRAL LIFT BASELINE PREDICTORS OF RESPONSE

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Presented By: Steven N. Gange, MD, FACS

Introduction: The Prostatic Urethral Lift (PUL) procedure has been proven through clinical studies to deliver rapid, significant and durable improvement in lower urinary tract symptoms (LUTS) and quality of life. Now, urologists want to know the baseline predictors of response when selecting patients for the PUL procedure. The objective of this study was to determine how baseline patient characteristics correspond with long-term treatment outcomes.

Methods: Baseline predictors of response were determined by analyzing 5-year data from the 140 subjects randomized to PUL in the largest randomized L.I.F.T. study. Men ≥ 50 years, International Prostate Symptom Score (IPSS) ≥ 13 , peak flow rate (Qmax) ≤ 12 mL/s and prostate volume 30-80 cc were enrolled. The analysis was performed using two definitions of responder. The first was a subject who did not require subsequent BPH surgery and was not on medication at 5 years. The second was a subject who experienced an average IPSS improvement ≥ 4 points over 5 years. Univariate assessments of predictive value were conducted for baseline parameters including age, prostate volume, prostate-specific antigen (PSA), voided volume, post-void residual (PVR), bladder capacity, Qmax, body mass index (BMI), quality of life (QOL) and the individual IPSS elements.

Results: PUL subjects experienced improvement by 1 month that was durable to 5 years (IPSS 36%, QOL 50%, $p < 0.0001$). Using the first definition of responder, high Qmax, low PSA and low IPSS were predictors of response. By the second definition, high urgency and high hesitancy were predictors of response (Table 1).

Conclusion: BPH patients with early disease and preserved bladder function (higher Qmax, lower PSA, lower incomplete emptying score) may be more likely to be surgery and medication free at 5 years. Patients with higher urgency and hesitancy symptoms may be more likely to have long term, significant symptom relief through 5 years. PUL patients demonstrate a high response rate, but there may be a window of treatment to get optimal response. These findings may be useful to urologists as they select patients for PUL treatment.

Funding: NeoTract/Teleflex, Inc.

Table 1: Predictors of Response	Multivariate p value	Univariate p value
Responder definition 1: Surgery free and no medication use at 5 years		
* Peak Flow Rate (Qmax)	<0.01	<0.01
* PSA	0.02	<0.01
* IPSS Q1: Incomplete Emptying	0.02	0.02
* IPSS Q3: Intermittency	NS	0.02
* IPSS Q5: Weak Stream	NS	0.02
* Quality of Life	NS	0.05
* Prostate volume	NS	0.06 (NS)
Responder definition 2: IPSS ≥ 4 point average change over 5 years		
* IPSS Q6: Urgency	0.02	0.02
* IPSS Q6: Hesitancy	0.04	0.04

Poster #111

METFORMIN USE IS ASSOCIATED WITH IMPROVED INTERNATIONAL PROSTATE SYMPTOM SCORES IN MEN WITH METABOLIC SYNDROME

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Presented By: Rashid Sayyid, MD, MSc

Introduction: Previous studies have demonstrated that patients with metabolic syndrome (MetS) have significantly worse lower urinary tract symptoms (LUTS). Metformin and statins, medications commonly used in men with MetS, have established benefits in this patient population. Our objective was to determine whether use of metformin and/or statins is associated with improved International Prostate Symptom Scores (IPSS) in men with MetS.

Methods: A random sample of 262 men with MetS was identified from a prospectively collected database. IPSS score was recorded at time of visit to clinic. Patient-reported history was used to determine metformin and statin use at time of IPSS measurement. Multivariate linear regression analysis was used to assess the relationship between each of metformin/statin use and IPSS. Patient age, use of 5-alpha reductase and alpha-blockers, and prostate volume were evaluated as potential confounders of these relationships. Statistical significance was set at $p < 0.05$.

Results: Mean patient age was 65.7 years. There were 66 (25.2%) men using metformin and 160 (61.1%) using a statin. Mean IPSS score for men using metformin was 7.89, while men not using metformin had a mean score of 9.37. On multivariate linear regression analysis, use of metformin ($p = 0.047$) was a significant predictor of lower IPSS in men with MetS. Prostate volume ($p = 0.04$) and need for alpha-blocker ($p < 0.01$) were associated with higher IPSS score. Mean IPSS score for men using a statin was 8.76, while men not on a statin had a mean score of 9.37. On regression analysis, use of statin was not significantly associated with any change in IPSS score ($p = 0.98$).

Conclusion: Metformin use in men with MetS significantly improves LUTS, whereas statins have no significant impact. Future studies that evaluate the mechanisms by which metformin improves IPSS are needed.

Multivariate Linear Regression Analysis for Prediction of IPSS		
Variables	Standardized Coefficients	P-value
Metformin use	-0.17	0.047
Age	0.01	0.98
5-alpha blocker use	0.15	0.001
Statins use	-0.01	0.98
Prostate volume	0.08	0.04
Statins use		
Age	0.01	0.98
5-alpha blocker use	0.15	0.001
Statins use	-0.01	0.98
Prostate volume	0.08	0.04

Poster #112

PRELIMINARY ASSESSMENT ON THE TREATMENT OF ERECTILE DYSFUNCTION WITH BIMIX GEL

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Urology Specialty Care

Presented By: Daniel R. Martinez, MD

Introduction: Trimix and Bimix (papaverine, phentolamine and prostaglandin and papaverine, phentolamine) have been used for intracavernosal injections (ICI) for many decades as a treatment for erectile dysfunction (ED). Stabilization of injectable Trimix/Bimix can be difficult and refrigeration is recommended, not to mention the discomfort associated with the injection. Intraurethral Bimix Gel (BMG) provides a stable, therapy with an easy, needle-free, non-refrigerated application, and an attractive alternative for the treatment of ED. This data provides a preliminary review of BMG outcomes for the treatment of ED.

Methods: Over 6 months (1/2018 – 6/2018) $n = 37$ patients were prescribed BMG as principle modality for ED. Patients were unsatisfied with current treatments and not interested in ICI. They all had a combination of comorbidities, including, but not limited to diabetes, post-radical prostatectomy, Peyronie's disease, hypertension, and hyperlipidemia. Mean age was 61.65

(range 44-80). Formulation of BMG was 4mcg phentolamine and 1000mcg PGE1 (per ml). For injection, active agents mixed with standard gel, using a prefilled syringe system. Patients were instructed how to properly insert to promote absorption and maximize outcomes.

Results: Comparing pre-BMG and post-BMG Sexual Health Inventory for Men (SHIM) scores, the average was 3.92 (range 0-18) and 13.43 (range 0-25), respectively. The pre-BMG scores represent patients potentially being on some other form of ED therapy. Patients responded favorably, and all positively responded regarding the medication's efficacy. Favorite aspect of the therapy was its needle-free drug delivery system. No adverse events were reported. Most common complaint was some burning with application.

Conclusion: As another weapon in the urologists' armamentarium, BMG may have several advantages over both phosphodiesterase inhibitors (PDE5-I) and traditional, ICI. We showed a change in SHIM score of 9.51, comparable to other treatment modalities. BMG can be stored at room temperature and provides greater stability (versus ICI). This needle-free option for Bimix is an important addition in sexual medicine, as patients require alternatives for ED care. Preliminary results with BMG are favorable, yet further clinical data will help solidify it amongst the other treatment modalities for ED.

Poster #113
ROBOTIC AND OPEN TAILORED URETERAL REIMPLANTATION WITH EQUIVALENT OUTCOMES

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Presented By: Amanda Carter, MD

Introduction: Robotic assisted laparoscopic surgery in pediatric urology is a well described technique. We describe our experience with robot-assisted laparoscopic dismembered ureteral reimplantation (RALDUR) for repair of pediatric primary obstructed megaureter (POM) compared to an open approach.

Methods: We present a retrospective analysis of children with POM who had RALDUR with a cohort of children who had open dismembered ureteral reimplantation (ODUR) over an 8 year period.

Results: Open and robotic groups had similar presentation and indication for operation, pre-operative ipsilateral differential renal function, and pre-operative transverse ureteral diameter. All robotic surgeries were technically successful without open conversion. In the robotic group, one child required percutaneous nephrostomy for pyonephrosis. This child and another ultimately needed nephrectomy for recurrent UTI and severe loss of renal function. The majority of children in both groups required ureteral tapering. In the open cohort, two children required second surgery for obstruction, and 1 required nephrectomy for loss of renal function. Overall, the RALDUR group had significantly longer mean operative time (RALDUR = 267 min and ODUR = 183 min, $p<0.001$). After a pivotal change in operative technique this gap narrowed to a non-statistically significant mean operative time difference (RALDUR = 201 min and ODUR = 183 min, $p=0.07$).

Conclusion: We conclude that RALDUR is feasible, safe, and effective with equal surgical outcomes to ODUR. RALDUR is associated with longer operative times but shorter hospital stay.

	Total	Median Age (yr)	Percentage of males(%)	Overall Success (%)	Relief of surgical obstruction(%)	De novo reflux	Complications (%)	Mean Hospital stay (days)	Mean follow up time (months)
ODUR	22	4.6	72%	86.4	90.9	1	18	2.6	27.7
RALDUR	23	5.6	71%	90.5	95.2	1	18	5.8	38.6
P value							0.82	<.001	

Poster #114**OUTCOME ANALYSIS OF PEDIATRIC PYELOPLASTY COMPARING ASYMPTOMATIC MILD-TO-MODERATE OBSTRUCTION TO SEVERELY OBSTRUCTED, PALPABLE RENAL UNITS**

Alyssa Greiman, Ryan Zipper, Andrew Stec

Medical University of South Carolina

Presented By: Alyssa Kay Greiman, MD

Introduction: Congenital ureteropelvic junction (UPJ) obstruction exists in a spectrum of severity in the infant from moderate to extreme dilation with anatomic distortion of the kidney. There is a paucity of literature regarding the subset of patients with severely obstructed renal units in the infant population and their surgical outcomes. The author's postulate that when pyeloplasty fails, it has clinically seemed to be occurring in patients with severely obstructed renal units. We hypothesized that in young children who had pyeloplasty failures requiring reoperation, they were more likely to be congenitally severely obstructed renal units. We evaluate preoperative and postoperative factors that potentially affected pyeloplasty outcomes.

Methods: The study cohort was children 0-24 months old presenting with congenital UPJ obstruction from 2000-2017 who underwent pyeloplasty at the authors' institution. Our primary outcome was need for reoperation to correct a failed pyeloplasty. Univariate analysis was performed utilizing PSPP 1.0.1.

Results: Sixty-seven patients with 74 obstructed renal units who underwent pyeloplasty were identified. Fifty-six (84.6%) of the infants were male. Mean age at surgery was 6 months with an average follow-up of 23 months. 2 failures (2.7%) with need for reoperation were identified, success rate of 97.3%.

Preoperatively, the sole preoperative factor that had statistical significance was placement of preoperative percutaneous nephrostomy ($p=0.013$). Postoperatively, failure rate was not impacted by having a post-operative UTI, urine leak, wound infection, or readmission. In both failure patients, they had issues with the ureteral stent in the postoperative period that required stent replacement and or repositioning thus having a prolonged stenting period. This leads to a statistically significant association with stent manipulation ($p<0.001$) and duration of stenting ($p=0.0001$) with pyeloplasty failure.

Conclusion: The hypothesis that there is a relationship between severity of UPJ obstruction and need for reoperation after pyeloplasty was not supported by the data. A slight association with having a preoperative nephrostomy tube was noted, but this is of unclear significance. More interestingly the data demonstrated that in both failed pyeloplasty patients in this cohort, they had issues with their perioperatively placed stents that required replacement and manipulation across the healing UPJ.

	Success	Failure	p-value
Preoperative demographics			
Pyeloplasty performed (n=74 renal units)	72 (97.3%)	2 (2.7%)	n/a
Gestational age @ birth in weeks (range)	38.6 (32-41)	38.5 (37-40)	0.97
Male gender n (% male)	65 (88.1)	2 (100)	0.56
Age at surgery in months (range)	6.2 (1-22)	3 (2-4)	0.99
Laterality n (% right)	29 (40.3)	1 (50)	0.60
Palpable abdominal mass n (%)	8 (11.1)	1 (50)	0.10
Pre-operative UTI n (%)	5 (6.9)	0	0.70
Pre-operative decompression n (%)	4 (5.6)	1 (50)	0.013*
AP diameter of renal pelvis in mm (range)	30.0 (9-39.0)	34.5 (32.1-36.8)	0.99
Thickness renal parenchyma in mm (range)	7.1 (2.0-20.9)	4.0 (3.8-4.2)	0.85
Postoperative outcomes			
Average duration of stent in days (range)	21 (9-42)	72 (26-75)	0.0001*
Stent manipulation n (%)	0	2 (100)	<0.001*
Post-op UTI n (%)	5 (6.9)	0	0.70
Post-op urine leak n (%)	1 (1.4)	0	0.87
Post-op wound infection n (%)	1 (1.4)	0	0.87
Post-op re-hospitalization n (%)	5 (6.9)	0	0.88

Table 1: Predictors of pyeloplasty success

Poster #115

RESULTS, COMPLICATION AND LESSONS LEARNED DURING 3 YEARS REPAIR OF HYPOSPADIAS IN A LOW VOLUME CENTER. PEDIATRIC SPECIALTIES HOSPITAL: OMAR TORRIJOS HERRERA, PANAMA 2014-2017

Florin Rotar, Celeste Alston

HEPOTH, CSS-Panama

Presented By: Florin Andrei Rotar

Introduction: Panama has approximately 4 million inhabitants, the Pediatric Specialties Hospital (HEPOTH) is a 3rd level hospital and is one of the only two reference centers for pediatric urology, however we are a center of low volume in terms of hypospadias cases. The pediatric urology service of the HEPOTH is conformed by two urologists, who provide approximately three thousand new consultations per year, from which approximately 20 - 25 are patients with a diagnosis of hypospadias. The surgical treatment of hypospadias continues to be one of the most controversial aspects of pediatric urology. There are numerous techniques, none of them showing a clear superiority or efficacy. A similar review was carried out for the 2007-2010 period, after which we implemented changes to improve our complication rate for the reduction of fistulas subcuticular stitches & covering the urethroplasty. For distal hypospadias we are more oriented to properly master the Snodgrass technique; the proximal ones, the Koyanagi technique in our hands presented more than 80% of complications therefore we decided to use techniques in 2 times mainly Bracka.

Methods: The main objective was to describe the surgical techniques employed for hypospadias correction and the complications associated. We performed a prospective study of all the hypospadias operated from 01 January 2014 till 31 October 2017 in the Pediatric Specialties Hospital Omar Torrijos Herrera, Panama. We included all the patients operated by the same surgical team and had no loss of data neither of follow up, we had no exclusion criteria. The data was analyzed with IBM SPSS Statistics 19th edition. Thirty-eight patients were obtained, of which 6 cases were discarded due to non-compliance with inclusion criteria.

Results: Premature urethral catheter removal is associated with 100% complication rate.

By adapting the modifications from the prior series the global complication rate reduced from 60% to 35%. When using vicryl we had a 47% complication rate.

Conclusion: Periodic review of the techniques employed is our best instrument to identify our successes and mistakes, so we can generate life changing modifications,

For low volume centers all the surgeries should be performed by the same surgical team to achieve dexterity.

Poster #116

DELAYED PRESENTATION OF URETHROCUTANEOUS FISTULA AFTER HYPOSPADIAS REPAIR

Ghalib A. Jibara, MD, Ashley W. Johnston, MD, J. Todd Purves, MD, PhD, Jonathan C. Routh, MD, MPH, John S. Wiener, MD

Duke University School of Medicine, Division of Urologic Surgery

Presented By: Ashley W. Johnston, MD

Introduction: Urethrocutaneous fistula (UCF) is the most common long-term complication after hypospadias repair. The vast majority of UCF develop within the first postoperative year with a mean time of 6 months from initial repair; delayed fistula presentation has rarely been reported. The aim of this study is to report our experience with UCF presenting more than 5 years after initial hypospadias repair or early secondary UCF repair.

Methods: We conducted a retrospective review of all patients who underwent UCF repair (CPT codes 54340 and 54344) at our institution between 1997 and 2017 regardless of the hospital of initial hypospadias repair. Delayed UCF presentation was defined by a history of single normal urinary stream after initial hypospadias repair and subsequent presentation of a UCF/second urinary stream presenting more than 5 years after initial hypospadias repair or repair of UCF. Patients with evidence of distal obstruction or meatal stenosis after initial repair were excluded. Demographic, clinical and follow-up data were collected and reviewed after approval from our institutional review committee.

Results: Of the patients who underwent UCF repair 1997-2017, 12 patients met inclusion criteria. Eight patients (66.6%) had initial hypospadias repair at our institution while 4 patients (33.3%) were initially treated at an outside institution. The mean age at hypospadias repair was

12.3 months (Range 6-32). The mean time to delayed UCF presentation was 11.5 years (Range 7.1-15.8). Two patients (16.7%) experienced delayed UCF after previous repair of early UCF at 11.4 and 15.3 years post-operatively. The patients' characteristics are listed in the Table below. Four patients with delayed UCF (33.3%) required revision surgery for UCF recurrence with a mean time to recurrence of 2.2 years (Range 0-5.6).

Conclusion: To our knowledge, this is the largest report of delayed UCF presentation to date. Delayed UCF presentation is a rare but significant event, and we postulate that penile skin changes during pubertal growth and increased awareness of the genitalia in older children and teenagers may be contributing factors as all but one presented past their 10th birthday and seven past their 12th birthday. If long term follow-up is not planned, patients' families should be counseled about the possibility of delayed presentation of UCF.

Table - Patients with Delayed Urethrostomous Fistula Presentation

Patient#	Location of Hypospadias Lesions	Age at initial Hypospadias Repair (yrs)	Time to Delayed UCF (yrs)	Location of UCF
1	Coronal	6	7.5	Coronal
2	Perineoscrotal	22	6.5	Mid shaft
3	GB	6	6.8	Shaft
4	Coronal	6	10.1	Coronal
5	Coronal	7	12.4	Coronal
6	Perineoscrotal	18	11.2	Penoscrotal
7	Coronal	10	11.5	Shaft
8	GB	20	13.1	Mid shaft
9	Distal	12	13.1	Mid shaft
10	Coronal	7	13.7	Coronal
11	Perineoscrotal	12	15.3	Perineoscrotal
12	Coronal	13	16.8	Coronal

GB = gap anomaly

Poster #117

ROLE OF DUSTING DURING URETEROSCOPIC LASER LITHOTRIPSY IN ADOLESCENT PATIENTS

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Presented By: Marcos Perez-Marchan

Introduction: The incidence of urolithiasis has increased in the pediatric and adolescent population. The use of ureteroscopy with laser lithotripsy (URL) for the treatment of ureteral stones has become popular in the last several years. Several studies in the adult population has described the benefits of dusting during ureteroscopic laser lithotripsy. We aim to describe our experience using the dusting technique in the adolescent population.

Method: A retrospective clinical database was constructed for patients who underwent URL using the dusting technique at our institution from 9/2007 to 8/2018. All surgeries were performed by a single surgeon (MPB). Dusting was performed with the holmium laser with low power and high frequency in all patients. Patients with complex GU anatomy were excluded. Collected data included: history of stones, presenting symptoms, pre-op studies, use of pre/post stent, f/u studies, presence of residual stones, complications and long-term recurrences.

Results: 72 adolescent patients ages 12 -to 21 years (mean 17 y/o) underwent URL for ureteral stones with a mean follow up of 3 years. 18 males and 40 females were identified. Dusting was performed in 54 % successfully with 46 % requiring stone basket extraction. Residual fragments were identified in 4%. 15% (8) of patients had complications. Most complications were Clavien-Dindo grade I and II (Stent pain, headaches, UTI's, nausea and vomiting), except for one patient with a grade IIIB (encrusted stent). Recurrence was seen in 26% with most having non-obstructive small renal stones that required only observation. An analysis between dusting versus dusting + basket extraction demonstrated no significant difference regarding location and size of the stone, presence of residual fragments and complications.

Conclusion: The use of dusting in adolescents undergoing laser lithotripsy is safe and feasible in 54% of patients. Our results compare favorably to adult series using this technique. Dusting can be applied to most ureteral stones with an expectation of low residual fragments and complications. Recurrence rate in this series warrant a long term follow up in the adolescent populations. Future development of higher frequency lithotripters should improve the results of this technique in the future.

Poster #118
SOCIETIES FOR PEDIATRIC UROLOGY MEETINGS – HOW ARE WOMEN REPRESENTED?

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Presented By: Madeline Rovira Koerner, MD, MBA

Introduction: The proportion of women in senior leadership roles within urology remains substantially lower than that of female candidates entering the specialty. It is unclear if women are receiving the visibility, networking opportunities, mentorship, and recognition that are influential to advancement to senior leadership roles. Women comprise a smaller percentage of the urology workforce than men, but we hypothesize that female participation at national meetings should be similar to female membership rates. This study compares the proportion of female participation and weighted female podium time at national pediatric urology meetings with the proportion of female members of the Societies for Pediatric Urology (SPU).

Methods: Annual and fall SPU meeting archives from 2013-2017 (available online) were reviewed. The 2015 fall meeting was excluded as it was unavailable. Presenter gender, role (moderator, invited speaker, podium presenter, moderated poster presenter and video presenter) and time of presentation (minutes) were recorded. Gender was determined by first name of the person listed as speaker in the online programs. In cases of ambiguity, a google search clarified the gender. Participation was then weighted by the time an individual was at the podium. The proportions of female participation, unweighted and weighted by time at the podium, were compared with the proportion of female membership of the SPU (20%) using the Z statistic. A p-value <0.05 was considered statistically significant.

Results: There were 1,592 total participants making up 29,371 total podium minutes over the study period. 29.1% of the conference participants were female, however females comprised only 21.3% when weighted by time at the podium (table). Over time, there was a general increase in female participation (24.5% in 2013 to 34.1% in 2017), and, while weighted participation similarly increased over time, it remained lower than unweighted participation (17.3% in 2013 to 26.3% in 2017). Fall meetings and invited speaker opportunities specifically had lower than expected female participation (p<0.001).

Conclusion: Female participation at SPU meetings overall exceeds the current proportion of female SPU membership, however, when weighted by time at the podium, it appears that female participation decreases. Fall meeting and invited speaker opportunities remain specific areas that lag behind female membership rates.

Table 1: Observed female participation compared to proportion of female SPU membership

	Observed Female Participation		Proportion	
	Unweighted (%)	Weighted, min (%)	Unweighted	Weighted
Overall	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Year				
2013	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
2014	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
2015	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
2016	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
2017	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Meeting				
Ann	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Fall	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Session type				
Moderator	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Invited Speaker	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Podium Presenter	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Moderated Poster Presenter	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001
Video Presenter	46.8 (29.1)	30.88 (21.3)	<0.001	<0.001

Poster #119

ISCHIOFAGUS FORM OF CONJOINED TWINS

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University of Florida, Department of Urology

Presented By: Paula Domino, MD

Introduction: Conjoined twins are monozygotic and monochorionic due to an incomplete splitting of the embryo around the second week of gestation. They are classified based on the specific site where they are joined as thoracopagus, pyopagus, ischiopagus, craniopagus, and omphalopagus. Incidence is 1 in up to 200,000 births with a 3:1 female to male ratio. Genitourinary anomalies are seen in ischiopagus types due to an anterior union of the pelvic rim and in pyopagus due to a posterior union of the sacrum and buttocks. Most published cases of ischiopagus conjoined twins have shown four kidneys, two bladders side by side and a ureter crossing the midline to the contralateral bladder as well as spinal cord anomalies.

Methods: A 25 year-old female presented to our institution with an intrauterine conjoined twin pregnancy at 30 weeks for postnatal management. Prenatal MR demonstrated Twin A to have a normal left kidney and a dysplastic right kidney. Twin B had a normal appearing left kidney and hydronephrotic right kidney. There was a solitary, shared bladder. Both twins survived planned induction cesarean section delivery at 36 weeks. Postnatal physical examination demonstrated an ischiopagus type of twinning with a fused perineum with a single anus and separate urogenital sinus.

Results: Planned separation of the twins occurred on postnatal day 1 as Twin B had complex congenital cardiac issues and was not expected to survive separation. A multidisciplinary team of surgeons performed separation of the twins, with Twin B expiring shortly after separation. Twin A was allocated the bladder with ureters from Twin B ligated proximal to the bladder. Twin A survived separation has done well following multiple surgeries.

Conclusion: Conjoined twinning is one of the rarest and most complex congenital malformations. The ischiopagus type, which can involve the genitourinary tract, is an uncommon form of conjoined twinning occurring in <10% of conjoined twins. Planning the timing of delivery and subsequent separation of conjoined twins requires a multidisciplinary team of providers and is made more complex in the setting of allocating and separating combined organs.

Poster #120

TEMPORIZING VESICOSTOMY HAS A MAJOR IMPACT IN PEDIATRIC PATIENTS WITH NEUROPATHIC BLADDERS

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Presented By: Ramphis Morales-Lopez, MD

Introduction: Vesicostomy has been a historically successful procedure for patients with lower urinary tract dysfunction. Even with diminished clinical use in recent years, there are still scenarios in which vesicostomy proves to be effective. We present our experience with temporizing vesicostomy utilization in a population with complex neuropathic bladder.

Methods: We performed a retrospective evaluation of all vesicostomies completed by a single surgeon in Puerto Rico from 2007 to 2018. Data collection included: underlying condition, age of procedure, and need for subsequent intervention. Emphasis was applied to pre vesicostomy and post vesicostomy imaging, urinary tract infection (UTI) development, and the indication for vesicostomy.

Results: 24 patients with vesicostomy were evaluated. Age at vesicostomy ranged from 3 days to 21 yrs. old (median 2 yrs.). In regards to diagnosis, 54.2% (n=13) had a history of myelomeningocele and neurogenic bladder (NGB), 16.67% (n=4) of patients had posterior urethral valves, 12.5% (n=3) of patients had bladder atony, there was 1 patient with Prune Belly Syndrome, 1 with bilateral megaureter, 1 with a cloacal anomaly and another with DiGeorge syndrome causing NGB. 54.2% (n=13) had documented febrile UTI of which 10 patients had documented recurrent events, and in all cases, there was no evidence of febrile UTI after vesicostomy. 100% of patients had a pre-vesicostomy ultrasound where 70.8% (n=17) had documented hydronephrosis with at least 8 patients showing severe hydronephrosis. 88.2% (n=15) had demonstrable improvement of hydronephrosis on post vesicostomy ultrasound with

only 1 patient showing no discernable improvement. When pre and post vesicostomy findings were compared, change in hydronephrosis (p-value=0.04) and UTI (p-value=0.001) had statistical significance. 29.2% of patients had subsequent vesicostomy takedown. The most common surgical indication was recurrent UTI, followed by worsening hydronephrosis and urinary retention. 3 cases resulted in vesicostomy because of social issues including unwillingness to perform catheterization.

Conclusion: Temporizing vesicostomy has a major impact in selected patients with neuropathic bladder. There is a significant decrease in febrile UTI and hydronephrosis in most patients. Vesicostomy can be an alternative for some patients with influential social factors that need genitourinary tract protection.

Poster #121

NEONATAL CIRCUMCISION TRENDS FROM A PEDIATRIC UROLOGIC PERSPECTIVE: RESULTS FROM A SURVEY OF MEMBERS OF THE SOCIETY OF PEDIATRIC UROLOGY

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Presented By: Heather Kraft

Introduction: Neonatal circumcision remains controversial, with rates varying over the years. Current CDC and AAP recommendations appear to favor circumcision. Although more commonly performed by non-urologic providers, pediatric urologists are often involved with pre-procedural or post-procedural concerns. Circumcision trends were evaluated as determined by pediatric urologists nationwide.

Methods: A 20 question survey was distributed to active candidates, affiliates and corresponding members of the Society of Pediatric Urology and completed anonymously via SurveyMonkey, an online survey tool. Analysis was performed comparing responders from each of four identified regions, as well as comparing responders from the Southern region to the rest of the United States.

Results: Two hundred and twenty-three surveys (37.2%) were returned, 33% (73) from the Southern region. Overall, 20.2% do not perform neonatal circumcisions, citing others in practice performing or time constraint as the primary reason. There was a statistically significant difference in years post-fellowship ($\chi^2=8.865$, $df=3$, $p=0.031$), patient age limit for performing neonatal circumcisions ($\chi^2=17.876$, $df=7$, $p=0.013$) and the primary circumcision provider in the region ($\chi^2=8.691$, $df=3$, $p=0.034$) when comparing the South to all other regions. Interestingly, there were not significant differences when comparing the South to other regions across any other metrics. Overall, there was a perception by over 60% of responders that parents/caretakers are not well counseled regarding the benefits and risks of circumcision, and most responders (73.5%) also believe that non-urologist circumcision providers are "trained/not well trained" rather than "very well trained/well trained." Furthermore, 27.8% of responders noted a perceived need for additional neonatal circumcision providers in their geographical area. (See Table 1).

Conclusion: There was slight variability in circumcision practices amongst pediatric urologists in the South compared to those from other regions, including patient age limit for performing neonatal circumcisions in pediatric urology practices, although overall, responses were consistent nationally. Opportunity exists to implement better educational resources for parents/caretakers in circumcision consultations and to improve training and education of non-urologic providers performing circumcisions. Consideration should be given by pediatric urologists, given their advanced skills, to educate and train pediatric providers to perform urologically advanced neonatal circumcision techniques in areas of geographical need.

Poster #123

POSTOPERATIVE OPIOID STORAGE AND DISPOSAL IN PEDIATRIC UROLOGIC SURGERY

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Presented By: Brandon Garren, MD

Introduction: We may be overlooking our most at-risk population in the now widely recognized opioid epidemic. As surgical providers and consequentially opioid prescribers, we are poised to impart potentially substantial short and long-term effects in our children. Our study examined post-operative opioid prescribing, usage, storage, and disposal practices in pediatric urology patients at a single institution.

Methods: Pediatric urology patients undergoing surgery associated with specified CPT codes were identified and post-procedure prescribing habits were obtained within our pharmacy database. Patients' guardians were contacted two weeks postoperatively via telephone to participate in a survey evaluating post-procedure opioid usage, storage, and disposal habits.

Results: Of the 117 charts reviewed, 67 patients participated in a telephone survey. 66 of 67 (99%) patients were prescribed postoperative opioids. The most common storage locations were medicine cabinets (N=20), kitchen cabinets (N=19), out in the open (N=4), a closet (N=1) and unspecified (N=13). Of the patients prescribed opioids, 41 (61%) had leftover opioid medication two weeks postoperatively. Thirty-two of 41 (78%) patients did not dispose of their leftover medication. Nine patients (22%) disposed of their medications by flushing down the toilet (N=1), pouring down the sink (N=5), throwing in the trash (N=2) or emptying into a designated opiate drop box (N=1). Only 13 patients received peri-operative counseling on appropriate storage and disposal of opiates.

Conclusion: 61% of patients did not use all of their prescribed opioid medication. Preliminary data by our institution shows similar results in adult urology and general pediatric patients, estimating 70-75% of patients having unused opioid medication post-operatively. Of the 41 pediatric urology patients, less than 20% were educated on proper storage and disposal and unsurprisingly a majority of the group improperly handled the medication, resulting in a large pool of unsecured medication within the pediatric family home. Through data-driven efforts to guide opioid prescribing and education, the supply of opioids available for misuse can be minimized.

Poster #124

PEDIATRIC AND RECONSTRUCTIVE UROLOGY CAMPAIGN IN EL SALVADOR: A GLOBAL HEALTH RESIDENCY TRAINING OPPORTUNITY

Elizabeth Wendel, MD¹, Kenneth Carney, MD, PharmD¹, Louis Perez, MD², Jonathan Kaye, MD³, Michelle Lightfoot, MD⁴, Lindsey Hartsell, MD¹, Anna Perez, RN⁵, Patricia Sabio, MA⁶, Edwin Smith, MD⁷

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Presented By: Elizabeth Chang Wendel, MD

Introduction: In 2018, the SEUA Residency Education Grant funded resident participation in a pediatric and reconstructive surgery international service trip to San Salvador, El Salvador. The trip took place for one-week in February. 2018 marked the 17th year of the trip. Outreach took place at the Hospital de Ninos Benjamin Bloom (Benjamin Bloom Children's Hospital) in San Salvador, the country's only public children's hospital. Objectives: Our primary objective was to describe the immediate impact of this trip by quantifying the patients seen in clinic and surgeries performed. Our secondary objective was to describe the impact on resident education in pediatric and reconstructive urology by comparing the case opportunities during the trip to the ACGME residency case log requirements for graduation.

Methods: A team of four attendings (from Children's Healthcare of Atlanta (CHOA), Grady Hospital, Children's Urology of the Carolinas, and Cook Children's Hospital), one fellow (CHOA-Emory), one PGY3 resident (Emory), one RN, and one MA spent a week in San Salvador treating pediatric urology patients. There was one clinic day and four OR days. We

recorded the numbers and types of surgery performed and compared them to the current ACGME urology residency case log requirements for graduation.

Results: In clinic, we saw 30 patients and 18 were scheduled for surgery. We performed seven hypospadias repairs, one penectomy with duplicated bladder removal and ureteral reimplant, three bladder augmentations, one total urogenital sinus mobilization, one second-stage bilateral orchiopexy, one bladder diverticulectomy with ureteral reimplant, one cystoscopy with open marsupialization of cecoureterocele, and one bilateral oophorectomy with hysterectomy and vaginectomy. From the surgeries performed in El Salvador, the residency pediatric requirement for "Major" cases was 47% fulfilled (7/15 cases required). The "Hypospadias" category requirement was completely fulfilled (7/5 total cases required) and the "Ureter" category requirement was 40% fulfilled (2/5 cases required). Under "Minor" pediatric cases, 10% of the "Orchiopexy" category requirement was fulfilled (1/10 cases required). Additionally, 37.5% of the "Reconstruction - Intestinal Diversion" category was fulfilled (3/8 cases required).

Conclusion: Beyond the beneficial impact to the local community and patients treated, global health service trips provide a unique and meaningful opportunity for resident training. Funding: SEAU Grant for Residency Education

Poster #125

ROBOTIC ASSISTED LAPAROSCOPIC VARICOCELE REPAIR FOR ADOLESCENT SCROTAL VARICOCELE: AN ANALYSIS OF TECHNIQUE AND SURGICAL OUTCOMES

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Presented By: Michael Tonzi, MD

Introduction: Laparoscopic ligation of the spermatic veins for the treatment of adolescent scrotal varicocele is widely performed. However, despite the wide spread application in many procedures in pediatric urology, robot-assisted laparoscopic varicocele repair (RALVx) has not been reported in the literature.

Methods: We provide a retrospective analysis of the patient characteristics, surgical technique and outcomes of a series of 29 children who had RALVx of scrotal varicocele by a single surgeon. We hypothesized that the surgical outcomes are the same as the historically reported open subinguinal and laparoscopic repairs.

Results: A total of 29 children had RALVx over a 6-year period. The mean age was 16.4 years. There were 26 left sided repairs and 3 bilateral repairs. Two RALVx were performed after initial failed percutaneous embolization procedure. All surgeries were technically successful without open conversion. Twenty three of the 29 procedures were artery sparing. All procedures were lymphatic sparing. Overall success was 27/29 (93.1%) with 1 patient having a percutaneous embolization for recurrent scrotal varicocele, and 1 patient observed for subclinical varix on ultrasound only. There were two Clavien II class complications. Median total operative time was 84 min (range = 63-112 minutes) and mean robotic console time was 38 min (range = 29-52 minutes). Mean pre-operative %left testicular volume differential was 25.4% with 22 of 29 (76%) of patients exhibiting catch-up growth with a mean volume increase of 14.5% over a mean of 22-months of follow-up. No patient developed post-operative hydrocele, nor was there any recorded testicular atrophy.

Conclusion: RALVx is feasible, safe, and effective with essentially equal surgical success to open and pure laparoscopic repair. However, compared to traditional open and laparoscopic repairs, RALVx has an improved outcome since there was no development of post-operative hydrocele.

Poster #126**DYSFUNCTIONAL ELIMINATION A MAJOR CAUSE OF CHILD ABUSE**

Steve Hodges, MD

Wake Forest University

Presented By: Parth Thakker, MD

Introduction: Teaching children how to use the bathroom is one of the largest causes for child abuse in the US. We propose that as pediatric urologists we have done a poor job educating parents of the causes of dysfunctional elimination, resulting in a poor understanding of the child's role in the disease process, with frequent instances of parental blame of children for incontinence episodes. We have anecdotally seen this misconception perpetrated by lay persons and physicians alike. We reviewed the news reports over a 5 year period to document the severity of this misconception and deficit in education.

Methods: Using the Google news search service over the past 5 years we searched for cases of child abuse related to difficultities with pediatric incontinence and/or potty training.

Results: We documented 10 cases of child murder over issues related to pediatric continence.

Conclusion: Any child abuse related to pediatric incontinence represents a failing on the part of the medical community to properly educate parents regarding the causes and reasons for dysfunctional elimination. The urologic community needs to adopt an aggressive program of community education regarding dysfunctional elimination.

Poster #127**TRENDS IN PATIENT POSITIONING FOR ROBOTIC PROSTATECTOMY: RESULTS FROM A SURVEY OF THE ENDOUROLOGICAL SOCIETY**George Wayne, MD¹, Jeffrey Wei, BS², Jorge Pereira, MD¹, Alan Nieder, MD¹, Akshay Bhandari, MD¹¹*Dept. of Urology, Mount Sinai Medical Center, Miami Beach, FL,* ²*Florida International University, College of Medicine*

Presented By: George Wayne, MD

Introduction: Most robotic assisted laparoscopic prostatectomy (RALP) procedures are performed with the patient in lithotomy position, which carries significant risk – of neuropathy, venous thrombosis, compartment syndrome, and possible anesthesia complication. As robotic surgery has entered the mainstream, newer models and greater freedom to trial novel techniques have allowed for supine positioning, potentially avoiding some of the pitfalls associated with lithotomy. We sought to gauge the current sentiment with respect to patient positioning among active robotic surgeons.

Methods: We surveyed members of the Endourological Society regarding their practice settings as well as their opinions of supine versus lithotomy positioning for robotic assisted laparoscopic prostatectomy. Summary statistics were reviewed and data was analyzed using chi-squared tests and t-tests.

Results: 94 surgeons elected to participate in our survey. The majority of respondents were fellowship trained, with 48% trained in robotics and 51% practicing in the U.S. At a mean 13 years of practice (Range 1-38 years), most were working in an Academic setting and performing at least 25 robotic prostatectomies yearly. 28% used the Intuitive Da Vinci Xi™ model regularly. Although 50% of respondents had considered using supine positioning, over 70% continued to utilize lithotomy position. A majority attributed this choice to their surgical team's familiarity with lithotomy positioning. Nominally, more respondents without a robotics fellowship (27% v. 13%) and with fewer than 25 yearly RALP cases (29% v. 18%) appeared to favor supine positioning, though this was not statistically significant. U.S. Surgeons and those using the Da Vinci Xi™ were more likely to have considered using supine position ($p < 0.05$).

Conclusion: Lithotomy position has been the standard for RALP procedures; nonetheless it poses significant risks to the patient and might be avoided with the ability of the Da Vinci Xi™ to side-dock and to allow for supine positioning. Our survey of mostly academic, experienced robotic surgeons suggests that, although supine positioning has been considered, it has not gained momentum in practice. Addressing factors of inertia in training practices and of one's surgical team might allow for novel, potentially safer approaches.

Poster #128

NERVE MONITORING DURING LAPAROSCOPIC PROSTATECTOMY LEADS TO DECREASED RISK OF UPPER EXTREMITY POSITIONING RELATED INJURIES

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Presented By: Michael Tonzi, MD

Introduction: Continuous intraoperative neuromonitoring, such as somatosensory evoked potentials (SSEP), is an effective method to detect peripheral nerve injury due to malpositioning during neurosurgical procedures. Robotic-assisted laparoscopic prostatectomy (RALP) requires steep Trendelenburg, which may predispose patients to upper extremity (UE) nerve injury. Our study used SSEP to decrease risk of UE neuropathic injury due to malpositioning and to identify clinical risk factors in patients with nerve changes.

Methods: SSEP data was collected using a Cadwell Pro following ulnar nerve stimulation and the N20 response was recorded. Established SSEP alarm criteria for intervention was used. Data between April 2016 and July 2018 was retrospectively reviewed to identify patients who satisfied intraoperative alarm criteria and analyzed using SPSS statistical software.

Results: Our cohort was composed of 14 of 157 patients (8.9%) who had at least a 50% reduction in SSEP amplitude, therefore meeting alarm criteria. Mean age was 62.9 (SE 2.3) and average BMI was 30.3 (SE 1.4). 76.9% had cardiovascular disease (CVD), 46.2% were current smokers and 30.8% were diabetic (DM). Mean operative time was 108.4 minutes (SE 9.4). Mean reduction in amplitude was 79.9% (SE 4.1), while average amplitude loss duration was 22 min (SE 4.0). A larger amplitude reduction was associated with a greater BMI ($r=0.82$, $p<0.001$), while a history of DM and longer operative time trended towards correlation ($r=0.43$, $p=0.14$ and $r=0.48$, $p=0.09$, respectively). Smoking history or CVD did not significantly correlate with amplitude loss ($r=0.24$, $p=0.15$ and $r=0.44$, $p=0.63$, respectively). Baseline amplitudes were recovered in 92.9% of patients following repositioning. One diabetic patient (BMI 42.3, 54 minutes amplitude loss) experienced transient postoperative UE weakness.

Conclusion: This study provides evidence that SSEP is effective for reducing risk of UE nerve injury due to malpositioning during RALP. Mean duration of amplitude loss was 22 min (SE 4.0), but risk of postoperative UE nerve injury was prevented in 92.9% of the cohort. Mean amplitude reduction was correlated to a greater BMI, DM and longer operative time ($r=0.82$, $p<0.001$; $r=0.43$, $p=0.14$ and $r=0.48$, $p=0.09$, respectively). High risk patients may benefit from pre-surgical selection for nerve monitoring and further analysis to preoperatively stratify patients for SSEP during RALP is currently ongoing.

Poster #129

DEVELOPING A PREDICTIVE NOMOGRAM FOR OPERATIVE DURATION IN ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY

Leslie Peard, MD¹, Adam Dugan², Andrew Harris, MD¹

¹University of Kentucky, Department of Urology, Lexington, KY, ²University of Kentucky, Department of Surgery, Lexington, KY

Presented By: Leslie McFann Peard, MD

Introduction: A paucity of data exists suggesting appropriate operative duration (OD) for robotic assisted laparoscopic prostatectomy (RALP). Existing data can be extrapolated from various studies noting operative duration based on limited variables. Defining suggested operative duration and factors contributing to operative duration may allow further understanding and examination of value as well as viable quality improvement objective. Our aim was to establish a predictive nomogram for OD in RALP through examination of 20 variables.

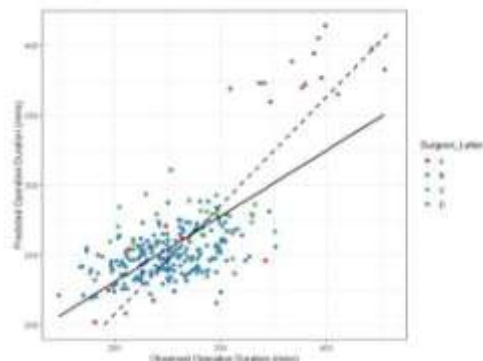
Methods: Our institution's National Surgical Quality Improvement (NSQIP) database was queried using CPT codes for RALP performed 2012-2017. 270 RALP were identified for analysis. An AIC-based stepwise elimination procedure was used to find a regression model most predictive of operative duration. The following were included as predictors in the full regression model: age, BMI group, inpatient/outpatient status, surgeon, diabetes, smoker,

dyspnea, COPD, hypertension, steroid, bleeding, wound class, ASA class of III or greater, sodium, BUN, creatinine, WBC, HCT, platelet count, and gland size.

Results: The stepwise elimination procedure resulted in the following predictors of operative duration: Age (add -12.44 to 2.2 minutes depending on age group), BMI (add 0 to 38.74 minutes pending the category), surgeon (add 0 to 143.98 minutes), hypertension (add -6.69 minutes), BUN (add -1.37 minutes), creatinine (add 26.95 minutes), gland size (add 0 to 40.27 minutes). Comparison of the actual and predicted operative times is shown in Figure 1. The standard deviation of the model's prediction error was 35.54 minutes.

Conclusion: The potential use for such nomograms is vast including scheduling, benchmarking, credentialing, and inclusion in various payment models.

Figure 1: A comparison of the actual and predicted operation times. The dashed line represents what "perfect prediction" would look like, while the solid line represents the least squares regression line. N = 270.



Poster #130

PREDICTORS OF SURVIVAL WITH RADICAL PROSTATECTOMY FOR CLINICALLY LOCALIZED PROSTATE CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE

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Presented By: Thomas Michael FitzGibbon, Jr., MD, MS

Introduction: The treatment of clinically localized prostate cancer (PCa) is evolving. Radical prostatectomy (RP) is still an important and common treatment for localized disease. In this study, we evaluate the factors that impact survival outcomes in patients undergoing RP for clinically localized PCa.

Methods: Using the National Cancer Database, we identified patients who underwent RP for clinically localized PCa (cT1-3, cN0/X, cM0). Patients were excluded if they had received preoperative hormonal therapy, prior radiation, or had PSA>50. We employed multivariate logistic regression to evaluate clinical factors associated with survival outcomes from RP and a multivariate Cox Proportional Hazards model was created (Table 1).

Results: We identified 232,758 patients who underwent RP for clinically localized PCa. The analysis found that increased Gleason score (HR 1.278, p<0.0001), African American race (HR 1.24, p<0.0001), locally advanced disease (HR 1.306, p 0.0089), Charlson/Deyo score (HR 1.553, p<0.0001) and Medicaid insurance (HR1.439, p 0.0031) were all associated with significantly worse survival. Treatment at an academic center (HR 0.87, p<0.0001), higher income (HR 0.885, p<0.0001), and private insurance (HR 0.74, p<0.0001) were associated with better survival. Pelvic lymph node dissection (PLND) was not significantly associated with increased survival (p 0.5391).

Conclusion: This study identifies the factors that impact survival for patients undergoing RP for localized PCa. Advanced disease (increased Gleason score, locally advanced), African

American race, and poorer socio-economic status were all associated with worse survival. By contrast, patients with a better socio-economic status and those treated at an academic center had improved survival. Interestingly, PLND was not associated with increased survival for clinically localized disease suggesting that perhaps better patient selection for PLND is needed.

Table 1: Cox regression analysis for survival outcomes in prostate cancer

Patient Characteristics	P value	Hazard Ratio
African American race	<0.0001	1.24
Treatment at academic center	<0.0001	0.87
PLND performed?	0.5391	0.976
Charlson/Deyo score	<0.0001	1.553
Median income, upper quartile	<0.0001	0.865
No high school education, lower quartile	0.0529	0.959
Distance from treatment center	0.0382	1
Locally advanced disease	0.0399	1.306
Private insurance	0.0304	0.74
Medicaid	0.0331	1.439
Medicare	0.8004	1.011
Age	<0.0001	1.044
Gleason score	<0.0001	1.278
PSA	<0.0001	1.006

Poster #131

DISEASE SEVERITY OF PROSTATE CANCER AT DIAGNOSIS IN UNINSURED AND LOW-INCOME PATIENTS

Kevin Morgan, Emily Kelly, Zachary Connelly, Kara Babaian

LSU Shreveport

Presented By: Kevin Morgan, MD

Introduction: According to Cancer Statistics 2018, the percentage of patients presenting with metastatic prostate cancer (PCa) decreased from 29% in 2001 through 2007 to 5% in 2007 through 2013. We sought to characterize the disease severity of patients diagnosed at our center and to compare disease characteristics between African Americans (AA) and Caucasians (CA).

Methods: After IRB approval, we performed a retrospective chart review of all patients who underwent a prostate biopsy (PBx) at LSU Shreveport between 2015 and 2017. Data collected included Age, BMI, race, PSA, PSA density (PSAD), prostate volume (PV), biopsy pathology, and T/M stage. PSAD was calculated by dividing PSA by PV. Overall cancer detection, Gleason score (GS), grade group (GG), AUA risk group, and M stage distribution were determined and compared between AA and CA.

Results: Of the entire cohort of 253 patients, 69.6% (n=176) were AA and 30.4% (n=77) were CA. The positive biopsy rate was 54.9% (n=139) in the entire cohort, and 59.1% (n=104) in AA and 45.5% (n=35) in CA (p=0.045, OR 1.73, 95% CI 1.01-2.97). Overall, 15.1% (21 of 139) presented with metastatic disease, including 12.5% for AA and 22.9% for CA. Excluding those with metastatic disease, patients with cancer had statistically significantly higher PSAs, smaller prostate volumes, and higher PSAD compared to patients with a negative PBx (all p values <0.0001), and this was also true among the AA and CA subgroups. However, these variables were not statistically different between AA and CA. Most patients with non-metastatic disease had a Gleason score (GS) of 3+4 or 4+3 (31.4% and 28.8%, respectively), and were unfavorable intermediate or high risk (30.5% and 32.2%, respectively). The distribution of GG, PSA, and risk groups did not differ between AA and CA.

Conclusion: In our cohort, AA were more likely to be diagnosed with PCa than CA, and >60% of patients were diagnosed with GG 2/3 or had unfavorable intermediate/high risk disease. It is unclear if the high percentage of patients who presented with metastatic disease (15%) at our institution is due to the 2012 USPTF recommendation against PSA screening, our patient population, and/or local socioeconomic factors. This discrepancy warrants further study.

Poster #132

BIOCHEMICAL RECURRENCE RATES AFTER CRYOABLATION OF THE PROSTATE: HOW DOES IT MEASURE UP?

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University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN

Presented By: Elizabeth Tourville, MD

Introduction: Cryoablation of the prostate (TCAP) is an alternative treatment option for patients with prostate cancer (CaP) who are poor surgical candidates secondary to medical comorbidities, previous history of pelvic radiation, or prior abdominal surgery. Although TCAP has been recognized as a treatment option for CaP for over 20 years, there is a paucity of studies pertaining to cryoablation outcomes. We analyzed our data to assess biochemical recurrence (BCR) rates of patients who underwent cryoablation at a single institution.

Methods: We retrospectively reviewed the records of 40 patients who underwent TCAP from 2015-2017 at the Memphis Veterans Affairs Medical Center. Data collected for analysis included demographic, clinical, pathological, and oncological information.

Results: 30 patients underwent TCAP as primary treatment for CaP over a 3-year period at a single institution. Of these patients, 20 (77%) were Black and 10 (23%) were White. The average age was 67 years old with a mean BMI of 29.61. Mean PSA at time of diagnosis was 9.12ng/ml. There were 7 patients (23%) who underwent neoadjuvant androgen deprivation therapy to decrease prostate volume. There were 7 patients (23%) with Gleason Score (GS) 6, 22 (74%) with GS 7, and 1 patient with GS 9 disease. Eight patients (27%) experienced BCR at a median of 17.25 months (1 with GS 6 and 7 with GS 7). None of these patients developed metastatic disease during follow-up of the study review period.

Conclusion: Our retrospective review demonstrated a 27% BCR rate among veterans who underwent primary TCAP. This is comparable to the national BCR rates of patients undergoing radical retropubic prostatectomy (RRP) or external beam radiation therapy (EBRT) which range from 20-40% and 30-50%, respectively, depending on the reference series. We believe that our data review has shed light on the undervalued utility of TCAP as a primary treatment modality in certain patient groups. Although our sample size was small, we believe our findings are significant when comparing national BCR rates of recurrence against post-RRP and post-EBRT patients. TCAP should not replace RRP or EBRT, but should be offered to patients who are at high risk for complications and prefer a minimally invasive, outpatient, and potentially curative option.

Poster #133

PROSTATE CANCER DIAGNOSIS WITHOUT TISSUE EXAMINATION, AND SUBSEQUENT HORMONAL TREATMENT IN THE UNITED STATES

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Presented By: Jason Chandrapal, MD

Introduction: Although tissue examination is the gold standard for diagnosing prostate cancer, transrectal ultrasound-guided biopsy can cause anxiety and morbidity. Several studies suggest that a non-tissue diagnosis based on prostate-specific antigen (PSA) testing with clinical observation and/or imaging, and subsequent hormonal therapy is reasonable in some men with comorbidities and/or very advanced age because of the strong association between high PSA and tumor burden. Because contemporary practice patterns for non-tissue-based diagnosis and subsequent hormonal treatment are unknown, we examined characteristics of patients with non-tissue diagnosis of prostate cancer and hormonal treatment in the United States.

Methods: We conducted a cross-sectional analysis of men aged 40-99 years, diagnosed with prostate cancer, and with a PSA of ≥ 20 ng/mL from 2010-2015 in the National Cancer Database. The outcome was diagnostic method – tissue examination or “other” (PSA, clinical observation and/or imaging). Independent variables were age, race, T category, M category, PSA level, and Charlson Comorbidity Index (CCI). To determine factors associated with non-tissue diagnosis and treatment of prostate cancer, we conducted bivariate and logistic regression analyses, stratified by receipt of hormonal therapy.

Results: Among 53,267 patients meeting inclusion criteria, 2.4% were diagnosed without a tissue specimen (1.7% of patients who did not receive hormone therapy and 2.8% of those who did). Associations of diagnostic method with independent variables were similar among men who did not receive hormonal therapy and those who did, so only data for those patients who received hormonal therapy are reported herein. In bivariate analyses, percentages of non-tissue diagnosis increased with age from 0.8% for men ages 40-49 to 21.7% for men ages 90-99 ($P<.001$), clinical T category (from 0.9% for cT1 to 7.4% for cT4, $P<.001$), clinical M category (from 0.5% for cM0 to 7.3% for cM1C, $P<.001$), CCI (from 2.5% for no comorbidities to 5.7% for 2 comorbidities, $P<.001$), and PSA level (from 0.8% for 20-29.9 to 6.7% for >97.9 ng/mL, $P<.001$). Multivariable logistic model results are shown in Table 1.

Conclusion: Diagnosis of prostate cancer and subsequent hormonal therapy without tissue examination is generally uncommon, but is not infrequent among men with characteristics such as advanced age, higher clinical stage, multiple comorbidities, and very high PSA.

Demographic Characteristics		Clinical Characteristics	
Age	OR (95% CI)	Clinical T	PSA
40-49	1 (ref)	T1	1 (ref)
50-59	1.79 (1.64, 1.95)	T2	30-39.9
60-69	2.17 (2.04, 2.30)	T3	40-59.9
70-79	4.37 (3.92, 4.94)	T4	60-79.9
80-89	11.45 (10.03, 13.03)	Clinical M	80-87.9
90-99	38.69 (36.58, 40.80)	M0	98+
Race/Eth		M1	CCI
White	1 (ref)	M2	0
Hispanic	0.57 (0.52, 0.63)	M3A	1 (ref)
Black	1.50 (1.35, 1.65)	M3B	1.18 (0.97, 1.42)
Asian	1.30 (0.80, 1.79)	M3C	1.48 (1.12, 1.98)
Other	1.11 (0.50, 2.48)	M3C	3+

OR = odds ratio, CI = confidence interval, Eth = ethnicity.

Poster #134
BIODEGRADABLE POLYMER-DELIVERED, SUBCUTANEOUSLY-ADMINISTERED LEUPROLIDE ACETATE CONSISTENTLY ACHIEVED LOW NADIR TESTOSTERONE LEVELS ≤ 5 NG/DL

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Presented By: Jason Chandrapal, MD

Introduction: In prostate cancer therapy, achieving and maintaining effective testosterone (T) suppression to the level attained with surgical castration is the cornerstone of androgen deprivation therapy (ADT). Increasing evidence suggests that reaching and sustaining the lowest T possible is desirable and correlated with disease-specific survival. To examine the effectiveness of biodegradable polymer-delivered, subcutaneously-administered leuprolide acetate (SC-LA) on T suppression, nadir T was evaluated in 4 pivotal trials spanning 4 dose intervals that last up to 6 months from a single injection.

Methods: Eugonadal prostate cancer (PCa) patients received either 7.5 (6 doses), or 22.5, 30, or 45mg (2 doses each) administrations of SC-LA lasting 1, 3, 4, or 6 months, respectively, in 4 open-label, fixed-dose, pivotal trials. Data were pooled, and serum T levels were evaluated by radioimmunoassay. T was measured 2-4 times on day 0 and once on days 1, 2, 3, 7, and every week until the next dose through the end of the studies; the 45mg group had an additional measurement taken on day 2. Nadir T was the lowest laboratory value obtained throughout the entire trial.

Results: Across the SC-LA formulations, median LA levels were consistently between 0.1 and 1ng/mL from week 2 until the end of the study. Across all doses (n=438), 90-96% of patients achieved $T \leq 20$ ng/dL by week 6 and maintained through week 24. Pooled analysis (n=437) showed 99%, 97%, 91%, and 80% of patients reached nadir $T \leq 20$ ng/dL, ≤ 10 ng/dL, ≤ 5 ng/dL, and ≤ 3 ng/dL, respectively, with a median nadir $T \leq 3$ ng/dL. When comparing across all doses, $>88\%$ of patients reached nadir $T \leq 5$ ng/dL. There were no serious treatment-related adverse events and no subjects discontinued treatment due to an adverse event.

Conclusion: Across all doses, SC-LA achieves consistent and prolonged serum LA drug delivery above 0.1ng/mL and provides favorable T suppression below 20ng/dL, which may be attributed to the biodegradable polymer delivery system. Multiple T measurements throughout the study confirmed that 91% of PCa patients achieved low nadir $T \leq 5$ ng/dL, which may have

implications for extending progression-free survival and duration of response to ADT.
Funding: Study was funded by Tolmar, Inc.

Poster #135 – WITHDRAWN

Poster #136

DOES NUMBER OF LYMPH NODES REMOVED IMPACT SURVIVAL IN PATIENTS WITH MUSCLE INVASIVE BLADDER CANCER UNDERGOING RADICAL CYSTECTOMY? A NATIONAL CANCER DATABASE ANALYSIS

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¹Department of Urology, University of Louisville School of Medicine, Louisville, KY, ²Department of Cardiovascular and Thoracic Surgery, University of Louisville School of Medicine, Louisville, KY
Presented By: Samarpit Rai, MD

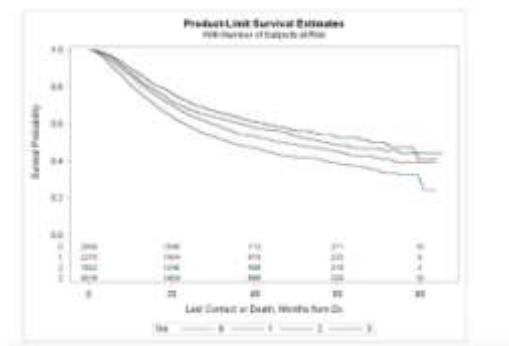
Introduction: Pelvic lymph node dissection (PLND) is an integral part of radical cystectomy (RC) for localized muscle invasive bladder cancer (MIBC). About 25% of patients have nodal disease at the time of surgery. However, there is controversy regarding the impact of the number of lymph nodes (LNs) removed during RC on overall survival in patients with MIBC. The aim of the study was to evaluate the impact of the number of LNs removed on survival in patients undergoing RC.

Methods: Using the National Cancer Database, we identified adult patients undergoing RC for MIBC between the years 2010 and 2015. Patients were then grouped into quartiles based on the number of LNs removed during RC (<8, 8-14, 15-22, >22). Kruskal-Wallis and chi-squared tests were used to compare continuous and categorical variables between the groups, respectively. A cox regression model was created to identify factors associated with survival. Kaplan-Meier curves were generated to compare the survival based on the number of LNs removed.

Results: Among 10,897 patients who underwent RC, the median number of LNs removed was 15. The patients in the highest quartile of number of lymph nodes removed were younger ($p < 0.0001$), had fewer co-morbidities ($p = 0.003$), and were more likely to undergo RC at an academic center ($p < 0.0001$). On cox regression analysis, removal of >22 LNs (vs. <8) was an independent predictor of improved survival (HR = 0.69, $p < 0.0001$). In PLND groups <8, 8-14, 15-22, and >22, the 3-year survival rates were 49%, 55%, 60% and 64% respectively ($p < 0.0001$, Figure 1).

Conclusion: Increasing the number of pelvic lymph nodes removed during radical cystectomy for muscle invasive bladder cancer is associated with improved survival postoperatively. This may act as a surrogate marker for the extent of PLND performed during RC.

Figure 1 Kaplan-Meier curves for survival by different PLND groups. Blue = <8; Red = 8-14; Green = 15-22; Brown = >22



Poster #137

**DISCORDANT DRUG APPROVALS BETWEEN EUROPE (EMA) AND THE USA (FDA):
THE CASE OF VINFLUNINE FOR BLADDER CANCER**

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Duke University

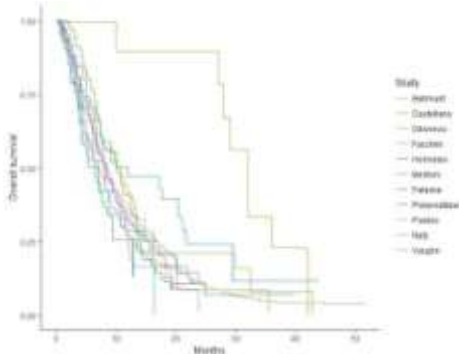
Presented By: Steven Craig Brousell, MD

Introduction: Vinflunine (VIN) is not FDA-approved for advanced urothelial carcinoma (UC) but is EMA-approved in Europe. Which agency is right? This systematic review and meta-analysis summarizes the data supporting the use of VIN in UC.

Methods: This PROSPERO registered systematic review (CRD42016049294) searched MEDLINE®, Embase®, the Cochrane Central Register of Controlled Trials and Web of Science through December 2016 for all manuscripts pertaining to VIN and UC. We performed a meta-analysis of the data with the co-primary outcomes of progression-free survival (PFS) and overall survival (OS). Secondary outcomes were analyzed including treatment response rates and toxicity. PFS and OS plots were digitally extracted from studies and pooled to arrive at consensus survival curves. Fixed and random effects models were built using arcsine-transformed proportions. Forest plots and pooled survival curves were created.

Results: We identified 382 publications, 35 of which (representing 29 unique studies) met inclusion criteria. A total of 2,255 patients with advanced bladder cancer received VIN and the random-effects measured proportion of complete response was 1%, partial response was 18%, and the overall response rate of 21%. Survival curves for PFS and OS (**Figure**) were similar across studies. Toxicity analysis revealed fatigue (40.1%), nausea (33.9%), constipation (34.1%), and alopecia (26.0%) as the most prevalent non-hematologic adverse events (AEs). Most prevalent grade 3-4 AE's were fatigue (10.2%), abdominal pain (8.2%), myalgias (2.5%), and nausea (2.3%). Most common hematologic AEs were anemia (56.6%), neutropenia (46.0%), thrombocytopenia (25.5%), febrile neutropenia (6.6%). Grade 3-4 hematologic AEs were neutropenia (24.6%), anemia (10.2%), febrile neutropenia (5.4%), and thrombocytopenia (3.0%).

Conclusion: VIN has been explored in 1st line combinations as well as in 2nd and 3rd line as a single in advanced UC. While checkpoint inhibitors appear superior to VIN in 2nd line (IMvigor211 and Keynote-045), the VIN response rates, survival and toxicity appear similar or better to other 3rd line options, such as taxanes.



INITIAL EXPERIENCE OF SINGLE SURGEON IMPLEMENTATION OF TRANSVERSE ABDOMINIS PLANE (TAP) BLOCKS DURING CYSTECTOMY IN A DEDICATED ENHANCED RECOVERY AFTER SURGERY (ERAS) PROGRAM

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Introduction: Our institution is the only U.S. Center of Excellence in the International ERAS Society. A key component of ERAS is a multimodal postoperative pain regimen that includes use of patient-controlled analgesia (PCA) until POD 1 as well as intravenous and oral narcotics on an as needed basis. With awareness of the current opioid epidemic and negative implications of unnecessary postoperative opioid use, we continue to explore new methods for pain control. We describe our initial single surgeon experience with TAP block implementation in cystectomy patients to evaluate postoperative narcotic consumption and key patient outcomes.

Methods: From 2/1/2017-4/16/2018, a single surgeon performed 34 ERAS-protocol cystectomies without use of an intraoperative TAP block ("pre-cohort"). From 4/17/2018-9/11/2018, the same surgeon performed 9 cystectomies with implementation of an intraoperative TAP block ("post-cohort"). In these patients, bupivacaine liposome injectable suspension (Exparel®, 133mg/60ml saline solution) was systematically administered at the lateral border of the rectus muscle bilaterally at three locations under direct intraperitoneal visualization in the plane between the internal oblique and transversus abdominis muscles. Daily post-cohort opioid consumption was prospectively collected and compared to pre-cohort consumption after conversion of all intravenous and oral narcotic use to a morphine equivalent daily dose (MEDD, mg). Median two sample tests were used for evaluation of continuous outcomes including length of stay, and POD 1-3 narcotic usage and pain scores.

Results: Time (nights) to pain control exclusively with oral analgesics was shorter in post-cohort patients (3 v. 2 in pre- v. post-cohorts, respectively, $p<.001$). Trends in median time (nights) to first postoperative bowel movement (3 v. 2, $p=.111$), median length (days) of stay (6 v. 4, $p=.077$), median POD 1 pain scores (4.3 v. 4.2, $p=.764$) and total median MEDD (mg) on POD 1 (11.7 v. 9.3, $p=.301$) in pre- and post-cohorts, respectively, favored post-cohort patients, though these differences were not significant.

Conclusion: Outcomes of a single surgeon's initial experience with intraoperative TAP blocks in cystectomy ERAS patients show less time to pain control and trends in improvements in return of bowel function, LOS, pain scores and immediate postoperative narcotic consumption. Future work will further evaluate narcotic consumption and outcomes in a larger cohort of patients.

270

Poster #139**INTRATHECAL HYDROMORPHONE IN CYSTECTOMY PATIENTS: A NOVEL CONCEPT TO REDUCE OR ELIMINATE POST-OPERATIVE NARCOTIC ANALGESIC USE**

John Moore, Ryan Peacock, David Hodge, Kaitlynn Custer, Jordan Cochuyt, Paul Young

Mayo Clinic Florida

Presented By: John R. Moore, MD

Introduction: The reduction of narcotic use in post-operative patients is quickly becoming a priority. Intrathecal hydromorphone (IH) is a novel concept to prevent the necessity for significant post-operative narcotic use. No publications have evaluated the use of IH in the urologic patient population. We evaluated patients undergoing cystectomy to determine whether intrathecal hydromorphone can alleviate or minimize the need for post-operative narcotic analgesics.

Methods: A retrospective study was performed of all patients undergoing cystectomy with enhanced recovery pathway between the dates of December 2016 to June 2018. All cases were performed at a single institution with a single surgeon. Patients were excluded from the study if they did not qualify for enhanced recovery pathway or were on chronic narcotic pain medications. Patients were offered to receive IH prior to the operation (one time dose of 0.1 mg delivered via an intrathecal catheter). Charts were then retrospectively reviewed to evaluate the oral morphine equivalents of patients that received IH vs. those patients that did not. Further analysis was obtained to compare OME to disease state and surgical approach.

Results: A total of 59 patients met inclusion criteria. Of these patients, 48 received IM while 11 did not. Comparative OME for the two groups showed a median narcotic use of 31.6(0 - 385) OME for the IH group vs. 235 (30 - 328) OME for the non-intrathecal hydromorphone (NIH) group (p 0.0023). 27% of patients in the IH group received 0 OME. 40% of patients in the IH group received less than 10 OME. None of the following parameters were found to be statistically significant in changing OME: Robotic vs. Open (p 0.3957), Nodal positive disease vs. negative (p 0.7055), Bladder confined disease vs. extravesical disease (p 0.933). Zero complications were experienced with the administration of IH.

Conclusion: Intrathecal hydromorphone can significantly reduce or eliminate the need for narcotic pain medication in patients undergoing cystectomy. This reduction in narcotic use is independent of disease status or operative approach.

Poster #140**POST-OPERATIVE NARCOTIC PRESCRIBING PATTERNS FOR PATIENTS UNDERGOING RADICAL CYSTECTOMY**

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Daniel Barocas, Matthew Resnick

Vanderbilt University Medical Center

Presented By: Elizabeth Green, MD

Introduction: Narcotic use is a growing public health concern and recent guidelines have been proposed to guide post-operative prescribing behavior. The aim of this study was to characterize post-operative narcotic prescribing patterns for patients undergoing radical cystectomy at a single quaternary care referral center.

Methods: We performed a retrospective cohort study comprising all patients residing in Tennessee or contiguous states who underwent radical cystectomy at a single institution from January 2013 to August 2015. Controlled substances data were obtained from the Tennessee Controlled Substances Medication Database from 1 year prior to surgery through 1 year after surgery and linked to clinical and demographic data abstracted from the medical record.

Results: 267 patients underwent radical cystectomy with 134 (50%) patients filling a prescription for a narcotic in the year prior to surgery and 183 (69%) patients filling a narcotic prescription in the year following surgery. The mean total filled morphine equivalent dose (MED) in the 30 days following surgery was 585.46 ± 761.5 mg (table 1), median 450mg (IQR 300-600mg). Therefore, the median narcotic dose was more than twice the proposed 200mg MED limit on discharge prescriptions for acute post-operative pain. 41 patients filled a second prescription for a narcotic within 30 days, a refill rate of 15.4%. Compared to the patients who did not require a refill, these patients were more likely to have been taking narcotics in the pre-operative period(43.3% vs 87.8%, P<0.001). Of the 41 patients who required a narcotic refill, 36 patients were on pre-operative narcotics and of the remaining 5 who were not, 3 had a high

grade complication and one patient had metastatic disease at the time of surgery. Therefore, of the 267 patients who underwent radical cystectomy, only 1 opioid naïve, non-metastatic patient without a high grade complication required an additional prescription for a narcotic within one month of surgery.

Conclusion: Overprescription of opioid analgesics is common in the postoperative period. Multi-faceted improvement programs must be implemented to address the downstream public health implications of opioid overprescription around the time of surgery.

Pre-Operative Characteristics	Mean ± SD or Number (%)	Post-Operative Characteristics	Mean ± SD or Number (%)
30 Days Prior to Radical Cystectomy		30 Days After Radical Cystectomy	
Patients with Narcotic Prescription	42 (15.7%)	Patients with Narcotic Prescription	167 (62.8%)
Patients with ≥1 narcotic prescriber	13 (4.9%)	Patients with ≥1 narcotic prescriber	41 (15.4%)
Morphine Equivalent Dose	187.8 ± 757.8	Morphine Equivalent Dose	685.46 ± 781.5
90 Days Prior to Radical Cystectomy		90 Days After Radical Cystectomy	
Patients with Narcotic Prescription	83 (31.4%)	Patients with Narcotic Prescription	175 (65.7%)
Patients with ≥1 Narcotic Prescriber	46 (18.3%)	Patients with ≥1 Narcotic Prescriber	68 (25.1%)
Morphine Equivalent Dose	890.1 ± 2216.4	Morphine Equivalent Dose	712.2 ± 1916.1
1 Year Prior to Radical Cystectomy		1 Year After Radical Cystectomy	
Patients with Narcotic Prescription	134 (50.2%)	Patients with Narcotic Prescription	183 (68%)
Morphine Equivalent Dose	1701.8 ± 8157.4	Morphine Equivalent Dose	2686.2 ± 10729.6
Number of Prescribers	1.1 ± 1.6	Number of Prescribers	1.4 ± 1.8

Table 1. Pre and Post operative opioid prescription characteristics in patients undergoing radical cystectomy.

Poster #141
STATISTICAL INFERENCE FOR CLINICAL UTILITY OF BIOMARKERS AT CONTROLLED SENSITIVITY

Yijian Huang¹, Isaac Parakati², Martin Sanda¹
¹Emory University, ²Lurie Children's Hospital in Chicago
Presented By: Yijian Huang, PhD

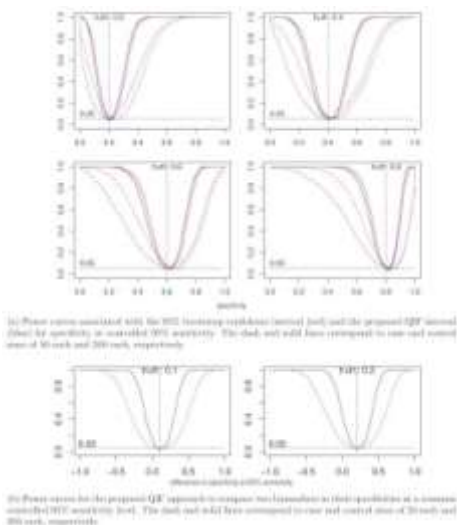
Introduction: To aid in clinical decisions, a continuous biomarker-based medical test is typically intended to operate at a controlled level of sensitivity (or specificity). Accordingly, specificity at the controlled sensitivity level (or vice versa) is clinically more meaningful and sensible than, e.g., area under the ROC curve. As an example, in aggressive prostate cancer screening, capturing almost all true positives is a priority and thus specificity at sensitivity of at least, say, 95% provides a desirable utility measure of a biomarker. However, its usage in biomarker research has been hampered by technical difficulties in the statistical inference.

Methods: We developed novel inference procedures for (i) confidence interval construction with a single biomarker and (ii) comparison of two biomarkers, with respect to specificity at a controlled sensitivity level. For the former, we proposed a method based on quadratic inference function (QIF) and compared with existing methods in simulation studies. The latter circumstance involved statistical comparison of two biomarkers in their specificities at a common controlled sensitivity level. The QIF approach was extended for this purpose and evaluated through simulations. These methods were applied to a cohort of 512 men undergoing their initial prostate biopsies in a study to evaluate biomarkers for the detection of aggressive prostate cancer, i.e., Gleason score ≥ 7.

Results: In both circumstances, the proposed confidence intervals achieved coverage probabilities reasonably close to the nominal level, with slight conservativeness, in the simulation studies with sample sizes for cases and controls ranging from 50 to 200. In the analysis of the initial prostate biopsy cohort with 155 cases and 357 controls, the specificities at controlled 95% sensitivity for serum biomarker prostate health index (phi) and urine biomarker PCA3 were estimated to be 0.246 (95% CI: 0.159 – 0.402) and 0.174 (95% CI: 0.058 – 0.317), respectively, with their difference being 0.073 (95% CI: -0.079 – 0.267).

Conclusion: The developed inference methods for specificity at a controlled sensitivity level had satisfactory performance for practical use. They facilitate more direct evaluation of clinical utility of biomarkers.

Funding: NCI Early Detection Research Network U01 CA113913



Poster #142

EFFECT OF HIGHLY-ALIGNED NANOSCALE SURFACE STRUCTURES ON MICROBIAL ADHESION

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¹Penn, ²Virginia Tech, ³PH USC MG, ⁴Virginia tech, ⁵Virginia Tech

Presented By: Timothy David Averch, MD, FACS

Introduction: Catheter-associated urinary tract infection (CAUTI) is one of the most common care-associated infections around the world. The catheter surface is an ideal milieu for microbial attachment and biofilm formation. Bacterial attachment depends not only on the chemical properties of the catheter material but also on the size, shape and spacing of the micro/nanoscale topographical features on the surface of catheters. Changing the topography of the surface using well-defined periodic nanoscale surface features is a novel method to prevent biofilm formation. To investigate the role of aligned nanofiber-coating on retention of the most common fungal and bacteria uropathogenic organism, *Candida albicans* and *Escherichia coli*.

Methods: Spinneret-based tunable engineered parameters (STEP) technique was used to deposit highly aligned polystyrene fibers of uniform diameter and spacing. Surface architectures were varied by changing nanofiber diameter and spacing on flat polystyrene substrata and on the surface of latex, polyurethane, and silicone catheters. Dynamic retention assays were carried out and microbial attachment density on engineered surfaces was compared to the unmodified polystyrene surfaces, using colony counting, fluorescent microscopy, and image processing. Short-term and long-term effects of the introduction of an anti-adhesion biocompatible chemical coating were also studied.

Results: The fiber diameters were divided into three different groups ($D_{\text{fiber}}/D_{\text{cell}} = 0.12-0.24$, $0.24-0.36$, and $0.36-0.48$), and the normalized cell attachment densities were averaged in each group. Figure 1 depicts the difference in the average normalized cell attachment of *C. albicans* density for the three groups, which is statistically significant.

Fluorescent microscopy images (Figure 2) of coated and uncoated stents showed the extent of cell attachment of *E. coli* density on the unmodified surface, and $0.3 \mu\text{m}$ fiber-coated surface ($D_{\text{fiber}}/D_{\text{cell}} = 3.3$). On the other hand, coating stents with Pluronic F108 resulted in significant decrease in cell attachment of *E. coli* density.

Conclusion: Our experiment showed that the surface texture that reduces *C. albicans* attachment by as much as 70% has no effect on Uropathogenic *E. coli* (UPEC) attachment. Pluronic coating decreases bacterial attachment by 80%.

Poster #143**CYTOKINE ANALYSIS OF PLATELET RICH PLASMA FOR USE IN UROLOGIC THERAPEUTICS**Ethan Matz, MD¹, Trent VanHorn¹, Steve Walker, PhD², John Jackson, PhD², Ryan Terlecki, MD³¹Wake Forest School of Medicine, ²Wake Forest Institute for Regenerative Medicine, ³Wake Forest Baptist Medical Center

Presented By: Ethan Matz, MD

Introduction: Platelet rich plasma (PRP) is a novel therapeutic that is increasingly utilized in a multidisciplinary manner. PRP is a concentration of platelets from whole blood using a variety of proprietary separator gel systems. The prevailing theories of the use of these products suggest that there is an increase in the trophic factors and a delivery system that decreases local wash out. Previous small scale data has been published that demonstrates the milieu of factors present from a variety different proprietary systems. We aimed to elucidate the total cytokine make up of PRP using a single proprietary system.

Methods: Whole blood was taken using standard technique into either 11 or 22cc PRP tubes from Eclipse Aesthetics (The Colony, Texas). Basic donor information was documented. Tubes were spun in the proprietary centrifuge until separated. Concentrated PRP (the platelet layer mixed with a minority of the platelet poor layer) was immediately sent for 200 Human Biomarker Testing (Ray Biotech, Norcross, Georgia).

Results: The ten highest factors and their primary roles are demonstrated in the table below. Additionally, heat maps and principal component analysis show differences in trophic factor makeup between the smaller (11cc) and larger (22cc) tubes. Some differences also exist in the cytokine makeup for male and female donors.

Conclusion: The majority of the most concentrated trophic factors are growth factors and cell adhesion molecules which would correlate with presumed mechanism of action of PRP. However, angiogenesis inhibitors are overrepresented in the above list. Importantly, there is variation among the size of collection tube. It would stand to reason that some variation exists among individual patient characteristics including sex. There is little literature to suggest the efficacy of PRP, although some safety literature from this group is available. More research is necessary before classification of this product is complete.

Funding: Eclipse Aesthetics

11cc Tubes		22cc Tubes	
IGFBP-4	Growth Factor	VCAM-1	Cell Adhesion
VCAM-1	Cell Adhesion	IGFBP-4	Growth Factor
	Angiogenesis inhibitor		Angiogenesis inhibitor
Angiostatin		Angiostatin	
ICAM-2	Cell Adhesion	L-Selectin	Cell Adhesion
L-Selectin	Cell Adhesion	IGFBP-3	Growth Factor
IGFBP-3	Growth Factor	ICAM-2	Cell Adhesion
IGFBP-6	Growth Factor	IGFBP-6	Growth Factor
Stat3c-5	Anti-inflammatory	TGFb1	Cell Proliferation
TGFb1	Cell Proliferation	gp130	Signal transduction
gp130	Signal Transduction	ICAM-1	Cell Adhesion
ICAM-1	Proinflammatory	ANG-1	Angiogenesis

Poster #144
USE OF INFORMATICS FOR INTEGRATING BIOLOGY AND THE BEDSIDE, I2B2: TO DETERMINE THE PREVALENCE OF HYDRONEPHROSIS AND KIDNEY INJURY IN BENIGN PROSTATIC HYPERTROPHY

Ryan Joseph¹, Victoria Bird, MD²
¹University of Florida School of Medicine, ²NMARG, Division of Urology
Presented By: Ryan Joseph

Introduction: Deidentified large data cohorts from the Electronic Medical Record (EMR) available via graphic software as I2B2, was queried to determine the prevalence of Benign Prostatic Hyperplasia (BPH) and further analyze the occurrence of hydronephrosis, Acute Kidney Injury (AKI), and hemodialysis in this cohort. Geospatial mapping was done to determine hot spots of this population for future programmatic mapping and targeted interventions.

Methods: We used the I2B2 database, product of an NIH-funded National Center for Biomedical Computing based at Partners Health Care System in Boston Massachusetts General Hospital (MGH). This informatic framework allowed our research to bridge clinical deidentified data banks. We used the application within the I2B2 infrastructure for query to obtain our retrospective data including subjects with ICD-9-10 codes for our targeted diagnosis of BPH, Hydronephrosis, AKI and hemodialysis (Figure1a). Differential sequential time frames of these diagnoses were used to provide diagnosis exclusively related to BPH. Data was stratified by age cohorts. Statistical analysis was performed using Excel vr. 1807, and geospatial mapping was performed with © GeoNames, MSFT, Navteq, powered by Bing.

Results: A total of 1,002,357 patients were include in the I2B2 query from 2011 to 2017 at a tertiary care center in North Florida. The prevalence of BPH increased sequentially with age, from 1.8% in the 45 to 54 years old to 10.9% (figure 1b) in those over 85 years of old. The prevalence of AKI, and Hydronephrosis in the BPH cohort was in 0.061% in the 45 to 54-year-old and 0.38% in the above 85 years of age (figure 1c). The prevalence of hemodialysis associated with hydronephrosis and AKI in the BPH cohort was present only in those over 65 years of age (0.014-0.016%). The highest prevalence of BPH differed in zoning compared to the prevalence of hydronephrosis and AKI (figure 1d). BPH with hydronephrosis, AKI and hemodialysis were found in the zip codes belonging to the lowest socioeconomic status.

Conclusion: BPH is a prevalent in the aging male, while obstructive BPH can be associated with hydronephrosis, AKI and hemodialysis, it is a rare occurrence. Hemodialysis secondary to pathological obstructive BPH was observed in the geographic areas with the lowest socioeconomic status.

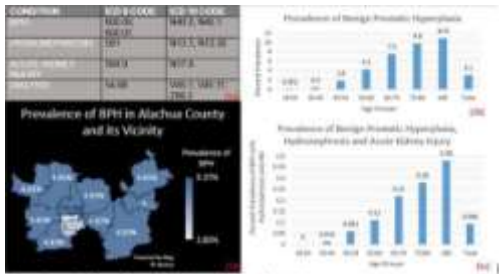


Figure 1: Spread of Renal Diseases by Age and Geospatial Location
(a). Table of ICD-9 and ICD-10 codes
(b). Prevalence of Benign Prostatic Hyperplasia in UF Health System
(c). Prevalence of Benign Prostatic Hyperplasia, Hydronephrosis, and Acute Kidney Injury in UF Health System
(d). Prevalence of BPH in Alachua County and its Vicinity

Poster #145

PERIOPERATIVE OUTCOMES OF OPEN VERSUS MINIMALLY-INVASIVE SIMPLE PROSTATECTOMY: AN ANALYSIS OF THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

Adnan Dervishi, MD, Samarjit Rai, MD, Paul Knoll, MD, Jamie Messer, MD, Murali Ankem, MD, Ahmed Haddad, MD

University of Louisville School of Medicine, Department of Urology, Louisville, KY

Presented By: Adnan Dervishi, MD

Introduction: Simple prostatectomy (SP) is reserved for patients with lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH) with a prostate volume > 80 mL, with or without large bladder diverticula or bladder stones. The purpose of this research is to evaluate and compare the perioperative morbidity of open simple prostatectomy (OSP) and minimally invasive simple prostatectomy (MISP) using data from the National Surgical Quality Improvement Program (NSQIP) database.

Methods: NSQIP database was used to identify men that underwent OSP and MISP for BPH from 2011 to 2016. ICD-9 and 10 codes were used to identify cases with the diagnosis of BPH. CPT codes were used for identification of cases that underwent OSP and MISP. Associations of the surgical approach with 30-day morbidity, length of hospital stay, and operative time were evaluated.

Results: A total of 1,143 patients underwent SP; OSP = 891, and MISP = 252. A higher rate of bleeding related transfusions was identified in open SP vs MISP (17.8% vs 3.6%, $p < .001$). On multivariate analysis, MISP was found to have an odds ratio (OR) of .122 ($p < .001$) with OPS as reference. Longer hospital stay was associated with open SP (mean = 3.90 vs 2.48 days, $p < .001$). Shorter operative time was associated with open SP vs MISP (mean = 115 vs 180 min, $p < .001$). There was no difference in readmission rate ($p = .67$), postoperative DVT, or wound infections.

Conclusion: Our findings suggest that bleeding complications requiring transfusions are more common in OSP. Increasing utilization of MISP, in patients who are appropriate candidates and elect to undergo SP, may reduce the length of total hospital stay, and the need for perioperative blood transfusion.

Poster #146

WORK RELATIVE UNITS IN UROLOGY: CHANGES FROM 2006-2016

Zoe Gan¹, Case Wood, MD², Angela Smith, MD², Raj Pruthi, MD², Solomon Hayon, MD¹

¹University of North Carolina at Chapel Hill School of Medicine, ²Department of Urology, University of North Carolina at Chapel Hill

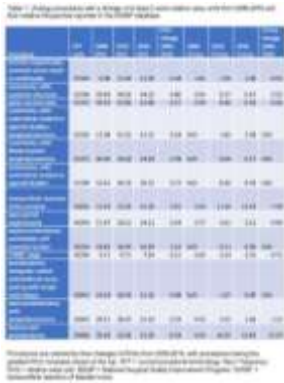
Presented By: Solomon Hayon, MD

Introduction: Physician work relative value units (RVUs) have changed for several services across specialties since their adoption in 1992. Our primary objective was to identify common urologic procedures with the greatest changes in work RVU values over a recent ten-year period. Our secondary objective was to observe how RVU changes for these procedures relate to how often they are performed compared to other procedures.

Methods: We examined the 2006, 2012, and 2016 American College of Surgeons National Surgical Quality Improvement Program (NSQIP) databases to select 56 current procedural terminology (CPT) codes representing the spectrum of urologic surgery, their corresponding work RVU values, and their annual case numbers. Procedures with a change of at least 2 work RVUs from 2006-2016 were identified. For these procedures, we calculated relative case frequency, or the number of cases coded as a specific CPT code as a proportion of all cases for the selected 56 codes, for each of the 3 years.

Results: From 2006-2016, several urology procedures gained at least 2 work RVUs (range 3.72-5.44 RVUs), including anterior colporrhaphy, pelvic exenteration, transurethral resection of the prostate (TURP), and cystectomies. These changes occurred in the first half of the observed period, from 2006-2012. Their relative case frequencies remained stable, except for TURP, which had a 7.8% increase during this time (work RVUs have since decreased by 2.10). Procedures that lost at least 2 work RVUs were prostatectomies, particularly laparoscopic (robotic) prostatectomy (-9.33 RVUs), and transurethral resection of large bladder tumor (-2.21 RVUs). These changes largely occurred from 2012-2016. For laparoscopic prostatectomy, a 15.4% increase in relative case frequency from 2006-2012 was followed by a 10.7 work RVU

Conclusion: Several urology procedures have gained work RVUs over a recent 10 year period, largely attributable to changes during the first half of this period. The latter half largely saw work RVU decreases in a few urology procedures, especially laparoscopic prostatectomy. Based on trends for laparoscopic prostatectomy and TURP, increasing how frequently a procedure is performed relative to other procedures may be related to a subsequent decrease in work RVUs. Funding: ABS is funded by the Patient-Centered Outcomes Research Institute and the Agency for Healthcare Research and Quality.



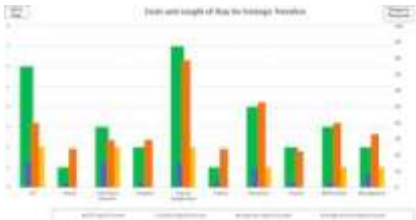
FURTHER ANALAYSIS OF UROLOGIC PATIENTS TRANSFERRED TO A TERTIARY CARE CENTER OVER A 2 YEAR PERIOD HIGHLIGHTS SERIOUS AND POSSIBLY UNNCECESSARY COST BURDEN IN HEALTHCARE

Presented By: Marilyn K. Hopkins, MD

Results: 483 patients were transferred to our institution for urologic care during the study period. Regarding nephrolithiasis, the median charges and LOS for those undergoing a procedure was \$24,311 and 1 day, compared to \$2,744 and 0 days for those without a procedure. UTI patients undergoing a procedure, \$39,905 and 6 days, compared to \$16,493 and 2 days. Soft tissue infection undergoing surgery, \$29,515 and 3 days, compared to \$16,103 and 2 days. Priapism patients undergoing a procedure, \$29,515 and 2 days, compared to \$2927 and 0 days. Post-operative complications undergoing surgery, \$79,256 and 7 days, compared to \$16,178 and 2 days. Torsion undergoing surgery, \$24,119 and 1 day, compared to \$3,844 and 0 days. Hematuria undergoing surgery, \$52,883 and 4 days, compared to \$11,734 and 1 day. For trauma undergoing surgery, \$22,664 and 2 days, compared to \$3,440 and 0 days. Retention patients undergoing surgery, \$39,961 and 3 days, compared to \$3,335 and 1 day. Miscellaneous undergoing surgery, \$33,186 and 2 days, compared to \$8,401 and 1 day. See Figure 1.

Conclusion: Here, we provide a description of costs incurred for transferred patients over a 2

year period. Many of these patients did not undergo surgery or require admission. However, there were still significant costs associated with these transfers, which may be unnecessary. Collaborative care networks and spoke and hub models have the potential to mitigate this cost and increase value for these patients and the health system.



Poster #148 - WITHDRAWN

Poster #149
SURGICAL MANAGEMENT OF SEVERE HIDRADENITIS SUPPURATIVA

Madeline Cancian, MD, K Jeff Carney, MD, PHr
Emory University

Presented By: Madeline Jones Cancian, MD

Introduction: Hidradenitis suppurativa (HS) is a cutaneous disorder involving occlusion of apocrine ducts at the base of hair follicles leading to ductal stasis and proliferation of trapped bacteria. Unfortunately, a subset of patients with HS will develop severe disease uncontrolled by conservative methods requiring surgical management. National data on HS showed that 54% of surgical procedures are incision and drainage, compared to 39% undergoing debridement with a small minority having a skin graft or flap reconstruction. Despite these trends, evidence suggests that radical debridement of all diseased skin is necessary to prevent recurrence. Additionally, despite a common distribution of the disease being the inguinal and perineal area, a very small minority of cases are performed by urologists. The goal of this study is to describe our experience with patients with severe HS requiring staged surgical interventions.

Methods: Charts of patients undergoing surgical excision of inguinoperineal HS by a single surgeon (KJC) between 1/2015 and 9/2018 were reviewed. Patients who had wide debridement which was not able to be primarily closed were included in the study. Statistics were completed using Microsoft Excel.

Results: We identified 12 patients who underwent radical debridement for Hurley Stage 3 HS. Mean age was 37.4 years (range 23-55). 83% of the patients were male. Mean length of hospital stay following resection was 22 days (range 2-50). 75% of the patients went on to receive hyperbaric oxygen therapy after resection to aid in wound healing and maturation of graft bed. 75% of patients underwent skin grafting for closure of the wound, with 8/9 of these patients having delayed grafting. 1 patient underwent a skin flap procedure for wound closure. 4 patients had colostomies immediately after their initial debridement to optimize wound hygiene. 58% of patients required more than one debridement procedure during their hospitalization to remove all involved tissue. One patient was found to have squamous cell cancer on final pathology.

Conclusion: Severe inguinoperineal HS requires radical debridement of all involved tissue, resulting in extended hospital stays and often requiring multiple ancillary surgical procedures. Hyperbaric oxygen has been utilized at our institution to help with wound healing and optimize conditions for subsequent skin grafting.



Poster #150

FOURNIER'S WOUND MANAGEMENT: A MULTIDISCIPLINARY APPROACH FOR SHORTER LENGTH OF STAYS

Margaret Higgins, Shubham Gupta, Alison Rasper

Univ. of Kentucky, Dept of Urology

Presented By: Margaret Higgins, MD

Introduction: Fournier's gangrene is a rapidly progressing necrotizing fasciitis of the perineal, genital, and perianal regions. This infection is associated with a high mortality rates, traditionally up to 88%. This rate has improved with prompt identification and more aggressive surgical and resuscitative measures. The mean length of stay for patients has been reported at 25 days with a mean time to complete wound healing of 4.8 months. For appropriately managed patients, expedited management with vacuum-assisted closure (V.A.C.®) therapy has facilitated outpatient management. Additionally, there is consideration for delayed primary closure as a multidisciplinary approach.

Methods: As a tertiary care center, our institute has many referrals for management of Fournier's gangrene. In recent months, we have developed a small case series of patients who underwent delayed primary closure following appropriate surgical debridement and resuscitation. Patients have been on a care pathway that includes consultations with appropriate surgical specialties, utilization of wound V.A.C.® device after completion of surgical debridement, discharge with weekly changes with use of V.A.C. GranuFoam Silver® dressings, and delayed primary closure as soon as appropriate based on wound appearance.

Results: From May 2018 through September 2018, five patients have undergone delayed primary closure with a mean hospital stay of 9 (± 6) days. Four had wound V.A.C.® devices placed prior to closure for a mean of 18 (± 4) days total. The fourth patient used wet-to-dry dressing changes prior to closure with utilization of the V.A.C. GranuFoam Silver® dressings after delayed primary closure. Patients managed with V.A.C.® devices underwent delayed primary closure at a mean of 22 (± 5) days from initial presentation. The patient with wet-to-dry management underwent closure at 49 days. Two of the four patients had split thickness skin grafting in combination with plastic surgery for coverage and remainder had adjacent tissue rearrangement for closure.

Conclusion: Wound management with use of V.A.C. GranuFoam Silver® dressings allows for outpatient weekly changes, appropriate infection control, and consideration of delayed primary wound closure. Our management allows for decreased hospital length of stays and expedited wound healing. In addition, there is a proposed improved quality of life during wound management with expedited return to baseline status.



A. Initial debridement, day 0. B. Wound V.A.C. GranuFoam Silver® placement, day 3. C. Delayed primary closure, day 58. D. First clinic follow-up, day 71.

Poster #151

MANUFACTURING OF ENGINEERED BLADDER TISSUES FOR SOLDIERS WITH BATTLEFIELD INJURY

Chi Lo, Alex Baume, Dalia Alzebedeh, Nan Zhang, Namrata Sangha, Sarah Albertson, Jacob Scott, Nirranjan Ghimire, Ryan Szczec, Tsghe Abraha, Teresa Burnette, Heather Herron, Kassondra Hickey, Kathryn Krupp, Lindsey Creahan, Tiana Stewart, Torie Westendorf, Ryan Wolsky, Brad Damratoski, Lisa Hinshaw, Ashley Walker, Shannon Sdao, Todd Meinecke, Darren Hickerson, Rich Payne, John Jackson, Anthony Atala, Julie Allickson, James Yoo
Wake Forest School of Medicine
Presented By: John D. Jackson, PhD

Introduction: An unprecedented number of U.S. servicemen sustained urogenital injuries during recent conflicts. While traumatic injury of the bladder may range from minor to major and life-threatening, there may be severe, immediate, or long-term complications, including obstructive uropathy, scar formation, urinary retention, and vesicoureteral reflux. Tissue engineering represents a method to regenerate native tissue and restore normal bladder function. In this study, we developed cGTP and cGMP compliant manufacturing processes and standard operating procedures (SOPs) for traumatic and fibrotic bladders with the ultimate goal to provide injured military personnel and civilians alike with engineered bladder tissues *de novo* using patients' own cells to restore functional bladder tissue.

Methods: In this project, a neo-bladder construct is fabricated from the patient's own cells. Human urothelial cells (UC) and smooth muscle cells (SMC) are isolated, expanded and seeded onto a resorbable biomaterial scaffold consisting of PGA (polyglycolic acid) and PLGA (poly(lactic-co-glycolic acid)). The bladder construct is matured in a bioreactor then transported to the operating room for implantation.

Results: A robust process was developed in Process Development, and has been translated into Manufacturing. In-process and release testing have been established based on the characterization of the cells, biomaterial, and construct which included cell growth, scaffold coating with PLGA, mechanical stability, sterility, cells expressing the correct phenotypic markers, adherence of the cells to the scaffold, and metabolic activity of the neo-tissue. FDA required testing has also been performed to further define the product itself, sterility of the product, biocompatibility of the manufacturing materials and the transport of the biopsy and product between sites.

Conclusion: We have established the cGTP and cGMP compliant manufacturing processes for the engineered bladder tissue constructs. An investigational New Drug (IND) application for the project was submitted to the Food and Drug Administration (FDA) and we are planning Phase I safety study for the tissue engineered bladder tissue to treat scarred contracted bladders due to extensive bladder damage.

Funding: DoD AFIRM

Poster #152

COMPLETION OF THE ERAS PATHWAY IN PATIENTS UNDERGOING SURGERY FOR BENIGN URINARY DIVERSION IS LOW

Omotola Ashorobi, MD¹, Alexander Nocera, MS², John Selph, MD¹

¹University of Alabama at Birmingham, Dept. of Urology, ²University of Alabama School of Medicine

Presented By: Omotola Ashorobi, MD

Introduction: Our institution has a well-established ERAS pathway for patients undergoing radical cystectomy and urinary diversion for malignancy. We sought to evaluate our utilization of the ERAS pathway for patients undergoing benign urinary diversion, as we hypothesized a lower rate of full ERAS utilization due to patient comorbidities

Methods: We retrospectively reviewed patients undergoing benign urinary diversion over a two-year period from 2016-2018 since our ERAS pathway was instituted for radical cystectomy. Our primary outcome was to evaluate the rate of utilization of all parameters of the ERAS pathway in the benign population. The protocol included preoperative alvimopan, acetaminophen, gabapentin, celecoxib, and receipt of either an intrathecal and transverse abdominus plane block or an epidural. Intraoperatively, patients were evaluated for utilization of fentanyl-only narcotics, lidocaine infusion, ketamine, and dexamethasone usage. We included patients with a variety of conditions undergoing urinary diversion. We excluded patients not posted for ERAS or who underwent surgery before protocol implementation.

Results: 26 patients meeting inclusion criteria were identified. 18 patients underwent open or robotic cystectomy with ileal conduit urinary diversion, 7 underwent bladder augmentation ± catheterizable channel, and 1 patient underwent a robotic-assisted bilateral ileal ureter. Only 1 patient of the 26 received the complete preoperative and intraoperative ERAS pathway, while 2/26 patients received the complete preoperative protocol. Reasons for patients not receiving the complete oral medication protocol preoperatively were most commonly: 1) chronic narcotic usage in eleven patients and chronic kidney disease or age > 65 in six patients. Reasons for not receiving the intrathecal or epidural preoperatively most commonly included: 1) spinal anomalies in 7 patients, 2) sacral decubitus ulcers in 3 patients, and 3) patient refusal or unknown in two. The complete intraoperative protocol was utilized in only 5 patients. Reasons for failing to use all intraoperative drugs most commonly included: 1) lidocaine shortage in seven patients, and 2) unknown in ten patients.

Conclusion: The ERAS pathway in patients undergoing urinary diversion for benign indications has poor uptake. Surgeons providing care for this patient population should be aware of the limitations of ERAS in these patients and work with other providers to continue to advance ERAS protocols for these complex patients.

Poster #153

MANAGEMENT OF UPPER AND MID URETERAL STRICTURES: THE ROBOTIC ADVANTAGE

Russell Libby, Eric Shaw, Amanda Raines, Raju Thomas

Tulane University School of Medicine

Presented By: Russell Phipp Libby, MD

Introduction: Undoubtedly, the management of upper and mid ureteral strictures is a challenge for the practicing urologist. Minimally invasive procedures have gradually proliferated into managing these strictures. The techniques of dissection and suturing have established this approach in management of these strictures.

Methods: Seventeen patients underwent robotic ureteroureterostomy using the robotic approach over a 7-year period. One has to adhere to the basic principles of reconstructive surgery, which includes tension-free anastomosis, adequate blood supply, and appropriate stenting and draining. Four of the 17 patients underwent robotic nephropexy to minimize the tension at the anastomotic site. Adequate ureterolysis is important. Thirteen of the 17 patients had upper ureteral strictures and the rest had mid. All ureters were stented and drained. Follow-up was with MAG-3 renal scans, CT, and IVP. The average age of these patients was 43 (range: 38-82).

Results: All surgical procedures were successfully completed without any open surgical intervention, and the average operative time was 266 minutes (range 210-442). This included the cystoscopic portion of the procedure. One patient required ureteroscopy and laser endoureterotomy for a post-op narrowing at the anastomotic site, which was successful. All patients were symptom-free.

Conclusion: With the help of select video footage, this presentation will highlight the nuances of robotic ureteroureterostomy. Reduced hospital stay and a quicker return to normal activities are two of the many advantages of this procedure.

Poster #154

ROBOTIC-ASSISTED URETERO-URETEROSTOMY: PRACTICAL NUANCES TO ENHANCE A TECHNICALLY CHALLENGING PROCEDURE

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Presented By: Gabriel Leinwand, MD

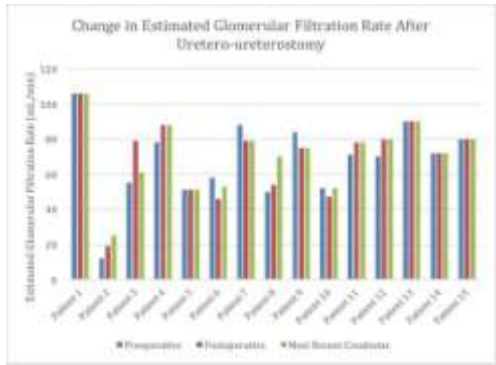
Introduction: The management of ureteral strictures can be challenging, especially in the upper and mid-ureter. Etiology ranges from iatrogenic to traumatic. Robotic assistance has enhanced the precise dissection and transection of the diseased segment, and greatly facilitates end-to-end anastomosis of the two ends of the transected ureter. In this abstract, we describe our technical modifications to enhance the ease of the procedure and success rate.

Methods: From 2007 to 2018, we performed robotic-assisted uretero-ureterostomy (RUU) on 15 patients. The etiologies of stricture were: nephrolithiasis (n=10), iatrogenic (n=3),

malignancy (n=1), and congenital (n=1). The location for these were proximal (n=8), mid (n=5), and distal ureter (n=2). Technical modifications included the placement of a percutaneous catheter up to the distal end of the proximal ureter. This was for palpation and injection of indocyanine green (ICG) for easier detection of the fibrotic end. A ureteral catheter was placed retrograde in the distal ureter for retrograde injection of ICG. The Firefly technology greatly assists in identifying the stricture, as well as the healthy tissue. End-to-end anastomosis was done in the usual manner by spatulating the ureter. Evaluation was by follow-up MAG-3 renal scans or ultrasound after the stent was removed.

Results: All 15 patient cases were successfully completed with robotic assistance. Median age was 55 years old (40-82) and median body mass index was 29.6 (25.1-44.8). Three patients had previous attempted endoscopic repair. Our median operative timing, including cystoscopy, was 266 minutes (117-420), median estimated blood loss was 100 mL (20-200), median stricture length was 1.5 cm (0.6-4.5), and median hospital stay was 1 day (mean = 2.73) (1-5). One patient's pathology report showed low grade, non-invasive papillary transitional cell carcinoma. There were two complications, one urinoma and one ureteral stent migration. One patient required secondary radical nephrectomy due to extensive fibrosis of the collecting system. These carefully selected patients did not require open intraoperative excursion or re-exploration.

Conclusion: With the technical modification highlighted, robotic-assisted end-to-end RUU in properly selected patients, while honoring the tenets of reconstructive surgery [tension-free anastomosis, adequate blood supply, and proper stenting and drainage], will greatly enhance the ease and success of managing such difficult ureteral strictures.



Poster #155

DIABETES AND OTHER FACTORS AFFECTING THE OUTCOMES OF PATIENTS ON ACTIVE SURVEILLANCE FOR SMALL KIDNEY TUMORS

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Levine Cancer Institute

Presented By: Omob Roy, MD, MBA

Introduction: Active surveillance (AS) is a management option for patients with localized cancer intended to minimize the risks of intervention. However, intervention may be pursued in appropriate patients, most often if the disease is thought to be aggressive. In this study, we attempt to identify factors that affect the likelihood of intervention and survival for patients on active surveillance for small kidney tumors.

Methods: This is an IRB-approved retrospective analysis of a prospectively managed database. Data were collected on active surveillance patients with small kidney tumors between 2007 and 2017. The data were stored and managed in a secure REDCAP database, and logistic regressions were performed to determine any factors that significantly affect patient intervention and survival.

Results: A total of 111 cases were reviewed. The mean and median ages of patients studied were 75 and 76, respectively. Intervention was more likely to occur in patients with higher tumor growth rates ($p = 0.018$), and less likely to occur in older patients ($p = 0.009$).

Additionally, patients with higher eGFR's were more likely to survive ($p = 0.031$), while patients with higher tumor growth rates ($p = 0.014$) were less likely to survive. Diabetes mellitus was also found to significantly decrease a patient's likelihood of survival. Figure 1 shows that—after eight years of active surveillance—non-diabetics had a survival rate over 80%, while diabetics had a survival rate of approximately 20% (Figure 1).

Conclusion: Active surveillance is an observational strategy used to reduce the risk of intervention for patients with localized cancers. Understanding how certain factors—such as eGFR, tumor growth rates, and diabetes mellitus—affect patient intervention and survival can allow others to implement better active surveillance protocols and improve patient outcomes for those with small kidney tumors.

Poster #156

PROSPECTIVE EVALUATION OF THE MAYO ADHESIVE PROBABILITY SCORE IN PREDICTING THE PRESENCE OF ADHERENT PERINEPHRIC FAT AT THE TIME OF OPEN PARTIAL NEPHRECTOMY

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Presented By: Katherine Cockerill, MD

Introduction: Adherent perinephric fat (APF) contributes to surgical complexity and can be associated with adverse perioperative outcomes in patients undergoing open and robotic partial nephrectomy. This study evaluates the ability of the Mayo Adhesive Probability (MAP) score to predict the presence of APF at the time of open partial nephrectomy.

Methods: A total of 65 open partial nephrectomy cases were reviewed at a single surgeon with intraoperative determination of APF by the urologic surgeon. A single variable logistic regression model was used for the estimated probability of APF according to the MAP index. The ability of the MAP score to predict APF at the time of partial nephrectomy was estimated by the area under the receiver operating characteristic (ROC) curve.

Results: A total of 65 patients underwent open partial nephrectomy from April 2008 to May 2018 with intraoperative identification of APF. Median age was 66 years (IQR 57, 69) and mean BMI was 30.5 kg/m² (IQR 26.2, 33.8). Median length of stay was 4 days with median total operative time of 190 minutes (IQR 170, 206). A total of 9 patients (13.8%) had MAP=0, 4 patients (6.1%) had MAP=1, 11 patients (16.9%) had MAP=2, 13 patients (20%) had MAP=3, 19 patients (29.2%) had MAP=4, and 9 patients (13.8%) had MAP=5. APF was detected in 36 patients (55%) at the time of surgery. We fit a logistic regression model with MAP score as a linear predictor of the log odds of APF. The overall area under the ROC curve was 0.86 (95% CI 0.77 to 0.95) indicating excellent ability of the MAP score to discriminate between the presence of absence of APF during open partial nephrectomy.

Conclusion: The MAP score combines measurement of perinephric fat and stranding to accurately predict the presence of APF during open partial nephrectomy.

Poster #157

SUBTYPING OF CLEAR CELL RENAL CELL CARCINOMA PATIENTS TO DETERMINE FACTORS ASSOCIATED WITH OVERALL SURVIVAL

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Tulane University School of Medicine

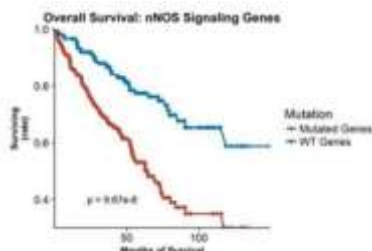
Presented By: Louis Spencer Krane, MD

Introduction: In the formation of cancer, DNA alterations known as “driver mutations” promote carcinogenesis, giving cells an invasive and malignant phenotype. One of the most common mutations clear cell renal cell carcinoma patients is located in either mTOR or PTEN genes. These alterations have led to targeted therapies and FDA approved medications in the metastatic setting. However, these treatments are never curative and further sub-classification may provide additional diagnostic and or therapeutic assistance. The aim of this study is to identify subset populations in patients with clear cell renal cell carcinoma based on mTOR or PTEN mutational status to determine additional diagnostic criteria.

Methods: We used cBio Portal, an open genomic database compiled from the NIH-funded Cancer Genome Atlas (TCGA) to determine survivability, number of patients with alteration, and mRNA expression. Statistical analysis and graph creation was performed using R v3.4.2 in conjunction with R studio.

Results: As previously described we also found a substantial percentage of patients had PTEN or mTOR mutations, yet this did not affect overall survival ($p=0.1$). However in subset analysis, we identified that decreased expression in the nNOS Signaling pathway worsened overall survival in all patients and substantially pronounced in patients without an mTOR/PTEN mutations in specific nNOS pathway genes. This was confirmed as we found with ccRCC, had greatly decreased expression in NOS1, a key player of the nNOS Pathway (Figure 2).

Conclusion: Patients with nNOS signaling pathway and wild type PTEN/mTOR have significantly worse survival than other kidney cancer patients. These mutations may be helpful biomarkers in the future for determining the risk of disease progression unique to mTOR or PTEN mutations. Moving forward, we plan to perform miRNA array, Western blot, and proliferation analysis to further understand the underlying causes.



Poster #158

DEVELOPING A PREDICTIVE NOMOGRAM FOR OPERATIVE DURATION IN MINIMALLY-INVASIVE PARTIAL NEPHRECTOMY

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Presented By: Spencer Larkin, MD

Introduction: Minimal data exists on appropriate operative duration (OD) for minimally-invasive partial nephrectomy (MIPN). Nomograms predicting OD for MIPN may allow further understanding and examination of value. Existing data on OD for MIPN only focuses on a small number of variables. Our objective was to establish a predictive nomogram for OD in MIPN through examination of 31 variables.

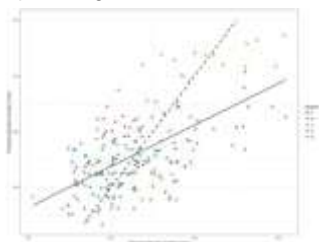
Methods: Retrospective chart review and local National Surgical Quality Improvement Program (NSQIP) database examination of MIPN from 2012-2017 from 209 MIPN. An AIC-based, stepwise elimination procedure was used to find a regression model most predictive of operative duration. The following were included as predictors in the full regression model: Sodium, BUN, creatinine, WBC, HCT, platelet count, age, BMI, inpatient/outpatient, surgeon,

diabetes, smoker, dyspnea, functional status, COPD, hypertension, cancer, open wound, steroids, preoperative weight loss, bleeding, transfusion, sepsis, wound class, sex, cT, pT, grade, robot assistance, renal score, and ASA class ≥ 3 . The nomogram was then tested prospectively in 30 MIPN.

Results: The stepwise elimination procedure resulted in the following predictors of operative duration: BMI (add 6-26 minutes pending the category, surgeon (add 0-113 minutes), COPD (add 40 minutes), gender (add 22 minutes if male), cT (add 28 minutes for cT1b), laparoscopic method (add 10 minutes for pure laparoscopic and 46 minutes for robotic assisted), and ASA class ≥ 3 (add 13 minutes). The retrospective model had a standard deviation of 46 minutes vs 51 minutes for the prospective model.

Conclusion: The retrospectively built nomogram accurately predicted the OD in MIPN when tested prospectively with similar standard deviations. The potential use for such nomograms is vast including scheduling, benchmarking, credentialing, and inclusion in various quality assessment, value, and reimbursement models. Further study is needed to create and validate more robust nomograms in MIPN and other urologic procedures.

Figure 1: A comparison of the actual and predicted operative durations. The dashed line represents what "perfect prediction" would look like, while the solid line represents the least squares regression line. N = 209.



Poster #159

ACHIEVING PERFECTION: WHAT FACTORS PREDICT TRIFECTA AND PENTAFECTA IN ROBOTIC PARTIAL NEPHRECTOMY?

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Presented By: Ashley Shumate, MD

Introduction: Purpose: To prospectively evaluate predictors of achieving Trifecta and Pentafecta after robotic-assisted partial nephrectomy (RAPN).

Methods: A total of 360 RAPNs were performed by a single surgeon between February 2008 and June 2018. Patients were excluded if they had prior RAPN, had RAPN for calyceal diverticulum, if they had > 1 tumor removed during RAPN, or if patient had solitary kidney. Final cohort was 326 patients. Variables analyzed included preoperative characteristics (age, sex, body mass index, diagnosis of hypertension or cardiovascular disease, estimated glomerular filtration rate [eGFR], hemoglobin, and renal mass size) and morphometry scores (R.E.N.A.L. and Mayo Adhesive Probability [MAP] scores). Trifecta was defined as warm ischemia time ≤ 25 minutes, negative surgical margins, and no postoperative complications \geq grade 3. Pentafecta was defined as Trifecta criteria plus > 90% preservation of eGFR and no stage upgrade of chronic kidney disease from pre-operative up to 12 months post-RAPN. After adjustment for multiple testing, $p < 0.007$ was considered statistically significant.

Results: Trifecta was achieved in 276 (84.7%) of patients. Among patients who had eGFR available at 12 months post-RAPN (151), 39 (25.7%) achieved Pentafecta. A lower R.E.N.A.L. score was associated with increased odds of Trifecta (OR 3.37, $p < 0.001$). No other pre-operative characteristics were associated with Trifecta (all $p \geq 0.27$). R.E.N.A.L. score was the only pre-operative variable associated with Pentafecta, with a lower score associated with higher odds of Pentafecta achievement (OR 2.83, $p < 0.001$).

Conclusion: The only pre-operative variable associated with Trifecta and Pentafecta outcomes for RAPN is R.E.N.A.L. score; a lower R.E.N.A.L. score is associated with higher achievement rates of Trifecta and Pentafecta.

Poster #160

EFFECT OF THE NEED FOR PRE-OPERATIVE DIALYSIS ON PERI-OPERATIVE OUTCOMES ON PATIENTS UNDERGOING LAPAROSCOPIC NEPHRECTOMY: AN ANALYSIS OF THE NSQIP DATABASE

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Ochsner Clinic

Presented By: Danica May, MD

Introduction: Laparoscopic radical nephrectomy (LRN) is a well-tolerated surgical procedure with minimal morbidity and mortality. Prior to transplantation, dialysis patients will often have to undergo a LRN to remove a native kidney with a suspicious mass. We hypothesized that patients requiring dialysis were a higher risk surgical population and would experience more peri-operative adverse events even when undergoing a perceived less invasive and complex operation as a LRN.

Methods: Patients in the American College of Surgeons National Surgical Quality Improvement Program who underwent a laparoscopic radical nephrectomy between 2011 and 2016 were included. Patients were stratified by the need for pre-operative dialysis two weeks prior to surgery, and peri-operative outcomes were compared. A multivariable logistic regression analysis was performed to test the association between the need for pre-operative dialysis and peri-operative risk.

Results: There were 8,315 patients included in this analysis of which 445 (5.4%) patients required pre-operative dialysis. Patients who required pre-operative dialysis had more minor ($p < .0001$) and major ($p=.0025$) complications, a higher rate of return to the OR ($p=0.002$), and a longer length of stay (LOS) ($p < 0.0001$) than those patients not requiring pre-operative dialysis. In a multivariate analysis, the need for pre-operative dialysis was independently associated with adverse peri-operative outcomes (OR=1.95, CI=1.50-2.54, $p < .0001$).

Conclusion: Patients requiring pre-operative dialysis were more likely to experience a peri-operative complication and have a longer LOS. For LRNs performed prior to transplantation, further risk stratification is needed, and treatment sequencing may need to be reconsidered.

Poster #161

TRENDS AND PREDICTORS OF RADICAL AND PARTIAL NEPHRECTOMY FOR STAGE I AND II RENAL CELL CARCINOMA: A NATIONAL CANCER DATABASE ANALYSIS

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Presented By: Samarpit Rai, MD

Introduction: Radical nephrectomy (RN) continues to be over-utilized for the surgical management of T1 renal cell carcinoma (RCC), despite evidence that partial nephrectomy (PN) offers better survival and equivalent oncological outcomes for these tumors. The purpose of this study is to evaluate trends in the surgical approach for stage I and II RCC (PN vs RN), and determine the factors associated with the choice of each approach using a large national database.

Methods: Using the National Cancer Database (NCDB), we identified adult patients undergoing PN and RN for stage I and II RCC between 2010 and 2015. We then compared socio-demographic characteristics between the two groups. Kruskal-Wallis and chi-squared tests were used to compare continuous and categorical variables between both groups, respectively. A logistic regression model was created to identify factors associated with the use of RN as compared to PN.

Results: The utilization of PN for stage I and II RCC increased substantially between 2010 and 2015. The patients who were more likely to have undergone PN were younger ($p < 0.0001$), had fewer co-morbidities ($p < 0.0001$), and were more likely to be operated upon at an academic center ($p < 0.0001$) (Table 1). On regression analysis, age (HR 1.04, $p < 0.0001$), increased co-morbidities (HR 1.43, $p < 0.0001$), tumor size 4.1 - 7 cm (vs < 4 cm) (HR 1.27, $p < 0.0001$), and tumor size > 7 cm (vs < 4 cm) (HR 1.81, $p < 0.0001$) were independent predictors of RN as compared to PN. The use of robotic assistance for PN for stage I RCC nearly tripled between 2010 (2,334 cases) and 2015 (6,317 cases), while the use of open PN declined substantially (3,390 cases in 2010 to 2,546 cases in 2015).

Conclusion: Our study demonstrates a substantial increase in the utilization of robotic assistance and nephron sparing surgery (PN) for the treatment of stage I and II RCC. Treatment at academic centers is an independent factor predictive for PN as compared to RN.

Table 1. Comparison of socio-demographic variables between both surgical groups

Demographic	PN patients	RN patients	p-value
Age	50 (51.4%)	52 (53.7%)	>0.001
Sex - Male	33(33.9%)	38(39.3%)	0.3
African American Race	8(8.2%)	10(10.3%)	<0.001
Charlson Deyo Score 0	36% (37.9%)	37% (38.9%)	<0.001
Major vascular disease history	16% (16.5%)	16% (16.5%)	0.000
Academic Center	91% (93.9%)	88% (90.8%)	<0.001
Distance from home	14 (14.4%)	11 (11.3%)	<0.001
Insurance status			
Private Insurance	33% (33.9%)	33% (33.9%)	<0.001
Medicare	36% (36.7%)	39% (40.1%)	<0.001
Medicaid	31% (31.7%)	31% (31.7%)	0.000
Uninsured	2.9 (2.9%)	3.1 (3.1%)	<0.001
ASA	79% (80.8%)	77% (79.2%)	<0.001
A 1-2	79% (80.8%)	77% (79.2%)	<0.001
A 3-4	19% (19.2%)	19% (19.2%)	<0.001

Continuous variables = Median (interquartile range)
 Categorical variables = % (n)

Poster #162
DEFINING VALUE IN PARTIAL NEPHRECTOMY: THE COST OF COMORBIDITIES, INTRAOPERATIVE VARIABLES, AND COMPLICATIONS
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University of Kentucky
 Presented By: Andrew Mitchell Harris, MD

Introduction: As value-based health care gains favor and reimbursement models move towards quality rather than quantity of care, knowledge of not only costs, but also predictors of cost become more important. We aim to identify patient specific and perioperative predictors of increased cost for partial nephrectomy.

Methods: An IRB-approved retrospective study of laparoscopic partial nephrectomies performed at our institution from January 2012 to March 2017 was performed. Local National Surgical Quality Improvement Program data, perioperative data, and finance data were collected and studied. Total cost (TC) and direct cost (DC) were analyzed relative to clinical variables.

Results: Two-hundred and fifteen patients underwent partial nephrectomy during this time period. Median {interquartile range (IQR)} total cost (TC) was \$17,000 (\$14,100-\$19,200), direct cost (DC) was \$11,500 (\$9,600-\$13,000). Concerning preoperative characteristics, age 56-65 and diabetes were associated with increased TC and DC (p<0.05). Concerning operative characteristics, ASA class affected TC and DC (p<0.01). Operative duration and robot use were associated with increased TC and DC (p<0.001). Estimated blood loss (EBL) over 250 CC increased TC and DC (p<0.01). R.E.N.A.L score did not affect cost parameters. Concerning postoperative variables, any complication was associated with increased TC and DC (p<0.05). Transfusions and unplanned intubation increased cost, (p<0.05), Figure 1.

Conclusion: Age, diabetes, ASA class, operative duration, EBL, robot use, any complication, transfusion, and unplanned intubation to cost parameters. Increased knowledge of cost predictors can be used to optimize perioperative care, value, and contribute to alternative reimbursement models.



Poster #163
UTILITY OF CONTRAST ENHANCED ULTRASOUND FOR CHARACTERIZATION OF MALIGNANCY IN SUSPICIOUS CYSTIC AND SMALL SOLID RENAL LESIONS

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Presented By: Andrew Gowdey, MD

Introduction: The evaluation of renal masses generally includes the use of contrasted imaging. In patients with contraindications to the use of iodinated contrast, such as allergy or renal insufficiency, contrast enhanced renal ultrasound (CEUS) offers a promising diagnostic alternative. Beginning in November 2017, we began to evaluate the effectiveness of CEUS in the discrimination of benign versus malignant renal masses.

Methods: Using ICD codes, we identified 12 patients who underwent CEUS. These studies were retrospectively reviewed and correlated with other diagnostic, pathological, and basic demographic data. Our technique for CEUS uses Lumason (Bracco Diagnostics Inc., Monroe Township, NJ) as the enhancing agent. Patients undergo grayscale ultrasound and CEUS in the same session after intravenous Lumason administration. Side-by-side examinations are performed by two sonographers and interpreted by two attending radiologists with experience in CEUS.

Results: Prior to CEUS, 42% of patients only had a renal ultrasound performed. The remaining 58% underwent prior abdominal CT, 71% with contrast and 29 %without. None had an MRI. Each of these preliminary studies demonstrated indeterminate solid or cystic lesions. An additional indication for CEUS was renal insufficiency in 50% of cases, and contrast allergy in 8.3%. Outcomes of CEUS are listed in Table 1. CEUS revealed an enhancing lesion in 25% of cases. Each of these lesions were surgically resected and 100% of these specimens revealed renal cell carcinoma (RCC).

Conclusion: Our preliminary data set demonstrates diagnostic value for CEUS in patients with renal lesions who have renal insufficiency, contrast allergy, or lesions with indeterminate characteristics on previous imaging. 100% of enhancing solid masses and enhancing complex cysts on CEUS were RCC on final pathology. Our early results also suggest the possibility of less rigorous evaluation in patients with negative CEUS, as 66.7% of our patient group had benign diagnostic findings. Although more expensive and labor intensive than CT or MRI initially, CEUS may facilitate long term cost and time savings due to the elimination of unneeded surveillance. Specifically, indeterminate complex cysts, pseudotumors, hemorrhagic cysts, and small non- enhancing solid masses may fall into this category. We are hopeful that larger retrospective and planned prospective studies will shed further light on this possibility.

Table 1:

Preliminary imaging results	CEUS Results	
Indeterminate suspicious lesion on CT	Pseudotumor, Hemorrhagic Cyst	16.7% (2/12)
Indeterminate suspicious mass on CT	Solid Mass (with enhancement)	8.3% (1/12)
Indeterminate solid mass on CT	Bovoidary Rupture	8.3% (1/12)
Solid mass on CT without contrast	Solid Mass (no enhancement)	8.3% (1/12)
Complex cyst on CT without contrast	Cyst (with enhancement)	8.3% (1/12)
Simple Cyst on CT with contrast	Cyst (with enhancement)	8.3% (1/12)
Complex Cysts on US	Cyst (no enhancement)	41.7% (5/12)

Poster #164

LAPAROSCOPIC ASSISTED UROLOGIST CONTROLLED DYNA-CT GUIDED KIDNEY TUMOR BIOPSY AND MICROWAVE ABLATION: A SERIES OF TRULY HYBRID OPERATIONS

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Presented By: Raymond John Leveillee, MD

Introduction: Thermal ablation (TA) of small renal masses (SRM) – cT1c- has gained acceptance in the urologic community as an alternative treatment in lieu of partial nephrectomy (PN). Failures are often attributed to poor targeting or probe placement. Image guided (Ultrasound and computerized tomographic [CT]) as well as laparoscopic (LAP) techniques for targeting have been described. For anterior tumors or those within 2 cm of vital structures radiologists have practiced injection of fluid (hydro-dissection) as a means of spacing. We describe a series of 7 patients for whom the use of a HYBRID operating room (H-OR) with cone-beam CT offers a surgical alternative taking advantage of the safety of laparoscopic mobilization of vital structures and the precision of CT. Outcomes are described.

Methods: A series of 7 patients underwent laparoscopic exposure and simultaneous CT guided renal biopsy and TA of a solitary renal mass where hydro-dissection was not felt to be prudent.

Results: Between April 2016-August 2018, 5 male and 2 Female (7) patients (Age 72; range:52-83) had a single SRM in this series. 3 patients had prior PN. Tumor size was 2.3 cm (range 0.9-3.0) and were anterior and touching bowel or within 1 cm of a critical structure. All patients underwent general anesthesia and prone CT in the H-OR utilizing the Artis Zeego cone-beam (SIEMENS, Munich) to assess bowel proximity to the tumor. IV contrast was used in 5 patients. Patients were repositioned, tilted at 30 degrees. Pneumoperitoneum was established and 3 trocars (5 mm) were inserted. Bowel mobilization performed. Re-imaging and 3D targeting was performed DURING PNEUMOPERITONEUM with use of the proprietary I-guide software. Needle placement was guided with tri-planar fluoroscopy and confirmed by dynamic CT scan. Needle biopsy was performed. Radiofrequency (3) or Microwave (4) single antennae were used. All (4 clear cell; 3 papillary) biopsies were malignant. Treatment time averaged 13 minutes (9-15). All but one patient was admitted for 23 hours "observation". One patient experienced Clavien-Dindo grade I for nausea and ileus which resolved spontaneously.

Conclusion: H-OR's are more commonplace. Combining LAP for safe exposure, Dyna-CT for precise placement, and TA for low morbidity increases the tools of urologists to safely and effectively treat SRM.

Poster #165

DEMOGRAPHIC DISPARITIES IN RENAL CELL CARCINOMA DIAGNOSIS AND CLINICAL OUTCOMES IN RURAL KENTUCKY

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Presented By: Patrick Hensley, MD

Introduction: Little is known regarding the clinical, socioeconomic, and demographic risks factors for renal cell carcinoma (RCC) in underserved populations. This study investigates the disparities in demographic distribution and clinical outcomes of RCC in rural and Appalachian Kentucky, a region characterized by poor healthcare literacy and access.

Methods: The Kentucky Cancer Registry was queried for patients diagnosed with RCC from 2005-2015. Patients were divided into two population categories based on the respective Urban-Rural Continuum code of their county of residence: urban (code 1-3) and rural (codes 4-9). Bivariate analysis was performed using Chi-Square and student T-tests. Logistical regression was used for multivariate analysis after dividing patients into early (Stage I-II) and advanced (Stages III-IV) stages. Kaplan-Meier (KM) curves for overall survival (OS) and cancer-specific survival (CSS) were generated.

Results: 10829 patients were included in analysis, of which 6014 (56%) were from urban counties and 4815 (44%) were from rural counties. The rural group had higher proportions of older patients ($P=0.006$), Caucasian patients ($P<0.001$), smoking ($P<0.001$), lower education levels ($P<0.001$), higher poverty levels ($P<0.001$), higher clinical stage at presentation

($P<0.001$) and were less likely to receive treatment ($P<0.001$) compared to the urban group. Multivariate predictors of advanced stage included increased age ($P<0.001$), Caucasian race ($P<0.001$), male sex ($P<0.001$) and poverty($P=0.009$). Notably, urban vs. rural designation was not associated with late stage disease on multivariate analysis.

While rural patients exhibited worse OS than urban patients on KM analysis($p=0.004$), this did not remain significant on regression analysis ($P=0.308$). Multivariate predictors of poor CSS included older age ($P<0.001$), smoking ($P=0.002$), poverty (<0.001), higher clinical stage ($P<0.001$) and lack of treatment ($P<0.001$).

Conclusion: Rural patients exhibited higher rates of poverty, smoking, and lower education level compared to urban patients, but this designation was not associated with either advanced stage at presentation or clinical outcomes. Other socioeconomic and demographic factors may be contributing, with poverty and lack of treatment both being significantly associated with advanced stage and poor clinical outcomes. Both poverty and lack of treatment may be related to healthcare literacy and access to care, and further investigation into these risk factors is prudent to improve clinical outcomes in these underserved populations.

	Urban	Rural	P-value
N	6514 (15.3%)	4873 (44.3%)	
Age (years)			0.004
20-40	1175 (20.0%)	855 (17.8%)	
50-64	2718 (41.3%)	1871 (38.8%)	
65-74	1382 (21.2%)	1123 (23.0%)	
75+	1145 (17.5%)	967 (19.9%)	
Sex			0.007
Male	3614 (55.5%)	2889 (59.3%)	
Female	2900 (44.5%)	1984 (40.7%)	
Race			<0.001
White	5384 (82.6%)	4465 (91.7%)	
Black	615 (9.4%)	154 (3.2%)	
Other	515 (7.9%)	73 (1.5%)	
Smoking			<0.001
Yes	2764 (42.4%)	2148 (44.3%)	
No	3752 (57.6%)	2725 (55.7%)	
Unknown	1158 (17.9%)	1295 (26.6%)	
Education			<0.001
Very low	89 (1.3%)	2250 (46.4%)	
Low	1116 (17.1%)	1653 (34.1%)	
Moderate	3499 (53.7%)	912 (18.7%)	
High	1106 (16.9%)	0	
Poverty			<0.001
Low	2818 (43.4%)	407 (8.3%)	
Moderate	2358 (36.2%)	417 (8.6%)	
High	1115 (17.1%)	1513 (31.0%)	
Very high	147 (2.3%)	2458 (50.5%)	
Clinical Stage			<0.001
I	1410 (21.6%)	1484 (30.4%)	
II	495 (7.6%)	413 (8.5%)	
III	278 (4.3%)	673 (13.8%)	
IV	978 (15.0%)	820 (16.8%)	
Unknown	413 (6.3%)	411 (8.4%)	
Treatment			0.001
No treatment	700 (10.7%)	880 (18.1%)	
Surgery Only	4440 (67.7%)	1578 (32.4%)	
Other treatment	684 (10.5%)	573 (11.7%)	

Table 1. Bivariate analysis of clinicopathologic factors comparing urban and rural populations.

Poster #166

SARCOPENIA IS INDEPENDENTLY ASSOCIATED WITH DECREASED OVERALL SURVIVAL AFTER SURGERY FOR INFERIOR VENA CAVA TUMOR THROMBUS PATIENTS

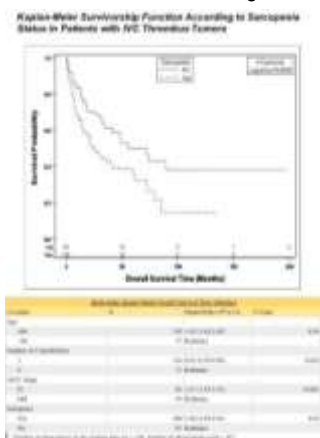
Milton Williams¹, Amir Khan¹, Dattatraya Patil, MBBS,MPH¹, Reza Nabavizadeh, MD¹, Sarah Psutka, MD,MSCR², Aarti Sekhar, MD³, Kenneth Ogan, MD¹, Mehmet Bilen, MD⁴, Viraj Master, MD¹
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Presented By: Milton A'Keem Williams

Introduction: The presence of sarcopenia, a lean muscle mass deficiency is independently associated with inferior survival following the surgical treatment of localized renal cell carcinoma (RCC). This association has not yet been studied in more advanced disease such as patients with RCC and concomitant IVC thrombus tumors. In this study we retrospectively examined the association between preoperative sarcopenia and overall survival following definitive surgery for IVC tumor thrombus patients.

Methods: Baseline lumbar skeletal muscle index (SMI) for patients who underwent surgical treatment for known IVC thrombus tumors between 2006-2018 by a single surgeon were quantified at the 3rd lumbar vertebra from preoperative computerized tomography (CT) or magnetic resonance imaging (MRI). The SMI thresholds used to define sarcopenia were developed using ROC analysis of our data and had the most significant relation to overall survival. Sarcopenia was defined as having a SMI <43cm²/m² and < 40cm²/m² for males and females, respectively, with a BMI of <25kg/m². For those with a BMI ≥25kg/m², sarcopenia was defined as a SMI <53cm²/m² for males and <48cm²/m² for females. Overall survival was compared between patients with and without sarcopenia using the Kaplan-Meier method as well as univariate and multivariate cox proportional hazards regression models.

Results: The cohort consisted of 194 patients of whom 128 (65%) were male and 146 (75%) were non-Hispanic white. There were 143(74%) clear cell renal cell carcinoma cases. 110 patients (57%) were sarcopenic. Patients with sarcopenia had significantly decreased overall survival, log-rank p=0.009 (Figure). The presence of sarcopenia was also associated with decreased overall survival in univariate analysis, (hazard ratio (HR)=1.80, 95% CI 1.15-2.83; p=0.010). In multivariable analysis controlled for age, number of comorbidities, and AJCC Stage, sarcopenia maintained significance as a predictor of decreased overall survival (HR=1.66, 95% CI 1.05-2.61; p=0.030).

Conclusion: Preoperative sarcopenia is independently associated with mortality in patients with IVC thrombus tumors after controlling for common variables such as age, number of comorbidities, and AJCC stage.



Poster #167

SARCOPENIA AND NEUTROPHIL-LYMPHOCYTE RATIO PREDICT OVERALL SURVIVAL AFTER SURGERY FOR LOCALIZED RENAL CELL CARCINOMA

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Presented By: Milton A'Keem Williams

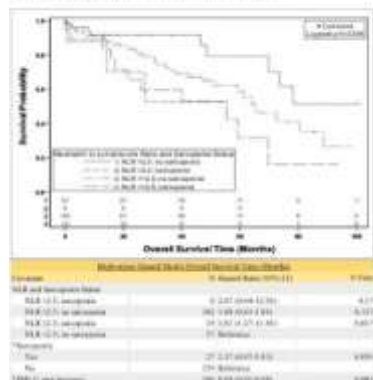
Introduction: Lean muscle mass deficiency or sarcopenia and the presence of inflammation are independently associated with inferior survival following the surgical treatment of localized renal cell carcinoma (RCC) and may be mechanistically related, but have yet to be studied together. We retrospectively investigate the associations between preoperative sarcopenia and a high inflammatory state, as defined by high neutrophil-to-lymphocyte ratio (NLR) and overall survival following definitive surgery for nonmetastatic (M0) RCC.

Methods: Lumbar skeletal muscle index (SMI) for 187 patients treated with radical nephrectomy for M0 RCC between 2009 and 2013 was quantified at the 3rd lumbar vertebra from preoperative computerized tomography or magnetic resonance imaging. Sarcopenia thresholds were determined statistically and defined as having a SMI <45cm²/m² and <38cm²/m² for men and women, respectively, with a BMI <30kg/m². For those with BMI ≥30kg/m², sarcopenia was defined as having a SMI <61cm²/m² for men and <52cm²/m² for women. NLR was calculated from preoperative laboratory tests and NLR values ≥2.5 were determined to be significantly associated with survival in our cohort. Overall survival was compared between patients with and without sarcopenia with the Kaplan-Meier method and with univariate and multivariable Cox proportional hazard regression models. ROC analysis was performed to compare the combined prognostic utility of NLR and sarcopenia with the UISS and SSIGN scores.

Results: The study cohort consisted of 187 patients, of whom 27 (14.5%) were sarcopenic and 121 (65%) had an NLR ≥2.5. The presence of sarcopenia was associated with mortality in univariate models (hazard ratio (HR)=2.05, 95% CI 1.12-3.78; p=0.02), and approached significance in multivariate analysis, (HR= 2.87, 95% CI 0.97-5.83; p= 0.059). Patients with both sarcopenia and NLR ≥2.5 had nearly four times the risk of death in multivariate analysis, (HR= 3.81, 95% CI 1.27-11.45; p=0.017). A one-unit increase in SMI was significantly associated with increased survival in multivariate models (HR=0.94, 95% CI 0.91-0.98; p=0.001). On ROC analysis, the area under the curve for sarcopenia and NLR was 0.6434, compared to 0.6080 for the UISS and 0.6438 for the SSIGN score.

Conclusion: Preoperative sarcopenia and NLR ≥2.5 were associated with mortality in M0 RCC and with similar prognostic ability to validated multidimensional prognostic models.

Kaplan-Meier Survival Plot Stratified by Neutrophil-to-Lymphocyte Ratio and Sarcopenia Status in Patients With Nonmetastatic RCC



Poster #168

VALIDATION OF BEARS INDEX FOR PREDICTION OF LIPID POOR ANGIOMYOLIPOMA IN SMALL RENAL MASSES

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Presented By: Ashley Shumate, MD

Introduction: A recent study suggests high probability of predicting lipid-poor angiomyolipoma (AML) with the BEngn Angiomyolipoma Renal Susceptibility (BEARS) Index based on patient age, female sex, and radiographic renal mass size. Our study attempts to validate the BEARS Index.

Methods: The BEARS Index utilizes clinical and radiographic variables to assign a score of 0-5, with the ability to predict AML from RCC with an area under the curve of 0.84. Patients are scored as noted: 2 points for female sex, 2 points for radiographic renal mass size < 2 cm, and 1 point for age <56. A score of 5/5 is proposed to show a 32.8% probability estimate of AML. Scores of 4, 3, 2, 1, and 0 are proposed to show probability estimates of AML of 15.3%, 6.3%, 2.4%, 0.9%, and 0.3%, respectively. We retrospectively reviewed a prospectively-maintained single-surgeon database of robotic assisted partial nephrectomy (RAPN) and assigned each patient a BEARS index score utilizing the above-mentioned clinical and radiographic variables. The score was then compared with each patient's post-operative pathology. Only patients with final pathology of renal cell carcinoma (RCC) or AML were included. Patients were excluded if they had prior RAPN, if they had previous history of RCC or known AML, and if renal mass was > 7cm.

Results: A total of 337 patients who underwent RAPN met inclusion criteria for analysis. Of these, 322 (95.5%) had final surgical pathology of RCC or oncocytoma and 15 (4.5%) patients had AML. For BEARS index values of 0 (141 patients), 1 (36 patients), 2 (93 patients), 3 (44 patients), 4 (14 patients), and 5 (9 patients), the percent of patients who had AML was 1%, 6%, 8%, 7%, 7%, and 11%, respectively. The area under the ROC curve was 0.70 (95% CI 0.59 to 0.80).

Conclusion: Application of the BEARS Index may predict lipid-poor AML in small renal masses, but its clinical utility is yet to be determined.

Poster #169

PATIENT DEMOGRAPHICS DO NOT ALTER COMPLICATION RATES OR NEED FOR REPEAT SURGERY IN VIRGIN PENILE PROSTHESES CASES

Jacob W Greenberg, Amit Reddy, Brian Dick, Scott Brimley, Peter Tsambarlis, Connor Burkett, David Chernobylsky, Wayne J. G. Hellstrom
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Presented By: Amit Reddy

Introduction: Due to the safety of inflatable penile prosthesis (IPP) implantation, determining the factors that influence outcomes can be difficult. This study aimed to ascertain if certain patient demographics impacted outcomes in terms of both surgical reoperation and strict criteria for complications (Clavien-Dindo grade 2 or higher).

Methods: A retrospective chart review of all IPP placements taking place between 2010 and 2018 was performed. All virgin cases were identified. Patients with incomplete records were excluded. A total of 257 patients met the inclusion criteria. All charts were examined for the presence of: hypertension, diabetes mellitus, Peyronie's disease, and hyperlipidemia. Each patient was also evaluated for any complication of Clavien-Dindo grade 2 or higher and separately for surgical intervention of any kind.

Results: There were no differences seen in either the complication rate or reoperation rate, which could be attributable to patient demographics in this cohort. Diabetes did not produce an increase in complications ($p=0.53$) or surgical reoperation of any kind ($p=0.55$) when compared to non-diabetics. Hypertension and hyperlipidemia did not affect outcomes either separately or together ($p = 0.50$ and $p=0.71$ for complications and reoperation, respectively). The presence of Peyronie's disease did not produce a difference in complications ($p= 0.54$) or reoperation ($p=0.68$).

Conclusion: With respect to virgin IPP placement, the risks associated with patient demographics can be mitigated by preparation and surgical technique. For example, it appears that in virgin cases, a requirement of strict glucose control, as evidenced by a hemoglobin A1c level of 7 or less appears to reduce the risk of complications associated with IPP placement to the same level as non-diabetics. Likewise, hypertension, hyperlipidemia, and Peyronie's disease did not produce differences in outcomes in this cohort. This also appears to hold true even if the definition of complications is expanded to capture any deviation from the post operative course that requires intervention (Clavien-Dindo grade 2 or higher).

Poster #170

OUTCOMES OF PENILE PROSTHESES SURGERY IN THE OCTOGENARIAN POPULATION: A SINGLE INSTITUTION EXPERIENCE

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Presented By: Adam S. Baumgarten, MD, MBA

Introduction: Erectile dysfunction is a common urologic problem particularly among elderly men, as the average life expectancy has increased. Despite medication and lifestyle modifications often being the standard management in this population, there may be a role for penile prosthesis (PP) surgery in this population that should be considered.

Methods: Our penile implant database was queried from 2013-2018 to select patients of at least 80 years of age who underwent a penile prosthesis surgery. A total of fourteen patients were examined; these patients underwent a total of 18 procedures.

Results: Mean patient age was 82.9 years old (80-90 years old). Seven virgin penile prosthesis placements, nine removal and replacement of penile prostheses and two salvage penile prostheses were performed. Nine three-piece inflatable penile prostheses and nine malleable penile prostheses were placed. No patients experienced intraoperative complications. The mean number of hospital admission days was 0.3 (0-1 days). Patients required discharge with a foley catheter 22.2% (4/18) of the time. One surgery (5.6%) resulted in prosthetic infection. Mean follow up was 289 days (63-853 days). At last follow up, 92.8% (13/14) of patients currently have a penile prosthesis in place. The large majority (76.9%) of these patients report satisfaction and sexual activity at last follow up.

Conclusion: PP placement in the octogenarian population appears to be safe and have good outcomes and patient satisfaction. With careful patient selection, this population should be considered for surgery. Age alone should not be a defining factor.

Poster #171

TRANS-FASCIAL PLACEMENT OF A HIGH, SUBMUSCULAR RESERVOIR IS A SAFE, SATISFACTORY, AND ACCURATE TECHNIQUE FOR PLACING AN INFLATABLE PENILE PROSTHESIS (IPP) POST RADICAL CYSTECTOMY (RC)

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Presented By: Bruce R. Kava, MD

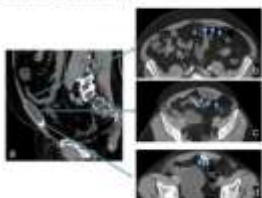
Introduction: High submuscular ectopic reservoir placement via the inguinal canal is a technique that has permitted robotic prostatectomy patients worldwide the opportunity to undergo multicomponent IPP placement. Extending these techniques to RC survivors is a practical and desirable goal. Recent studies, however have suggested that blind passage of the reservoir through the floor of the inguinal canal may result in the reservoir being placed unknowingly within the peritoneum, the retroperitoneum, or other undesirable locations. This may potentially compromise patient safety, particularly following extensive pelvic surgery and the presence of a urinary diversion. In our modification of the technique, the reservoir is passed directly through the anterior rectus fascia, and visually embedded between the rectus muscle and transversalis fascia.

Methods: Safety, efficacy, and patient satisfaction was described for our first 12 consecutive patients using a prospective, highly detailed, IRB approved database. Complications are described. Efficacy and patient satisfaction were based upon patient responses to the Erectile Function (EF) and Satisfaction Domains of the International Index of Erectile Function (IIEF). Post-implant images were reviewed specifically for the purpose of describing the final reservoir location.

Results: Average patient age was 65 +/- 7 years old and the mean time between cystectomy and implant placement was 41 +/- 29 months. With a mean follow up of 26 +/- 21 months, complications included: 1 reservoir herniation, 1 pump requiring repositioning, and one cuff erosion from an artificial urinary sphincter placed simultaneously. Mean IIEF-EF domain scores were 29.8 +/- 0.5 and mean IIEF-satisfaction domain was 17.7 +/- 4.5. With the exception of the herniated reservoir, imaging confirmed accurate submuscular reservoir placement in 8 of the remaining 9 cases. In 3 cases the very top of the reservoir extends into the peritoneal or preperitoneal space.

Conclusion: Trans-fascial, high submuscular reservoir placement is a safe and accurate means of ectopically placing the reservoir of a multicomponent IPP following RC. Post implant IIEF scores indicate high device efficacy and patient satisfaction. Post implant imaging confirms that the reservoir is almost always in the desired location: submuscular, and anterior to the transversalis fascia. A few implants extend slightly into the peritoneum, with the majority of these implants anchored nicely in the submuscular location.

Figure 1: Post-implant imaging (not presented) for patients with the device shows submuscular reservoir placement. Panel A depicts the typical location of the reservoir, demonstrating that it is located submuscularly. Panel B shows the reservoir in the peritoneal space. Panel C shows the reservoir in the preperitoneal space.



Poster #172

SIMULTANEOUS PLACEMENT OF VIRTUE MALE SLING AND INFLATABLE PENILE PROSTHESIS IN MEN FOLLOWING RADICAL PROSTATECTOMY

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Presented By: Amanda B. Carter, MD

Introduction: Male stress urinary incontinence (SUI) and erectile dysfunction (ED) are bothersome entities described after radical prostatectomy. Surgical options exist for both when medical management fails, and a combined approach may be beneficial. We examined continence and per-operative morbidity in 21 patients who received the Virtue male sling (Coloplast, Minneapolis, MN) for post-prostatectomy stress urinary incontinence,

Methods: Twenty-one patients underwent sling placement between 2014 and 2017 with a single surgeon at a single institution. Eleven of these patients had a Titan inflatable penile prosthesis (IPP) (Coloplast, Minneapolis, MN) placed concurrently. Data was collected retrospectively through clinical and surgical records. Success was defined as the use of 0 or 1 pads per day (PPD) at follow-up appointments. We compared success as well as total pad usage between patients who had simultaneous placement of an IPP and those who received a sling alone. Means were compared using an unpaired t-test, while proportions between the groups were compared using a chi-squared test.

Results: Follow up data was available on 19 patients, with an average follow up of 23 months. Seventeen out of 20 patients (85%) were dry at most recent follow up. There was a significant improvement in PPD in all groups, which was similar in the IPP and sling-only group. There was one complication requiring sling removal, an IPP infection requiring removal of the implant and the sling (Clavien-Dindo grade IIIb). Five patients had a recurrence of incontinence, two of whom became dry after revision procedures.

Conclusion: Our series represents an 85% success rate for continence after placement of a Virtue sling based on PPD. Outcomes were similar in patients regardless of IPP placement at the time of sling placement. We believe that performing both procedures simultaneously offers benefits in terms of recovery time with a similar continence rate. The preliminary data for this particular procedure is promising; however, larger multi-institutional studies are needed to further confirm our findings.

Table 1.

	Sling + IPP	Sling-only	Difference	p-value
Pre-Op PPD	2.682 (0-6.5)	2.722 (1-4)	-0.04	0.958
Post-Op PPD	0.727 (0-3)	0.833 (0-2)	-0.106	0.778
Dry Rate	0.909 (10/11)	0.778 (7/9)	0.131	0.426
SUI Recurrences	0.091 (1/11)	0.222 (2/9)	-0.131	0.426
Revision Rate	0.091 (1/11)	0.222 (2/9)	-0.131	0.426
UTI	0.091 (1/11)	0.222 (2/9)	-0.131	0.426
Complications	0.250 (3/12)	0.111 (1/9)	0.139	0.440
BMI	28.499 (16.5-35.89)	33.958 (27-43.4)	-5.459	0.0435
OR Time	176.818 (128-300)	92.889 (60-133)	83.929	0.0001
LOS	1.18 (1-3)	1 (1)	0.18	0.3800

Poster #173

CORRELATIONS OF INTRAOPERATIVE MEASURED PENILE CORPORAL LENGTH WITH PREOPERATIVE DEMOGRAPHICS: RACIAL VARIATION AND COMORBIDITY PROFILE

Amit Reddy, MD, Nickolas Scherzer, Jacob Greenberg, Laith Alzweri, Andrew Gabrielson, Matthew Cowper, Tan Le, Paul Minetos, Connor Burkett, Peter Tsambarlis, Wayne J. G. Hellstrom
Tulane University School of Medicine

Presented By: Amit Reddy, MD

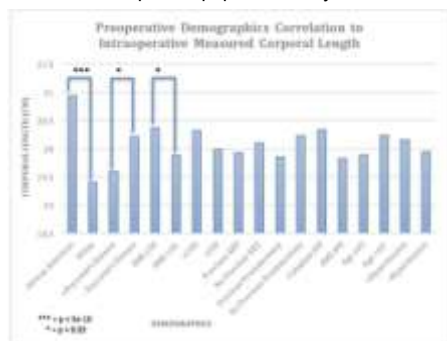
Introduction: No reliable method exists to predict implanted penile prosthesis (IPP) length prior to corporal dilation and intraoperative measurement, despite the previously published Prospective Registry of Outcomes with Penile Prosthesis for Erectile Restoration (PROPPER) study, which attempted to uncover one. The PROPPER study determined that implanted device length is negatively correlated with radical prostatectomy (RP) and Peyronie's disease (PD), and positively correlated with cardiovascular disease (CVD) and non-Caucasian ethnicity. The primary objective of this study is to determine if intraoperatively measured

corporal length (CL) can be correlated to preoperative demographics and IPP manufacturer from single high-volume implanter database, thereby adding data about the racial variation and possible correlation with the size of implanted prosthesis.

Methods: A retrospective analysis was performed on a random sample of patients who received IPP between the years 2010-2018. Patient demographics and operative data were entered into a large database for downstream analysis. Using R, a statistics-based computer language (package Tidyverse), we ran an analysis comparing overall corporal length to clinical data.

Results: 465 patients were included in our analysis: 205 African Americans (AA) and 260 Caucasians (W). The mean overall CL was 20.94 cm and 19.41 cm for AA and W, respectively ($p=3.6 \times 10^{-11}$). Patients with PD had a CL of 19.60 cm, while those without PD had a CL of 20.22 cm ($p=0.0146$). 181 patients had a history of RP, while 283 did not. When comparing CL, mean results were 19.86 cm and 20.23 cm for RP+ and RP-, respectively ($p=0.116$). A multivariate analysis was performed and found no confounding variables. History of hypertension, cardiovascular disease, or radiotherapy, as well as age and implant manufacturer data showed no significance when comparing CL in each subgroup. Results are shown in Figure 1.

Conclusion: IPP length is difficult to predict preoperatively. AA race was significantly associated with a longer corporal length (1.53 cm) when compared to W, and (0.62 cm) shorter CL with PD. Therefore, race and PD may be preoperative predictive factors of CL. However, we found no statistically significant correlation between RP or CVD and CL. Larger studies with a more diverse patient population may further elucidate these relationships.



Poster #174

REVISITING THE VALUE OF A SECOND SEMEN ANALYSIS FOR EVALUATION OF THE INFERTILE MAN

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Presented By: Carter Boyd, MD

Introduction: Current guidelines recommend two semen analyses to evaluate an infertile man. The purpose of our study was to determine if a second semen analysis is required when the first analysis is normal.

Methods: A retrospective review was performed for all men evaluated for infertility from 2012 through 2017 in a tertiary care male infertility practice. Men who underwent vasectomy reversal were excluded. Semen analyses were performed by standard methods.

Results: From January 2012 to December 2017, 1071 men were evaluated for infertility. 66 men had a first semen analysis with all 4 parameters (volume, sperm concentration, percent motile sperm, percent normal shaped sperm) normal. 19 of these men had a varicocele. 34 men, despite instructions to have a second analysis, did not have a second analysis performed. 32 men had a second semen analysis. 21 of these 32 men had a second sample that had all 4 parameters normal. Of the 11 patients without all parameters normal, 7 men had total motile sperm (TMS) count greater than 10 million (range 12.6 – 164 million). Only 4 men

had a TMS of less than 10 million on his second semen analysis, the threshold for intrauterine insemination (IUI) at many centers.

Conclusion: Men appear reluctant to submit a second semen analysis. In our study, around one half of men with a normal first sample gave a second sample. Presumed barriers to submitting a second sample include test and travel costs, lost time from work, and potential embarrassment associated with giving a semen sample. Of those that did give a second analysis in our study, only four had a second analysis with TMS less than 10 million and thus would have had sufficient semen parameters to have IUI. Infertile men should be encouraged to provide two semen samples, though in our study, many were reluctant to do so. Many men with a normal first analysis may not benefit from having the second test if they do not have correctable pathology, such as a varicocele.

Poster #175
IMPROVEMENTS IN ERECTILE FUNCTION, SPERM MOTILITY, AND REVERSAL OF MALE INFERTILITY IN POST-KIDNEY ALLOGRAFT MEN: A SYSTEMATIC REVIEW
David Chernobylsky, Jacob W Greenberg, Hoang Minh Tue Nguyen, Andrew Gabrielson, Rubin Zhang, Anil Paramesh, Joseph Buell, Laith Alzweri, Wayne J. G. Hellstrom, Amit Reddy
Tulane University School of Medicine
Presented By: Amit Reddy

Introduction: Kidney allografts are a known treatment for chronic kidney disease, and while there is consensus that erectile dysfunction (ED) rate among kidney allograft recipients is higher than in the general population, there is a paucity of studies discussing the effects of kidney transplant on ED symptoms, sperm motility and male fertility. Our study elucidates a consensus from the existing literature.

Methods: Articles matching the research topic were identified, with attention to rates of improvement or worsening ED symptoms in renal transplant patients. Of the 422 articles in PubMed based on the search terms “erectile dysfunction,” combined with either “renal transplantation” or “renal allograft” or “kidney transplantation” or “kidney allograft,” 14 articles were selected. In most of the studies, patients were similar in age (avg) and comorbidities. Data was aggregated to standardize the results into an aggregate data set from which overall rate of improved (%) and worsened (%) ED symptoms could be analyzed via a Comparison of Proportions [N-1] Chi-Squared Test.

Results: The aggregate data of 1,381 patients showed a significant improvement in ED symptoms (39.1% vs. 13.5%) after kidney transplantation compared to pre-transplant levels ($P < 0.0001$, 95% CI = 22.4-28.7). However, only 10 of these studies definitively listed how many patients were cured of their ED completely or developed new-onset ED after transplantation. The aggregate data of 549 patients showed no significant correlation between renal transplantation and either the development of new-onset ED, or complete resolution of ED symptoms ($P < 0.23$). An additional study on sperm motility showed significant improvement post-transplantation ($P < 0.05$) and a case report described 5 cases of previously infertile males who produced viable sperm post-transplantation and produced 4 pregnancies via intracytoplasmic sperm injection that resulted in three live births and one miscarriage.

Conclusion: While kidney transplantation does not have a significant effect on either producing new-onset ED or curing ED symptoms completely, it does significantly improve the severity of ED symptoms in those that already have it (severe to moderate, moderate to mild), and also improves sperm motility. Also, due to the limited currently published literature showing improved sperm motility and reversal of male infertility post-renal transplantation, further studies are warranted.

#	Year	No.	Pre-ET Improved (%)	Pre-ET Worsened (%)	Pre-ET ED Rate (% of Reported)	Post-ET ED Rate (% of Reported)	Pre-ET Sperm % Reported	Post-ET Sperm % Reported	P-value (if reported)
1	2007	64	15.1%	0.41%	67.1%		13.5%	15.4%	$P < 0.001$
2	2008	84	10.0%	0.41%	67.1%		13.5%	15.4%	$P < 0.001$
3	2005	15	73.3%	0%	66.7%				
4	2002	121	30%	20.6%	60%				
5	2010	33	10%	15%	30%	10%			$P = 0.05$
6	2009	38	3%	6.67%	1%	2.63%			
7	2017	40	0%	15%	0%	0%			
8	2014	36	40%	4%	20%	20%			
9	2006	101	41%	7%	72%		10.0%	22.5%	
10	2004	450	44%	12.50%	30.00%				$P = 0.05$
11	2007	220	63.00%	13.20%	53.00%	44.30%			
12	2006	30	40%	6.60%	1%	26.60%			
13	2008	48	12.50%	20.40%	7.14%	11.02%	10.4%	17.2%	
14	2002	30	30.00%	0%	7%	30%			

Poster #176**EFFECT OF RACE ON TREATMENT CHOICE AND OUTCOMES FOR PEYRONIE'S DISEASE**

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Presented By: Evan A. Mulloy, MD

Introduction: Peyronie's disease (PD) is a debilitating progressive fibrotic disorder of the penis that can lead to significant physical and emotional distress. Traditionally considered a disease of middle-aged Caucasian men, PD is now seen in a wider demographic of patients seeking evaluation and treatment. Within this population, PD treatment and outcome satisfaction can be highly patient specific and may be dependent on multiple factors. We sought to evaluate the influence of patient race on treatment choice and outcomes among a contemporary cohort of men with PD.

Methods: We conducted a retrospective chart review of all 18-70 year old men presenting to our academic medical center between 1/1/2012 to 12/31/2016 for evaluation and treatment of PD. Information on age, race, medical comorbidities, severity of penile deformity, treatment choice(s), and treatment outcomes was abstracted from the electronic medical record. Severity of penile deformity was based on objective curvature assessment at time of penile Doppler ultrasound (PDUS). Only patients who completed treatment(s) for PD at our institution were included in the final analysis of treatment outcomes and treatment satisfaction.

Results: 432 men were evaluated during the study period. Mean patient age was 59 ± 11 years. 73% of the cohort was Caucasian, 18% African American, 2% Hispanic, and 7% unknown. More than 50% of men had concomitant erectile dysfunction. 268/432 men underwent PDUS, and 117 completed PD treatment at our institution. 82% of men underwent intralesional therapy, 15% had surgical therapy, and 8% underwent intralesional followed by surgical therapies. There was no association between patient race and any/no treatment, type of treatment, or loss to follow-up. Overall, 70% of men expressed satisfaction with their respective treatments. African Americans were more likely to express treatment satisfaction, compared to Caucasian and Hispanic patients (73% vs. 68% and 67%, respectively, $p = 0.82$). Overall concordance between patient satisfaction and physician-noted improvement in curvature showed substantial agreement (Cohen's Kappa=0.76).

Conclusion: In this diverse cohort of men with PD, patient race was not significantly associated with decision to undergo treatment for PD, treatment choice, follow-up, or treatment outcome. Overall, patient satisfaction with treatment was high, at 70%, as was concordance between patient and physician perceived treatment outcomes.

Poster #177**IMPACT OF PENILE TRACTION THERAPY WITH RESTOREX ON ERECTILE DYSFUNCTION IN A COHORT OF MEN WITH PEYRONIE'S DISEASE**

Paige Nichols, MD, David Yang, MD, Yifan Meng, MD, Joshua Savage, P.A.-C, Tobias Kohler, MD, M.P.H, Landon Trost, MD

Mayo Clinic, Department of Urology

Presented By: Paige Elizabeth Nichols, MD

Introduction: Several studies have demonstrated improvements in erectile function among Peyronie's disease (PD) men undergoing penile traction therapy (PTT). However, no randomized controlled trials have confirmed this finding or attempted to differentiate the changes in erectile function from improvements in curvature.

Methods: A randomized, controlled trial (NCT03389854) is ongoing to evaluate the impact of PTT with RestoreX in 110 men with PD. Men are randomized to one of four groupings: no therapy (control) or treatment with Restorex for 30 minutes 1x, 2x, or 3x daily for 3 months. All men then enter an open label phase for 3 months. To evaluate erectile function, patients were administered the International Index of Erectile Function Questionnaire (IIEF) and SEP2 and SEP3. Additionally, patients were asked a non-standardized question, "has the treatment you have been taking improved your erectile function?"

Results: A total of 110 men (mean age 58.4) have been enrolled to date, with 3 and 6-month data available on 75 and 31 men, respectively. Mean baseline erectile function domain score of the IIEF (IIEF-EFD) was 19.4, with 81% of men able to penetrate (SEP2) and 76% reporting

ability to maintain the erection (SEP3). At 3 months, PTT men experienced significant improvements in IIEF-EFD compared to controls (+3.5 vs -0.7, $p=0.02$). Among those who responded "No" initially to SEP2, after 3 months, 57% of men (4/7) in the PTT arm responded "Yes" compared to 0% (0/5) in the control arm ($p=0.02$). For the question, "has the treatment you have been taking improved your erectile function," 63% (24/38) men in the PTT arms answered, "Yes" compared to 12.5% (1/8) in the control group ($p<0.01$). Among men in the control arm who began PTT at 3 months (open label), IIEF-EFD increased by +2.4 points ($n=5$, $p=0.19$), and 29% (2/7) indicated that PTT improved their erectile function. After controlling for improvements in penile curvature and length, PTT remained a statistically significant predictor of improvements in IIEF-EFD (OR 2.9; $p<0.01$).

Conclusion: PTT with RestoreX results in statistically significant improvements in standardized and non-standardized assessments of erectile function in PD men, independent of improvements in curvature and length.

Funding: PathRight Medical

Poster #178

FIGHTING THE CURVE: PRELIMINARY DATA OF A YOUNG PRACTICING UROLOGIST, TRAINED IN THE ERA OF XIAFLEX

Daniel Martinez, MD, Yekutiel Sandman, MD, Robert Puig, MD, Cosme Gomez, MD

Urology Specialty Care

Presented By: Daniel R. Martinez, MD

Introduction: Since the beginning of time, when man learned what he could do with his penis, Peyronie's disease (PD) has haunted him. Surgical treatment had been the mainstay, but in the past few years, a less invasive option has taken front stage. We present the preliminary treatment data from one Urologist, fellowship trained in Sexual Medicine during the era of Xiaflex. This data provides a preliminary review of Xiaflex therapy for the treatment of PD for one provider at one REMS certified site.

Methods: Over 40 patients had Xiaflex ordered for them in a 2 year period, at one REMS certified site. Penile dopplers with intracavernosal injections were utilized for accurate measurement of curvature. The treatment protocol was followed, as described in the initial FDA approved trial, including the appropriate exclusion criteria. Curve was measured at the beginning of each cycle. No more than 4 cycles were performed for each individual curve.

Results: After one cycle of Xiaflex, 15 patients (mean curve of 50.67 degrees) had a mean change in curve of 12.67 degrees (25% change). After the second cycle, 8 patients had a mean change in curve of 22.5 degrees (44.4% change). After the third cycle, 4 patients had a mean change in curve of 32.5 degrees (64.1% change). After the fourth cycle, 4 patients had a mean change in curve of 40 degrees (78.9% change). All patients had some change in curve after at least one cycle of Xiaflex, and after four complete cycles a 78.9% mean change in initial curve.

Conclusion: In the original FDA approved trial, approximately 75% of men responded to Xiaflex with an approximate 30% mean change in curvature. Our data shows that 100% of men responded with a 79% mean change in curvature. Although many things come into play regarding a patient's response to Xiaflex therapy, one could make an argument that receiving formal training at a high volume center may be one of the major contributing factors. Further clinical investigation is necessary to solidify this preliminary data. We expect the trend to continue to manifest itself, making Xiaflex, and similar less invasive treatment modalities the future of Peyronie's therapy.

Poster #179

PEYRONIE'S DISEASE PICTORIAL INTAKE FORM: IMPROVING THE IDENTIFICATION AND DISCUSSION OF PENILE CURVATURE THROUGH ILLUSTRATIONS

Mohamed Adnan, BA¹, Caleb Natale, BA¹, Farid Zeineddine, BS¹, Seth Cohen, MD²

¹Tulane University School of Medicine, ²New York University Urology Associates

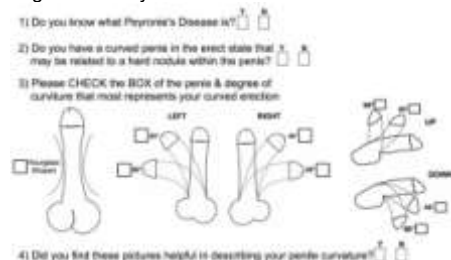
Presented By: Mohamed Adnan

Introduction: While <1% of patients are diagnosed with Peyronie's disease (PD), the actual incidence of PD may be upward of 11%—indicating a need for improved PD identification methods. The Peyronie's Disease Pictorial Intake Form (PD-PIF) was developed to help physicians preemptively identify probable/undiagnosed PD and to assess the severity of each patient's penile curvature. Since PD can be uncomfortable and difficult to discuss between a patient and physician, we hypothesize that pictorial representations can be used to better assess the severity of penile curvature.

Methods: The PD-PIF was attached to a general urology intake form and given to previous and newly enrolled sexual health patients awaiting examination, with no exclusion criteria. The PD-PIF included four questions related to a patient's understanding of PD and the severity of penile curvature using diagrams that best reflect the patient's penile curvature (Fig.). Upon completion, the survey was provided to the physician for pre-evaluation. Responses to the survey were recorded and analyzed.

Results: The survey was completed by 38 out of 40 adult men. For question two, 42% selected "Yes", indicating potential PD. The dominant curves selected were an hourglass deformity, left curvature, or dorsal curvature. Nearly all options were used at least once, sometimes in combination, to describe a patient's curvature. Notably, 79% of patients found the PD-PIF helpful in describing their penile curvature. Of the patients who did not report a curved penis in the erect state related to a nodule, 68% still found the illustrations helpful in describing their penile curvature.

Conclusion: While the Peyronie's Disease Questionnaire (PDQ) is a standard for assessing PD patients and for research protocols, the PD-PIF can be a quick and easy additional or alternative tool to aid in the discussion of PD. In our practice of mixed general urology and sexual medicine patients, we found the PD-PIF to be indispensable in both diagnosing new PD patients as well as defining the extent of a patient's penile curvature. We found that the variety of penile curvatures represented within the PD-PIF enhanced communication and engagement with our PD patients. Therefore, the PD-PIF can further elevate the patient understanding and diagnosis of Peyronie's disease.



Poster #180

PEYRONIE'S DISEASE AND MANUAL MODELING DO NOT AFFECT PATIENT OUTCOMES IN VIRGIN PENILE PROSTHESIS CASES

Amit Reddy, Jacob W Greenberg, Brian Dick, Scott Brimley, Peter Tsambarlis, Connor Burkett, Wayne J. G. Hellstrom

Tulane University School of Medicine

Presented By: Amit Reddy, BS

Introduction: Inflatable penile prosthesis (IPP) placement is the cornerstone of therapy for patients with concomitant Peyronie's disease (PD) and erectile dysfunction refractory to phosphodiesterase 5 (PDE5) inhibition. The aim of this study was to evaluate if the presence of PD with or without manual modeling had an influence on patient outcomes in terms of

complications or reoperation in virgin IPP cases.

Methods: A retrospective chart review of all IPP placements taking place between 2010 and 2018 was undertaken. All virgin cases were identified, and a total of 257 had complete medical records. Patients with PD were compared to patients who did not carry the diagnosis. A second analysis was completed that assessed the effect of manual modeling on both complication rate and reoperation.

Results: A total of 71 of the 257 patients in this cohort had a diagnosis of PD. Of these 71, 48 underwent manual modeling at the time of their IPP placement. In terms of the diagnosis of PD itself, no differences were seen in either complication rate or reoperation when compared to men without PD, $p = 0.54$ and $p = 0.68$, respectively. With regard to manual modeling, there was no difference identified in either complications ($p = 0.80$) or reoperation ($p = 0.89$). There were no intraoperative complications, particularly perforations, identified in this series.

Conclusion: Manual modeling is a safe and effective treatment option in the treatment of PD at the time of IPP placement. In this cohort of virgin cases, the additional stress placed on the cylinders at the time of surgery in order to facilitate penile straightening did not appear to have an impact on patient outcomes. There were also no intraoperative complications associated with the technique.

Poster #181

DIABETES AND ERECTILE DYSFUNCTION: A SPECIAL POPULATION ANALYSIS FROM A PENILE DOPPLER COHORT OF OVER 1000 PATIENTS

Ashley Shumate, MD¹, Isabella Galler², Colleen Ball, MS², Gregory Broderick, MD¹

¹Department of Urology, Mayo Clinic, Jacksonville, FL, ²Department of Health Sciences Research, Mayo Clinic, Jacksonville, FL

Presented By: Ashley Shumate, MD

Introduction: To describe the clinical profiles of men with diabetes mellitus(DM) and characterize the etiology of their erectile dysfunction(ED) with penile color duplex Doppler ultrasound(CDDU).

Methods: We retrospectively analyzed all patients who underwent intracavernous injection followed by CDDU at our institution between 2005 and 2018. Doppler findings were recorded in two phases: phase 1 was prior to visual-sexual stimulation and phase 2 was post-visual sexual stimulation. We examined patient characteristics including age, comorbidities(DM and its complications[neuropathy, retinopathy, and chronic kidney disease], hypertension[HTN], coronary artery disease[CAD], and hyperlipidemia[HLD]), smoking history, hemoglobin A1C(Hgb A1C) at time of CDDU, use of insulin or oral anti-diabetic drugs(OADs), history of PDE-5 failure, and SHIM score. CDDU findings including peak systolic velocities(PSV), primary diagnosis after CDDU, and resistive indices(RIs) were also examined. We defined arterial insufficiency(AI) as mild-moderate($PSV \leq 35 - 25$ cm/sec) or severe($PSV < 25$ cm/sec).

Results: 1177 patients underwent CDDU. Of those, 212(18.0%) had DM. Compared to patients without DM, those with DM were older(57.2 v 60.4 , $p = 0.0039$) and had more frequent diagnoses of HTN, CAD, and HLD($p < 0.0001$, for all). More diabetics had a history of tobacco use($p = 0.012$), PDE-5 inhibitor failure(75.9% vs 52.5% , $p < 0.0001$), and lower SHIM score compared to non-diabetics(8.6 vs 11.6 , $p < 0.0001$). There was a higher rate of AI among diabetics compared to non-diabetics(53.8% vs 23.4% , $p < 0.0001$) but similar rates of CVOD(35.8% vs 40.4% , $p = 0.218$). Among diabetics, 37.9% were insulin-dependent(ID). Compared to non-insulin-dependent(NID) diabetics, ID diabetics were younger(58.4 vs 61.7 , $p = 0.0160$), had higher Hgb A1C(7.9 vs 6.8 , $p < 0.0001$), had more complications from DM(32.5% vs 14.5% , $p = 0.002$), and more frequent HTN($p = 0.011$), but had similar rates of CAD, HLD, tobacco use, and PDE-5 inhibitor failure. SHIM score was similar between ID(8.1) and NID diabetics(9.1). 10% of ID diabetics had a normal CDDU exam compared to 2.3% of NID DM($p = 0.0145$). Rates of AI were similar between ID and NID diabetics(57.5% vs 51.9% , $p = 0.429$). There was no difference in average phase 1 or phase 2 PSV or average RI between ID and NID patients.

Conclusion: DM is associated with several cardiovascular risk factors including HTN, CAD, and HLD, and worse baseline erectile function. In our series, ID diabetics and NID had similar rates of cavernous arterial insufficiency.

Poster #182

INTRAPROSTATIC LYMPHOCYTE DENSITY CORRELATES WITH TOTAL TESTOSTERONE LEVELS

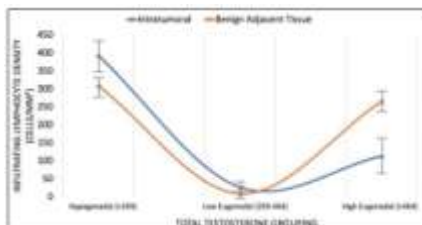
Andrew Gabrielson, Amit Reddy, Andrew Sholl, Laith Alzweri, Asim Abdel-Mageed, Jonathan Silberstein, Wayne J. G. Hellstrom
Tulane University School of Medicine
Presented By: Amit Reddy, BS

Introduction: Male hypogonadism promotes a pro-inflammatory state within the prostate which may drive prostatitis-like symptoms. Previous studies by our group demonstrated that hypogonadal men have increased histologic evidence of chronic prostate inflammation compared to eugonadal counterparts; however, recent evidence suggests that higher levels of total testosterone (TT) may drive prostate inflammation as well. We examine the relationship between TT level and prostate lymphocytic infiltration.

Materials: Specimens from treatment-naïve patients undergoing radical prostatectomy (RP) were retrospectively acquired. Patients matched for Gleason score, age, TNM stage were stratified by pre-RP TT: <293 ng/dL (hypogonadal), 293-464 ng/dL (low eugonadal), >464 ng/dL (high eugonadal). Quantitative analysis of lymphocyte density (cells/mm²) was performed with ImageJ. ANOVA and two-sided T-test were used to correlate lymphocyte densities with pre-RP TT, as well as other clinical factors associated with prostate inflammation.

Results: Twenty-three RP specimens (9 hypogonadal, 6 low eugonadal, 8 high eugonadal) were included. Median pre-RP TT was 170 ng/dL, 435 ng/dL, and 598 ng/dL in the hypogonadal, low eugonadal, and high eugonadal arms, respectively. When comparing tumor infiltrating lymphocyte (TIL) densities, there were significant differences between the three groups (393 cells/mm² in hypogonadal, 113 cells/mm² in high eugonadal, 27 cells/mm² in low eugonadal arms, respectively $p=0.0356$). Lymphocyte density in benign adjacent tissue was significantly higher in both hypogonadal and high eugonadal arms compared to the low eugonadal arm (310 cells/mm², 266 cells/mm², and 9 cells/mm², respectively, $P = 0.445$). There was no significant difference in infiltrating lymphocyte density between the hypogonadal and high eugonadal arms within benign tissue. There was a U-shaped relationship between infiltrating lymphocytes and TT level within both the tumor and benign tissue (Figure 1). Independent analysis using ANOVA revealed no association between infiltrating lymphocyte densities and co-existing benign prostatic hyperplasia, hypertension, hyperlipidemia and diabetes mellitus.

Conclusion: We demonstrate a U-shaped relationship between TT levels and intraprostatic lymphocyte infiltration within prostate tumor and benign adjacent tissue. These results are consistent with recent findings demonstrating reduced rates of prostatitis in patients with TT levels between 293-464 ng/dL. It is conceivable that this range may represent an optimal TT target for testosterone replacement therapy such that inflammation and prostatitis-like symptoms are reduced.



Annual Business Meeting Agenda

Saturday, March 16, 2019

- I. Report from the President –Scott B. Sellinger, MD, FACS**
- II. Minutes of the 2018 Annual Business Meeting – S. Duke Herrell III, MD, FACS**
- III. Secretary Report – S. Duke Herrell III, MD, FACS**
- IV. Treasurer Report – David M. Kraebber, MD**
- V. Historian Report - Paul W.F. Coughlin, MD, FACS**
- VI. Committee Reports**
 - 1. 2019 Local Arrangements Committee – Scott B. Sellinger, MD, FACS**
 - 2. Committee on Education and Science – Chad W.M. Ritenour, MD**
 - 3. Bylaws Committee - Nicole L. Miller, MD**
 - 4. Finance Committee – Gerard D. Henry, MD**
 - 5. Membership Committee – Chad W.M. Ritenour, MD**
 - 6. Health Policy Committee – Jonathan Henderson, MD**
- VII. Representative to the AUA Board of Directors – Thomas F. Stringer, MD, FACS**
- VIII. Future Sites Committee – Jack M. Amie, MD**
- IX. Unfinished Business**
- X. New Business**
- XI. Honorary Members – Scott B. Sellinger, MD, FACS**
- XII. Nominating Committee Report and Elections – Jack M. Amie, MD**
- XIII. Introduction of Incoming President**
- XIV. Adjournment**

Minutes of the 82nd Annual Business Meeting

Unless otherwise noted, actions were by unanimous vote and all committee reports were unanimously approved.

I. Report from the President – Jerry E. Jackson, MD, FACS

Dr. Jerry Jackson called the SESAUA Annual Business Meeting to order on Saturday, March 24, 2018 at 9:48 a.m. Dr. Jackson thanked everyone for their participation in this year's meeting. He thanked the membership for the honor of serving as the Section's President.

II. Minutes of the 2017 Annual Business Meeting – Glenn M. Preminger, MD

Dr. Glenn Preminger presented the minutes from the 2017 Annual Business Meeting to the membership for approval.

Action: The minutes from the Annual Business Meeting held on March 25, 2017 were approved as presented.

III. Secretary Report – Glenn M. Preminger, MD

Dr. Scott Sellinger presented the 2018 Distinguished Member Recognition Award to Dr. Toxey Morris. Dr. Glenn Preminger thanked everyone who contributed to this year's program. The program committee was more selective this year's with abstracts with a 62.3% acceptance rate. He thanked Dr. Herrell and the Committee on Education and Science for their assistance with the various aspects of the scientific program this year. Dr. Preminger thanked the membership for allowing him to serve as the SESAUA Secretary.

IV. Treasurer Report – David M. Kraebber, MD

Dr. David Kraebber stated that the fund balance as of December 31, 2017 was \$5,821,236 and reflects an operating income of \$699,254. The investments are held by Vanguard and the Section benefits from the same investment rate as the AUA. The portfolio composition includes \$1,962,670 in Fixed Income, \$2,333,887 in Domestic Stocks, \$1,494,468 in International Stocks for a total of \$5,591,024 in investments. The 2017 Annual Meeting yielded a surplus of \$142,791. The Section continues to support a number of programs throughout the year including the resident robotic and endourology courses, the resident travel stipends and many others.

V. Historian Report - Paul W.F. Coughlin, MD

Dr. Paul Coughlin asked for a moment of silence as he read the names of the members who passed away this past year: Edward Ackerman, MD, John Adams Sr., MD, Gerald Albert, MD, PhD, Samuel Brewton Jr., MD, Donald Coffey, MD, John Cole, MD, Manuel Coto, MD, Wayne Davis, MD, Robert Dyer, MD, William Frohbose, MD, Lonnie Howerton Jr., MD, Enrique Panlilio, MD, Claude Pasquier Jr., MD, Robert Pierce Jr., MD, Neil Price, MD, Josiah Reed Jr., MD, Kelly Roberts, MD, Kevin Rozas, MD, Oscar Sandoval, MD, Thomas Shown, MD, Jack Sloane, MD, Eugene St. Martin, MD, Alan Treiman, MD, Hurbert Turley, MD, E. Darracott Vaughan Jr., MD, and Harry Zengel Jr., MD.

VI. Committee Reports

1. 2018 Local Arrangements Committee – Jerry E. Jackson, MD, MFACS

Dr. Jackson hoped that the members enjoyed the meeting that was well attended and received from the comments he heard during the meeting.

2. Committee on Education and Science – S. Duke Herrell III, MD

Dr. Herrell thanked the members of the Committee on Education and Science for their support and participation in the program. He thanked the membership for allowing him to serve as chairman of the committee.

3. **Bylaws Committee: 2018 Bylaws Change - Lee N. Hammontree, MD**
Dr. Lee Hammontree presented the following 2018 bylaws change to the membership for approval:

**ARTICLE III
BOARD OF DIRECTORS**

**Section C. DUTIES Section D. THE EXECUTIVE COMMITTEE OF THE
BOARD OF DIRECTORS**

1. Duties:

g. 6. Every second year **At the request of the AUA,** nominate two (2) **three (3)** Section Members interested in research to serve a four (4) year term on the AUA Research Committee **Council.** If appointed by the President of the AUA, the Members will serve for two (2) years as Alternate Representatives and two (2) more years as Representatives on the AUA Research Committee. **Council for a four (4) year term renewable once.**

Action: The 2018 bylaws change was approved as presented.

4. **Finance Committee – Gerard D. Henry, MD**
Dr. Gerard Henry stated that the finance committee met via teleconference prior to the annual meeting as well as hosted an in-person meeting at this year's annual meeting. The committee continues to look for ways to increase non-dues revenue. This year there will be an industry sponsored training course and he encouraged everyone to attend it.
5. **Membership Committee – Chad W.M. Ritenour, MD**
The Southeastern Section currently has 2,292 members. Dr. Chad Ritenour presented the SESAUA membership candidates and transfers to the membership for approval.
Action: The candidates and transfers for SESAUA membership were approved as presented.
6. **Health Policy Council – Lorie G. Fleck, MD**
Dr. Fleck provided a brief summary on the current activities of the Health Policy Council. She stated that the council held an in-person meeting during this year's annual meeting and will be bringing their ideas to the board for consideration.

VII. Representative to the Board of Directors of the AUA – Thomas F. Stringer, MD, FACS

Dr. Thomas Stringer provided an overview of the structure of the AUA. He stated that the AUA conducted a member satisfaction survey in 2018 and the results were overwhelmingly positive. The AUA's membership totals 21,005. He encouraged everyone to attend the AUA 2018 Annual Meeting in San Francisco.

VIII. Future Sites Committee – Jack M. Amie, MD

Dr. Jack Amie gave a brief presentation on the location of the 2019 Annual Meeting. He stated that due to the recent hurricane that affected Puerto Rico that the annual meeting location had to be moved to the Arizona Biltmore in Phoenix, Arizona. The 2020 Annual Meeting will be held at the Roosevelt in New Orleans, LA. The 2021 Annual Meeting will be held in Nashville, TN.

IX. Unfinished Business

No report.

X. New Business

No report.

XI. Honorary Members – Jerry E. Jackson, MD, FACS

The following guest speakers were presented to the membership for approval for honorary membership: Robert Uzzo, MD, Gerald Jordan, MD, Timothy Averch, MD, Pasquale Casale, MD, Michael Cookson, MD, Laurence Levine, MD, and Dmitriy Nikolavsky, MD.

Action: The guest speakers of the 2018 SESAUA Annual Meeting were approved for Honorary Membership.

XII. Nominating Committee Report and Elections – Jack M. Amie, MD

Dr. Jack Amie presented the following slate of nominations for the SESAUA Board of Directors:

President: Scott Sellinger, MD, FACS
President-Elect: Glenn Preminger, MD
Secretary: Stanley Duke Herrell III, MD, FACS
Alabama Representative: Jared Cox, MD
Alabama Representative: Tracey Wilson, MD
Alabama Alternate Representative: John Patrick Selph, MD
Alabama Alternate Representative: Lauren Hendrix, MD
Florida Representative: Adam Ball, MD
Florida Representative: Lawrence Hakim, MD
Florida Alternate Representative: Paul Crispen, MD
Florida Alternate Representative: Gregory Broderick, MD
Georgia Representative: Rabii Madi, MD
Georgia Representative: Joshua Perkel, MD
Georgia Alternate Representative: Cara Cimmino, MD
Georgia Alternate Representative: To Be Determined by the GUA
Kentucky Representative: Murali Ankem, MD, MBBS
Kentucky Alternate Representative: Jason Bylund, MD
Mississippi Representative: Christopher Bean, MD
Mississippi Alternate Representative: James Wallace, MD
North Carolina Representative: Brian Cope, MD
North Carolina Alternate Representative: Lydia Laboccetta, MD
Puerto Rico Representative: Eduardo Canto, MD
Puerto Rico Alternate Representative: Gilberto Ruiz-Deya, MD

All other board members terms are current.

Action: The nominations for the SESAUA Board of Directors were approved as presented.

Dr. Amie presented Dr. Raju Thomas for the SESAUA Alternate Representative to the AUA Board of Directors position to the membership for approval. Dr. Raymond Leveille was nominated from the floor for the SESAUA Alternate Representative to the AUA Board of Directors position. A written vote was conducted.

Action: Dr. Raju Thomas was elected as the SESAUA Alternate Representative to the AUA Board of Directors.

Dr. Jack Amie then called for nominations from the floor for the SESAUA Member-at-Large position on the SESAUA Nominating Committee. Dr. Martha Terris' second term as Member-at-Large had expired and must be replaced.

Action: Dr. Rolando Rivera was appointed as Member-at-Large on the SESAUA Nominating Committee.

XIII. Introduction of Incoming President

Dr. Jerry Jackson introduced Dr. Scott Sellinger as the SESAUA 2018-2019 President. Dr. Sellinger thanked the membership for the honor of serving as President of the Section and encouraged everyone to attend the 2019 Annual Meeting at the Arizona Biltmore in Phoenix, Arizona.

XIV. Adjournment

The SESAUA Annual Business Meeting adjourned at 11:13 a.m.

Respectfully Submitted,
Samantha Panicola
SESAUA Associate Director

BYLAWS

PREAMBLE

Section A.

Mission

The Southeastern Section of the American Urological Association, Inc., (Section) is a professional organization devoted to the propagation of the highest standards of medical practice and to the discovery and dissemination of scientific knowledge and information. It is also the function of the Section to promote and advocate for the practice of urology.

Section B.

Objectives

The stated objectives of the Section are to perpetuate the finest traditions of the medical arts, to encourage the scientific advances in the field of urology, to promote the improved practice of urology, and to benefit the general welfare. It is the Section's paramount goal to offer increasing responsibilities to those vigorous young colleagues exhibiting enthusiasm and capability.

Section C.

Code of Ethics

Members Shall:

1. Conduct professional activities with honesty, integrity, fairness, and good faith.
2. Always treat each other, employees, staff, volunteers, and the public with dignity, respect, and courtesy.
3. With enthusiasm act as a goodwill ambassador for the Section.

ARTICLE I MEMBERSHIP

Section A.

CATEGORIES

The Membership of the Southeastern Section of the American Urological Association, Inc., herein afterward known as the Section, shall consist of the following categories:

- | | |
|----------------------|--------------------------|
| 1. Active Members | 5. Honorary Members |
| 2. Senior Members | 6. Corresponding Members |
| 3. Associate Members | 7. Candidate Members |
| 4. Allied Members | |

Membership in the Section is afforded solely at the discretion of the Board of Directors and the Section Membership, with the advice of the Membership Committee. Application for membership in the Section must be made on forms approved by the Board of Directors and provided by the Secretary.

Section B.

VOTING STATUS AND RIGHTS

Only Active and Senior members, and those Active and Senior members who are elected to Honorary Membership, shall be eligible for office or have the right to vote. All members shall be entitled access to the latest available copy of the Articles of Incorporation and Bylaws and the Roster of Membership available on the Section Website.

Section C.

MANDATORY AUA MEMBERSHIP

Each member of the Section must also join the AUA. Each member of the AUA, except corresponding members, must also be a member of the Section.

Section D.

ELECTION/APPROVAL OF MEMBERSHIP

All members shall be elected at the Annual Business Meeting, except for Candidate Members who shall be approved by the Executive Committee periodically throughout the Association year, and Associate and Active Candidates referred by the AUA as otherwise fulfilling Active Membership requirements for those certified within the last 24 months (as per the AUA Bylaws) or Associate candidates moving through the AUA Fast Track Associate Status (as per the AUA Bylaws) who shall be approved by the Executive Committee periodically throughout the Association year.

Section E.

ACTIVE MEMBERS

Requirements for membership are as follows:

1. Possession of an unlimited license to practice medicine and surgery in the State, Province or Country of the applicant's practice.
2. Possession of an M.D. or D.O. degree, or United States medical licensure equivalent, and completion of an ACGME accredited urology residency or equivalent by the Royal College of Surgeons (RCS) in Canada or the Quebec Board of Urology or the certifying Board of Urology in the country.
3. Limitation of practice to the specialty of Urology.
4. Certification by the American Board of Urology (ABU), the Royal College of Surgeons (RCS) in Canada or the Quebec Board of Urology or the certifying Board for Urology in the country where practicing within the geographic boundaries of the AUA.
5. Recommendation for membership by two (2) voting members of the AUA, except if certified within the last 24 months (as per item 4 in this section).
6. Letter of recommendation from the Chief of Urology, Medical Director, or Chair of the Credentials Committee at the hospital(s) where the applicant has privileges.

Section F.

SENIOR MEMBERS

Active members are eligible for Senior Membership in the Section if they have been Active Members for 20 years in either the Section or the AUA and are retired, or are permanently disabled.

Section G.

ASSOCIATE MEMBERS

Requirements for Associate membership are the same as Active membership, except for Board certification. Associate Members shall pay the annual dues, assessments, and initiation fees as determined by the Board of Directors. They shall not be eligible to vote or hold office, nor has right, title or interest in the real or personal property of the Section.

1. Candidate Members Eligible for Fast Track Associate Status. Associate membership in the Section and the AUA will be offered to all Candidate members who have passed the qualifying examination (Part I) of the American Board of Urology.
2. Associate Membership is available to non-member urologists who are practicing within the geographic boundaries of the Section but are not certified by the American Board of Urology. Doctors of Osteopathy who complete AOA-approved urology residency programs and are certified by the American Osteopathic Board of Surgery are eligible for Associate Member Status.

If an Active Member fails to become recertified as required by the American Board of Urology (or other certifying Board), the AUA and/or Section will transfer the individual to Associate Member Status. If an Active member becomes decertified by the American Board of Urology or other certifying board, the member shall be automatically dropped for non-compliance with AUA and/or Section Bylaws, pursuant to Expulsion and Reinstatement policies.

3. Waiver of First -Year Dues. Associate Members who have passed the ABU certifying examination (Part II) will be transferred to Active membership in both the Section and the AUA and notified that active membership dues are waived for the first year.

Section H. **ALLIED MEMBERS**

Allied membership is available to Non-Physician Scientists and is not usually available for physicians certified by medical boards. However, in exceptional instances, persons in related fields of medicine and science, who do not qualify for other categories of Section Membership, may be considered for Allied Membership provided they have contributed significantly to the specialty of Urology. They shall be nominated by two Active or Senior members who shall furnish the Section Secretary with the curricula vitae and other pertinent information.

Allied Members shall pay the annual dues, assessments and initiation fees as determined by the Board of Directors. They shall not be eligible to vote or hold office.

Section I. **HONORARY MEMBERS**

Honorary Members shall be scientists who have achieved outstanding prominence in a field of medicine related to Urology, Past Presidents of the Section who have retired from the active practice or Urology, and/or other distinguished urologists. Candidates must be nominated by the President and endorsed by at least two (2) Active or Senior Members. They must be elected by a majority vote of the Board of Directors and will be presented at the Annual Meeting of election. Honorary Members who have been Active or Senior Members shall retain their previous rights in the Section.

Section J. **CORRESPONDING MEMBERS**

Corresponding Membership is available to urologists who practice beyond the geographic boundaries of the Section. The applicant shall be a member of the local or national urological organization in his/her country, and a letter of endorsement of that membership shall be submitted to the Section with the application form. If a national organization does not exist within the applicant's country, a waiver of this requirement may be considered by the Board of Directors. The applicant's practice must be limited entirely to the specialty of urology. The applicant must be a graduate of an acceptable medical school who has received a Doctor of Medicine or equivalent degree. The applicant must be in practice for a minimum of two (2) years after completion of residency.

Corresponding Members shall pay the annual dues, assessments and initiation fees as determined by the Board of Directors.

Section K. **CANDIDATE MEMBERS**

Candidate Membership is established to extend Sectional educational and professional advantages to urological residents. The Candidate Member must be practicing and studying within the geographic boundaries of the Section

1. ACGME. Medical Doctors (MD) or Doctors of Osteopathy (DO) enrolled in a urology residency program approved by the Residency

Review Committee and ACGME are eligible for Candidate Membership; and after completing training and passing part 1 of the ABU certifying examination are eligible for Associate Member status (Fast Track), Section G.1. Those who successfully pass all parts of the ABU qualifying examination are eligible for Active Member status, Section E.

2. AOA. Doctors of Osteopathy enrolled in an AOA-approved urology residency training program are eligible for candidate member status. DOs completing their training and passing the American Osteopathic Board of Surgery certifying examination are eligible for Associate Member status, Section G.

Section L.

PUBLICATION OF NAMES

The names of applicants for Active membership which have been approved by the Secretary and Membership Committee shall be available to the membership prior to the Annual Business Meeting.

Section M.

TRANSFER OF MEMBERSHIP

An Active, Senior, or Associate member in good standing of the AUA and of another Section of the AUA who moves his or her residence or practice into the territory of this Section, and who meets all membership qualifications, is automatically eligible for membership in the Section upon presentation of credentials to the Board of Directors of the Section. These credentials shall include his or her previous Section records and a letter from that Section's Secretary indicating the applicant's membership status.

Section N.

EXPULSION, DISCIPLINE, RESIGNATION AND REINSTATEMENT

All matters of discipline shall be the responsibility of the AUA, in accordance with the Bylaws of the AUA. Members disciplined by the AUA will automatically be disciplined by the Section. Any member expelled by the AUA shall automatically have his or her Section membership terminated. All disciplinary actions taken may be appealed to the AUA in accordance with the Bylaws of the AUA.

Any member who has resigned or whose membership has been deleted for non-payment of dues, or for any other reason, may, after payment of any back dues owed, request reinstatement, subject to the approval of the Section Membership Committee.

ARTICLE II OFFICERS

Section A.

OFFICERS OF THE SECTION

1. Officers of the Section shall be the President, the President-Elect, the Immediate Past President, the Secretary, the Treasurer and the Historian.
2. All Officers shall be elected at the Annual Business Meeting from the slate presented by the Committee on Nominations or by nomination from the floor. A majority vote of those present and voting shall be necessary for election.
3. Officers shall serve without financial remuneration and hold office from the conclusion of the Annual Meeting at which they are elected until the completion of their term of office or until their successors are elected in accordance with these Bylaws.
4. Vacancies that occur in any of the Offices may be filled by a majority vote of the Board of Directors.
5. Candidates for office shall be Active or Senior Members in good standing of the Section, or honorary members who previously were

Active members in good standing of the Section. In either case, they must be members in good standing of the AUA.

Section B.

PRESIDENT

1. The President shall be the Chief Executive Officer of this Section. He/she shall serve as Chairman of the Board of Directors and the Executive Committee. He/she shall preside at all meetings of these bodies and at the Scientific and Business Meetings of the Section. His/her term of office shall be one (1) year and he may not be re-elected.
2. He/she shall appoint Special and Ad Hoc Committees and shall make appointments to fill vacancies on committees appointed by the Executive Committee.
3. He/she may call special meetings of the Executive Committee and the Board of Directors.
4. He/she shall direct the attention of the Board of Directors to violations of the Bylaws and to matters of discipline of members.
5. He/she may make nominations for Honorary Membership.
6. He/she shall appoint an individual urologist and spouse to serve as Chair of the Committee on Arrangements.
7. He/she shall be a member of the Committee on Programs.

Section C.

PRESIDENT-ELECT

1. The President-Elect after serving one (1) year in Office shall be elevated to the Office of President automatically and without standing for election.
2. He/she shall perform any duties which are assigned by the President and shall preside in the absence of the President.
3. He/she shall be a Member of the Executive Committee, Committee on Programs and Board of Directors.

Section D.

PAST PRESIDENT

1. The Immediate Past President shall be a Member of the Board of Directors, the Executive Committee, the Committee on Nominations and the Committee on Programs. His/her term of Office shall be one (1) year.

Section E.

SECRETARY

1. His/her term of Office shall be three (3) years or until his/her successor assumes Office. He/she may not be elected to more than one (1) term.
2. He/she shall keep precise and complete records of all the business activities and correspondence of the Section.
3. He/she shall oversee the application process and membership records, shall receive and maintain the official Section documents, and shall give formal notice of the Annual Meeting and of special meetings. The Secretary shall preserve the Minutes and records of such meetings.
4. He/she shall notify by letter each newly elected Member of his/her election and send him/her a Certificate of Membership with notification to visit the Section website for a copy of the Section Articles of Incorporation and Bylaws. He/she shall notify Members promptly of any change in their membership classifications.
5. He/she shall cause to be supplied at the expense of the Section:
 - a. The Membership Directory of the Section shall be made available on the Section's website.
 - b. The Program and Abstracts which will be printed, or provided in electronic format or electronically on the

Section's website, for distribution for the yearly Meeting only.

6. He/she shall send official notice of the date, time and place of the Annual Meeting to each Member at his/her last known address at least sixty (60) days before the date of the opening session. Notices of Special Meetings giving the purpose, place, date and hour shall be sent at least twenty-one (21) days before the date selected.
7. He/she shall arrange the order of business for meeting of the Executive Committee, Board of Directors and Annual Business Meeting of the Section.
8. He/she shall be a member of the Executive Committees, Board of Directors, the Committee on Programs, the Committee on Bylaws, the Committee on Arrangements and the AUA Membership Committee. The Secretary shall determine the program, including papers and panels, for the Annual Meeting. He/she shall be Chairman of the Committee on Programs.
9. He/she shall report to the Executive Committee at least thirty (30) days prior to the Annual Meeting all existing and expected vacancies on Standing Committees, Special Committees, and Representatives to AUA positions for which the Executive Committee determines appointments according to these Bylaws. The Secretary shall also report to the Committee on Nominations, at least (30) days prior to the Annual Meeting, all existing and expected vacancies for nominees for positions in the AUA and the Section in accordance with these Bylaws.
10. He/she shall notify the AUA of the names of members who have been selected to represent the Section on AUA Committees, and the name of any member who has not maintained Section membership in good standing.
11. He/she shall cause to be published appropriate newsletters during the year. All newsletters must be processed by the Secretary.
12. He/she shall notify, by letter, each newly elected officers or appointed committee member of his or her election or appointment and of the tenure of that office.
13. The Executive Director shall be the Assistant to the Secretary and shall carry out the routine duties of the Office under the direction of the Secretary.

Section F.

TREASURER

1. His/her term of Office shall be for three (3) years or until his/her successor assumes Office and may not be elected to more than one (1) term.
2. The Treasurer shall be the custodian of the funds and all the property of the Section. The Treasurer shall work with the Executive Director overseeing all general accounting and financial record keeping functions. He/She shall assure prompt payment of all authorized bills of the Section.
3. He/she shall purchase, sell or transfer securities of the Section only upon recommendation of the Committee on Finance or approval of the Executive Committee.
4. He/she shall, at the expense of the Section, give bond for such sum as may be determined by the Board of Directors, but in no instance less than fifty thousand dollars (\$50,000.00).
5. At the discretion of the Executive Committee or the Committee on Finance, he/she shall have an annual compilation made of the finances of the Section by a Certified Public Accountant and shall present a written report at the Annual Meeting of the Section.

6. He/she shall prepare annually a list of Members in arrears and present this list to the Board of Directors.
7. He/she shall be a member of the Board of Directors, the Executive Committee, the Committee on Programs, the Committee on Finance, and the Investment Advisory Committee.
8. The Executive Director shall be the Assistant to the Treasurer and shall carry out the routine duties of the Office under the direction of the Treasurer.

Section G. HISTORIAN

1. This Section shall have a Historian who is elected by membership. He/she shall serve a term of three years, and can be re-elected to serve a second three year term. He/she must be nominated for Office by the Committee on Nominations or from the floor and be elected at the Annual Business Meeting by a majority vote of those present and voting.
2. The Historian is a non-voting member of the Board of Directors and has no functional duties within the Section other than those described below.
3. He/she shall prepare a history of the Section and shall keep records of changes in the Section to its history. He shall present an annual report to the Board of Directors and to the Section at the Annual Business Meeting.
4. He/she shall prepare for publication any historical issues relative to the Section and present them to the Board of Directors.
5. He/she shall be custodian of all records, papers and various paraphernalia which properties are no longer in the custodial care of the Secretary or other Officers of the Section.
6. He/she shall report at the Annual Business Meeting the names of all Members who died in the preceding year.
7. He/she shall be responsible for recording the activities and highlights of each Annual Meeting and shall obtain appropriate documentation of the Meeting.

Section H. EXECUTIVE DIRECTOR

The Executive Director shall be the chief administrative office of the Association, and shall report directly to the Board of Directors, of which he/she shall be an ex officio, non-voting member. The Executive Director need not be a physician nor a member of the Section. He/she shall have the authority to carry out all policies and programs of the Section within the framework of the budget and subject to the direction of the elected officers and the Board of Directors.

ARTICLE III BOARD OF DIRECTORS

Section A. BOARD OF DIRECTORS GENERAL CONSIDERATIONS

1. The Board of Directors, herein afterward known as the Board, shall consist of the Executive Committee, the Chairpersons of the Standing Committees, the Chairperson of the Health Policy Council, the Section Representative to the Board of Directors of the AUA and at least one (1) Director or one (1) Alternate from each state or territory of the Section in which ten (10) or more Active or Senior Members reside. States or territories in which more than one hundred (100) Active or Senior Section Members reside shall have an additional Director and Alternate for each one hundred (100) Active or Senior Members or fraction thereof. Members of the

- Board must be Active Members of the Section and of the AUA.
2. The Board is responsible for the administration and management of the Section.
3. Directors and one Alternate for each Director shall be elected for a term of three (3) years and may not succeed themselves. Serving as an Alternate shall not disqualify a Member from serving as a Director.
4. An unfinished term of a Director shall be served by the Alternate.
5. A majority of the Board of Directors shall constitute a quorum.

Section B.

MEETINGS

1. Board shall meet annually at the time of the Annual Meeting of the Section.
2. Special Meetings of the Board may be called by the President or by request of a majority of Directors. Notice of special meetings must be sent out by the Secretary to each Board Member and Alternate at least twenty-one (21) days before the date of the Meeting.
3. The matters to be discussed and voted upon at any duly called meeting of the Board of Directors shall not be limited to those set forth in the notice of such meetings.
4. In order to become better acquainted with the activities of the Section, Alternates should attend Meetings of the Board as non-voting members when not substituting for a Director.

Section C.

DUTIES

1. Order the disbursement of money.
2. Select the time and place of the Annual Meeting of the Section after considering the recommendation of the Committee to select meeting sites. The Annual Meeting may be omitted by a majority vote of the Board.
3. Receive the annual reports of the Secretary, Treasurer, Historian and the Executive, Standing and Special Committees and take any action on the reports it deems appropriate in accordance with these Bylaws.
4. Elect Honorary members from nominations received from the President. Names of elected members shall be read to the Membership at the Annual Business Meeting.
5. Elect every third year by a majority vote one current Member or past Director, other than an Officer, to serve on the Executive Committee of the Section. If the Director is currently serving as a State Director, that State may elect another Director to complete the unfinished term.
6. Elect by majority vote qualified Members to fill Unfinished terms in any elected position of the Section.
7. When the Board of Directors deems it appropriate, it may recommend to the Membership the nomination of any Member considered qualified for service as an officer of the AUA. On approval by the Membership, such nomination shall be forwarded to the AUA Nominating Committee by the Section Member of the Nominating Committee of the AUA.
8. Transact any business not specified or prohibited by these Bylaws.
9. It shall employ the Executive Director whose duties, responsibilities and authority shall be as specified in Article II, Section H of these Bylaws. Report all actions to the Membership at the Annual Business Meeting.

Section D.

THE EXECUTIVE COMMITTEE OF THE BOARD OF DIRECTORS

1. The Executive Committee shall consist of the President, President-Elect, Immediate Past President, Secretary, Treasurer, Chair-person of the Committee on Education and Science, and one (1) Director elected by the Board for a term of three (3) years. The Director may not succeed himself/herself. The President shall be the Chairperson.
2. Duties.
 - a. To conduct the business of the Section between Meetings of the Board of Directors except as otherwise provided in these Bylaws. All action taken by the Committee shall be reviewed by the Board.
 - b. Approve Candidate member applications, and Associate and Active candidate members referred by the AUA as stipulated in Article I, Section D.
 - c. Appoint all Standing and Special Committees, excluding the Committee on Arrangements and Nominating Committee.
 - d. Nominate Section recipients for AUA Awards.
 - e. Unfinished terms of Representatives to AUA Committees shall be filled by the Executive Committee.
 - f. Constitute the Committee on Programs which is chaired by the Secretary.
 - g. At the request of the AUA, nominate three (3) Section Members interested in research to serve on the AUA Research Council. If appointed, the Members will serve as Representatives on the AUA Research Council for a four (4) year term renewable once.
3. The Committee shall meet on call of the President.

ARTICLE IV REPRESENTATIVES TO THE AUA

Section A.

GENERAL CONSIDERATIONS

Representatives to the AUA must be Active Members of the Section and the AUA. They shall reflect the expressed policies of the Section in keeping with the best interest of the AUA.

Section B.

REPRESENTATIONS ACCORDING TO AUA BYLAWS

In accordance with Article V, Section 1 of the Bylaws of the AUA, the Section will have Representatives as follows:

1. Editorial Committee: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association. If there is more than one member on the Committee, One Member shall be appointed to serve as Chairperson of the Editorial Committee of the Section.
2. Board of Directors Representative: one (1) Member and one (1) Alternate Member elected in odd years to serve for two (2) years or until his/her successors are elected. The Member shall be limited to two (2) terms of service not counting any term(s) as Alternate.
3. Nominating Committee: one (1) Member and one (1) Alternate to serve for one year or until his/her successors are elected. The terms of service shall be in accordance with the Bylaws of the American Urological Association.
4. Research Committee: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association. The Members will serve the first term as Alternates and the latter term as Representatives.

5. Health Policy Council: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association. One member will be appointed to Chairperson, another Vice Chairperson, and if more than two members on the Committee, they shall be named members at large.
6. Membership Committee: one (1) Member who is the current Secretary of the Section.
7. Bylaws Committee: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association. One member will be appointed to Chairperson, another Vice Chairperson, and if more than two members on the Committee, they shall be named members at large.
8. Audio-Visual Committee: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association.
9. Judicial and Ethics Council: the number of representatives and terms shall be in accordance with the Bylaws of the American Urological Association.

Section C.

START OF TERM OF SERVICE

Representatives of the Section to the AUA shall begin their terms of office immediately following the AUA Meeting of the year in which they are elected or appointed.

Section D.

RESPONSIBILITIES TO BOARD OF DIRECTORS

These Representatives shall report to the Board of Directors annually.

ARTICLE V COMMITTEES

Section A.

STANDING COMMITTEES

1. Each Standing Committee shall consist of at least six (6) Active Members of the Section. Appointments will be made by the Executive Committee. One of the Committee Members will be named Chairperson and one Vice-Chairperson by the Executive Committee. A Committee Member who is unable to participate actively in the work of the Committee may be replaced by the Executive Committee.

Two (2) Members of each Committee shall be appointed annually for a term of three (3) years and no Member may serve more than two (2) terms on any one Committee. The exception: an individual who rises to the level of Chair of the Committee on Education and Science shall have a three-year term as Chair.

2. A Standing Committee Chairperson may appoint sub-committees from the general Membership with a Standing Committee Member as Chairperson.
3. The Chairperson of each Standing Committee shall make a formal report to the Board of Directors annually.
4. There shall be four (4) Standing Committees as follows: (1) Education and Science, (2) Finance, (3) Membership, and (4) Bylaws.

a. THE COMMITTEE ON EDUCATION AND SCIENCE

- (1) It shall direct the scientific and educational activities of the Section, understanding that promotion of these activities is the primary purpose of the Section. The Committee should recognize that only its strong, dedicated and enlightened leadership can make

worthwhile all other Section activities and accomplish the stated objective of the Preamble to these Bylaws. To this end, it should be boldly innovative both in its continuing effort to upgrade the quality of the scientific sessions of the Annual Meeting and in its designs to stimulate the development of strong programs of postgraduate education and research within the Section.

- (2) It shall cooperate with the Committee on Programs in making specific plans for the Scientific Sessions of the Annual Meeting and be responsible for the Visual Education Program, Pyelogram Program and Scientific Exhibits.
- (3) It shall administer the Prizes and Awards Programs of the Section, be responsible for expansion of them and appoint Judging Committees to select the recipients.
- (4) It shall supervise the Postgraduate Education Programs of the Section and cooperate with the AUA Committee on Continuing Education in its activities within the Section.
- (5) Its Chairperson shall serve as a Member of the Executive Committee of the Board of Directors, and in so - doing as a Member of the Committee on Programs. Once elected Chair, the term of office shall be three years.

b. THE COMMITTEE ON FINANCE

- (1) It shall advise the Board of Directors on the overall fiscal policies of the Section and, with the approval of the Board, formulate fiscal rules and regulations.
- (2) The Committee shall examine and verify to the Section the annual compilation of finances of the Section submitted by the Section Treasurer and a compilation of the Arrangements and Seminar Committees. A certified audit of the Section's account shall be requested when deemed appropriate.
- (3) The Treasurer shall be a Member ex-officio.
- (4) In cooperation with professional investment advisory services employed by the SESAUA shall advise the Treasurer on the sale, purchase, and/or transfer of the investments of the Section.
- (5) It shall recommend the Section's investment counselor(s) and/or growth managers; monitor the Section's portfolio at least quarterly for adherence to establish guidelines and performance vs. objectives; and provide formal reports on performance with recommendations for Board of Directors meetings.

c. COMMITTEE ON MEMBERSHIP

- (1) It shall examine applications for Active Membership and Associate Membership that have not been referred by the AUA as stipulated in Article 1, Section D.
- (2) It shall solicit new Members from among the qualified Non-member Urologists residing within the geographical boundaries of the Section.

d. COMMITTEE ON BYLAWS

- (1) It shall review the Articles of Incorporation and Bylaws annually and make recommendations to the Board of Directors as to any changes that seem desirable.
- (2) It shall consider all proposed amendments to the Articles of Incorporation and Bylaws submitted in writing and make recommendations to the Board as to disposition.
- (3) It is the responsibility of the Committee to draft proposed changes in the Articles of Incorporation and Bylaws and to furnish them to the Secretary in such a time frame that they may be published and circulated to the Membership at least thirty (30) days in advance of the Annual Meeting.
- (4) The Secretary shall be Member ex-officio.
- (5) The Chairperson and the Vice-Chairperson shall serve on the AUA Bylaws Committee.

Section B.

SPECIAL COMMITTEES

1. COMMITTEE ON PROGRAMS

- a. The Committee on Programs shall consist of the Members of the Executive Committee; the Secretary shall be the Chairperson.
- b. Duties.
 - (1) It shall make long range plans for the content and general format of the Annual Meeting of the Section in close cooperation with the Committee on Education and Science.
 - (2) It shall arrange the Scientific Program for the Annual Meeting and select from submitted titles of papers those best suited to the contemplated plan of the program.
 - (3) The Chairperson shall report to the Board of Directors at the Annual Meeting.

2. COMMITTEE TO SELECT MEETING SITES

- a. The Committee to Select Meeting Sites shall consist of the Secretary, the Treasurer and a Chairperson, who shall be a Past President selected by the Executive Committee. The Chairperson shall serve for no more than five (5) years.
- b. It shall select the sites for future Annual Meetings subject to the approval of the Board of Directors.

3. COMMITTEE ON NOMINATIONS

- a. The Committee on Nominations shall consist of five (5) Members. These are the three (3) most recent living Past Presidents in attendance at the Annual meeting and two (2) at-large Members who are Active Members of the Section and AUA. The At-Large Members are nominated and elected, or appointed by the Board of Directors to fill a vacancy, for a term of two (2) years by the Membership of the Section during the Annual Business Meeting. Those Committee Members elected by the Section Membership shall serve no more than two (2) consecutive terms. No more than two (2) Members of the Committee shall reside in the same state.
- b. The Chairperson shall be the Past President with most seniority.
- c. The Committee shall present to the Section Membership at its Annual Business Meeting a slate of nominees of Active

Members in good standing in the Section and AUA. There shall be one (1) candidate for each position as follows:

- (1) Nominees for positions in AUA: shall be in accordance with the Bylaws of the American Urological Association.
- (2) Nominees for positions in Section:
 - (a) President-Elect who automatically shall assume office of President at the end of the term. Any nominee must have had three (3) years of satisfactory experience as a Member of the Board of Directors or have been General Arrangements Chairperson. Each year for one (1) year term.
 - (b) Historian who shall serve a term of three (3) years and may be re-elected to serve a second three (3) year term.
 - (c) Members and Alternate Members of the Board of Directors whose immediate predecessors are completing their three (3) year term of service, as prescribed in Article III, after consultation with the State Urological Societies. Term of election is three (3) years.
 - (d) Secretary of the Section. He/she may not be re-elected. Every three (3) years for three (3) year term:
 - (e) Treasurer of the Section. He/she may not be re-elected. Every Three (3) years for three (3) year term:
 - (f) No Member of the Nominating Committee shall be eligible for any elective position except that incumbents shall continue for their stated terms of office.
 - (g) Nominations for all elected positions must be called for from the floor by the President at the Annual Business Meeting before any voting takes place.

4. COMMITTEE ON ARRANGEMENTS

- a. The Committee on Arrangements shall consist of the Executive Committee and one Active of Senior Member in good standing that shall be appointed by the President to serve for one (1) year as Chair. The next meeting year's Arrangements Chair shall serve on the Committee ex-officio. When a meeting does not fall within the Section's boundaries, the Executive committee may elect not to appoint an active or senior member to serve as Chair, and the President shall assume those responsibilities.
- b. The Committee on Arrangement shall make all necessary arrangements for the Annual Meeting under the direction of the President. It shall prepare a meeting budget that is financially self-supporting as its objective. The Committee on Arrangements shall keep adequate records of its activities.
- c. The Chairperson shall have the power to appoint all local subcommittees and name the Chairperson of each.
- d. The Chairperson shall make a final report to the Board of Directors at its next Annual Meeting.
- e. With the approval of the President, the Committee shall arrange and supervise the Presidential Dinner to be held during the Annual Meeting. The cost of this dinner shall be borne by the Section. The dinner may be omitted by the

- majority vote of the Board of Directors.
5. **HEALTH POLICY COUNCIL**
- a. The Health Policy Council shall advise the Membership on professional relations, socioeconomic, medical, legal and insurance matters as they relate to the teaching and practice of Urology. They shall also advise on National and Local legislative initiatives effecting urology coding and reimbursement issues, and peer review.
 - b. It shall investigate all questions which concern principles of medical ethics and those involving the rights and standing of Members in relation to other Members to the public under the direction of the Board of Directors.
 - c. The Committee shall consist of one (1) Member from each state in the Section, Puerto Rico, and Panama plus the Chairperson.
 - d. The State Representative and his/her alternate shall be elected by the State Society to serve a term of three (3) years.
 - e. The Chairperson of the Health Policy Council shall be appointed by the Executive Committee for three (3) years and shall serve as one Section Representative to the Health Policy Council of the AUA.
 - f. The Vice-Chairperson of the Health Policy Council shall be appointed by the Executive Committee for three (3) years and shall serve as the Section's second Representative to the Health Policy Council of the AUA.
 - g. The Vice-Chairperson of the Health Policy Council may be advanced to be Chairperson of this Council after completion of the three (3) year term.

Section C.

AD HOC COMMITTEES

1. These Committees are appointed and the Chairperson named by the President annually to perform specific jobs not lying within the purview of any existing Committee. They may be reappointed or reconstituted; however, if the need for the Committee exists beyond three (3) years, it should become a Standing or Special Committee.
2. The Chairperson shall report to the Board of Directors when requested by the President.

ARTICLE VI MEETINGS

Section A.

ANNUAL MEETINGS

1. The Annual Meeting of the Section shall be held at such time and place as is designated by the Board of Directors. The Annual Scientific Meeting may be omitted by majority vote of the Board.
2. Official notice of the time and place of the Annual Meeting must be sent to each member in the form of a newsletter or otherwise at least ninety (90) days before the meeting.
3. The order of the program of the scientific portion of the Annual Meeting shall be directed by the Secretary in cooperation with the Committee on Programs, the Committee on Education and Science and the Committee on Arrangements.
4. Papers.
 - a. Authors who wish to present papers at the Annual Meeting must submit titles and abstracts to the Secretary in

accordance with deadlines established by the Committee on Programs.

- b. Time allowed for presenting and discussing papers shall be determined by the Committee on Programs.
5. Officers shall be installed at the end of the Annual Meeting.
6. Business Meeting.
 - a. The Annual Business Meeting shall be held during the time of the Annual Meeting.
 - b. The order of business at the Annual Business Meeting shall be set by the Secretary.

Section B.

SPECIAL MEETINGS

1. Special Meetings of the Section for any purpose other than effecting changes in the Bylaws may be called by a two-thirds (2/3) vote of the Board of Directors and shall be held at such time and place as directed by the Board.
2. Notice of a Special Meeting must be sent to the Members at least twenty-one (21) before such a Meeting. The notice must contain a statement of the business to be conducted, and no other business shall be conducted at the Special Meeting.

Section C.

QUORUM

The members' registered and eligible to vote who are present at the Annual Business Meeting and at any Special Meetings shall constitute a quorum for such meetings, and, unless otherwise specifically required by these Bylaws or applicable law, the vote of a majority of such members shall be required to approve any action at such meeting.

ARTICLE VII DUES AND FEES

Section A.

DUES, FEES AND ASSESSMENTS - DETERMINATION

The annual dues, the initiation fee and special assessments shall be determined by the Board of Directors on advice of the Committee on Finance. The annual dues are payable in advance. Any Member with a past due account over 120 days shall be dropped from the rolls and his/her name presented to the Board of Directors for appropriate action. Members requesting transfer to Senior status may delay payment of dues until the Board of Directors has ruled on their request.

Section B.

FISCAL YEAR

The fiscal year of the Section shall date from January first to December thirty-first.

ARTICLE VIII TERRITORY

The Section shall comprise the states of Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and the territories of Puerto Rico, Panama and the U.S. Virgin Islands. Individuals who initially join the Section in which they practice, and then at a future date relocate to another Section, may retain Section membership.

**ARTICLE IX
SEAL OF CORPORATION**

The Corporate seal shall be inscribed thereon the name of the corporation and the word "Seal". Said seal may be altered at the pleasure of the majority of the Membership voting at an Annual Meeting and may be used by causing it or a facsimile thereof to be impressed or otherwise used.

**ARTICLE X
AMENDMENTS**

Section A.

REPEALING / AMENDING BYLAWS

A Quorum being present these Bylaws may be repealed or amended by a two-third (2/3) vote of the Members present and voting at any Annual Business Meeting, provided that the proposed revision or amendment is provided to the Membership at least thirty (30) days prior to the Annual Meeting at which such action is to be taken.

**ARTICLE XI
RULES OF ORDER**

Sturgis Standard Code of Parliamentary Procedure, current edition, shall govern the proceedings of the Section unless otherwise provided in these Bylaws.

Necrology Report

In loving memory of:

Paul L. Bunce, MD
Carrboro, NC

Robert F. Carter Jr., MD
Ocean Springs, MS

John Cashman, MD
Wilmington, NC

Joel Arnold Clark Jr., MD
Fernandina Beach, FL

Michael H. Lake, MD
Columbus, GA

Toxey M. Morris, MD
Hatesburg, MS

Mario Riveron, MD
Altamonte Springs, FL

George C. Sivak, MD
Boca Raton, FL

Louis Sieg Sonne, MD
Louisville, KY

Thomas Harris Williams Jr., MD
Montgomery, AL

Preliminary Treasurer's Report

The state of the SESAUA finances are excellent despite a down turn in investments in the last quarter of 2018. The SESAUA fund balance as of December 31, 2018 was \$5,259,844 and reflects an operating loss of \$381,131 for the year 2018. We hosted a very profitable meeting in Orlando with net profit of \$161,468.29. We also had interest and dividend income of \$122,450.14 totaling \$293,918.42 to offset the yearly investment loss of \$443,054.62 after losing \$514,894 in the fourth quarter.

Assets:

Accounts receivable balance of:	\$65,100
Deferred meeting income of:	\$203,729
Checking account at JP Morgan Chase Bank:	\$284,192
Savings account balance with JP Morgan Chase Bank:	\$94
Pre paid postage:	\$2000
Pre paid insurance:	\$1806
TOTAL:	\$841,207

SESAUA investments are healthy at Vanguard. Our investment portfolio is similar to the AUA and we benefit by being awarded the AUA investment rate. For the period ending December 31, 2018 the portfolio composition was as follows.

Fixed Income:	\$1,774,043	35%
Equities:	\$3,354,027	65%
Total Investments:	\$5,128,027	100%

The SESAUA financial situation remains very stable. Our investments performed extremely well in 2018 and weathered the fourth quarter downturn. Our advisory fees are only \$2,349.76, which is 0.046% of our total portfolio.

Major sources of income:

Corporate Support:	\$445,900
Membership Dues:	\$250,740
Hotel Commissions:	\$35,323
Meeting Registration:	\$147,348
TOTAL:	\$879,331

Of note, corporate support was up \$30,000 to nearly \$446,000 from the steady \$415,000 over the last 3 previous meetings. Please note the listing of our Promotional Partners in the detailed report which represented \$242,500. Make time to speak with them during the meeting and thank them for their support.

Also of note, there is the Society Contributions Report for those members who made additional donations to support the SESAUA.

2018 HIGHLIGHTS:

1. SESAUA 2018 Annual Meeting in Orlando was very successful with total income of \$631,954.86 and net income of \$161,468.38
2. SESAUA residency programs awarded: \$85,450
3. International Volunteerism: \$35,971.91
4. UROPAC: \$10,000
5. General Donations: \$21,265.54
6. Assistance to Members from Puerto Rico with meeting and dues for Hurricane relief

With varying investment returns and looking at the SESAUA trying to becoming budget neutral excluding investment income the past year showed:

Total Operating Income:	\$892,263.97
Total Operating Expense:	\$811,269.60
Net Income:	\$80,994.81
Donations and Contributions:	\$66,721.91
Awards and Grants:	\$84,450.00
Total Philanthropic:	\$149,171.91
Net Loss exclusive of Investments:	\$68,177.10

This represents only 1.30% loss of total fund balance and 7% of the total operating income for nearly \$150,000 of philanthropic ventures and support of our residents. We will continue to look for areas to close this gap.

As I finish my second year as Treasurer I would like to thank you again for your confidence in my performance. I look forward to serving the section in this position for another year.

Respectfully submitted,
David M. Kraebber, MD
SESAUA Treasurer

Membership Candidates and Transfers

* *Application not complete*

APPLICANTS

Active

BIENVEU, MD James
BOND, MD Kevin
BUETHE, MD David
BURRIS, MD Michael
CABRERA-PIQUER, MD Fernando
CAMPBELL, MD Elena
CHOPRA, MD Sonia
CORBYONS, MD Katherine
DANGLE, MD, MCh, FAAP Pankaj
ERCOLE, MD Cesar
GONZALEZ, MD Froylan
HAKKY, MD Tariq
HOLSTEAD, MD Joshua
* HSIA, MD Michael
HUGHES, MD Charles Tanner
* KARTHA, MD Ganesh
KASRAEIAN, MD, FACS Ali
KENNESON, MD Mary
* KHETERPAL, MD Emil
* KOZINN, MD Spencer

LAY, MD Aaron
MACK, MD Darren
* MARTINEZ, MD Daniel
MICHIGAN, MD Andrew
* MILES, MD Ruth
MOSS, MD Jared
NIX, MD Jeffrey
O'MALLEY, MSc, MD, FRCSC Padraic
OOMMEN, MD Mathew
ORTIZ-ALVARADO, MD Omar
RICH, MD David
* RUKSTALIS, MD Daniel
* SACHEDINA, MD Nasheer
SANTA CRUZ, MD Carlos
* SLEEPER, MD Joshua
* STOREY, MD Benjamin
TERRELL, MD Freddie
TERRY Jr., MD, BA William
WONG, MD Philip

ACTIVE APPLICANTS: 39

Affiliate

JAISWAL, M.Sc, PhD Praveen

AFFILIATE APPLICANTS: 1

Associate

ALAM, MD Alireza
ARORA, MD Naveen
BAYNE, MD Christopher
BELL, MD John Roger
BENSON, MD Cooper
BERTRAND, MD Laura
BROUSSARD, MD Andre
* BRUGIATI, MD Carlos
CHOI, DO Kellen
CHONG, MD William
CURRIN, MD Mark
EMTAGE, MD Justin
GILLS, MD Jessie
GUTHRIE, MD Patrick
HARTSELL, MD Lindsey
* LANGFORD, DO, FACOS Carolyn
* LATEFI, DO Ali
LORENTZ, MD Charles

MCCALL, MD, BS Andrew
MCCASLIN, MD Ian
MCCOY, MD Jacob
OELRICH, MD, PhD Beibei
PALAYAPALAYAM GANAPATHI, MD
Hariharan
RAHEEM, MD Omer
SALTZMAN, MD Amanda
SHAH, MD, MCh, MRCS Hemendra
SWAIN, MD Sanjaya
TAYLOR, MD Abby
TERRY, MD Russell
VAN WYK, DO Rustan
VYAS, MD Paulas
WINSHIP, MD Brenton
ZAMZOW, DO Brent

ASSOCIATE APPLICANTS: 33

TOTAL APPLICANTS: 73

INTERNAL TRANSFERS

To Active Membership

ANGEL, MD James
BABAIAH, MD Kara
GREEN, MD Gordon
HSI, MD Ryan
LACY, MD John
MARTIN, MD, MPH Aaron
PICKENS, MD Ryan
SCARPATO, MD, MPH Kristen
BURNNO, MD Derrick

ELLSWORTH, MD Pamela
GINGRICH, MD Jeffrey
KEENAN, MD Alison
MASON Jr., DO, FACS Roy
TRABUCCO, MD Arnaldo
VANASUPA, DO Billy
WILDENFELS, MD Patience
WOMBLE, MD Paul

TO ACTIVE MEMBERSHIP INTERNAL TRANSFERS: 17

To Associate Membership

GREENSTEIN, DO Marc
KOWALIK, MD Urszula

TO ASSOCIATE MEMBERSHIP INTERNAL TRANSFERS: 2

To Senior Membership

BANKSTON, MD James
BAUM, MD Neil
BRYSON, MD
CRAWFORD, MD Vinton
DEUS, MD Frank
DRAY, MD Robert
ECKSTEIN, MD, FACS Charles
EZELL, MD Gilbert
GRAPEY, MD David
GUERRA, MD Manuel
HARMON, MD Edwin

HILL Jr., MD Lawrence
HUDSON, MD Henry
LIPSITZ, MD, FACS David
MASSEY, MD Gloria
MOSS, MD James
NOLAN, MD James
REYNOLDS, MD Charles
TANNENBAUM, MD Sigmund
VORSTMAN, MD Albert
ZUCKER, MD Ira

TO SENIOR MEMBERSHIP INTERNAL TRANSFERS: 21

TOTAL INTERNAL TRANSFERS: 40

TRANSFERS

To Honorary Membership

DEMOS, MD Jon
JACKSON, MD, FACS Jerry

TO HONORARY MEMBERSHIP TRANSFERS: 2

TOTAL TRANSFERS: 2

Report of the SESAUA Representative to the AUA Board of Directors

The AUA Board of Directors is responsible for the administrative and fiscal oversight of the AUA and all related entities. The AUA board has 13 voting members including a representative from each of the eight sections and five officers. Each board member spends a minimum of 17 days away from their practice in the performance of AUA business with additional time spent on committee work. As a board member I have spent 3 years on the Finance Committee with 2 years as Compensation Committee Chair with direct oversight of COI policy, goal performance and compensation for committee chairs, editors and the CEO as well as contracts.

As of February 2019, AUA membership stands at 21,522. The active membership category represents 34% of total membership. The next largest is international membership at 16%. At the May 2018 AUA Board meeting, the Board approved stratifying dues for the International Membership category based on the World Bank Classification (WBC) of Countries (A, B, and C: \$300, \$270 and \$240 respectively).

65% of AUA members are members through their sections. The SES remains the largest of all sections with 2,816 total members including 2,306 voting members. Member demographics indicate that 21% of all US urologists are over 65. Female urologists constitute 13% of the total membership up from 11% in 2017.

The Board approved the November 30, 2018 Combined Financial Statements for the AUA, AUAER and UCF at its winter meeting. Total assets are \$218.8 million with total liabilities of \$25.6 million providing for net assets of \$193.2 million representing a 1% decrease from prior year. The reforecast operating deficit for 2018 was \$1,576 million due in part to significant investments in Data, Public Policy and Advocacy, and Technology. The Board approved the AUA's 2019 Consolidated Budget operating deficit of \$3.7 million at the fall meeting, with increased contributions to mission programs. The Board noted the AUA's diverse programming and sound financial position. At the same time the Board recognizes the need for continued focus on program prioritization in order to maximize value to members and to ensure the continued financial strength of the organization.

As of November 30, 2018, AUAER's investment portfolio stood at \$133.9 million and the Urology Care Foundation stood at a balance of \$54.1 million for a total portfolio balance of \$188 million. The combined portfolio includes Board and Donor restricted investments that are used for specific mission programs including Research Scholars, Professional Awards and other projects as well as operating expenses. Under the AUA Vanguard investment umbrella, the SESAUA participates in similar investment strategies with access to the same advantaged fee structure and advice.

During the recent winter AUA board meeting, multiple AUA reporting agencies and councils presented updates. Dr. Victor Nitti, Chair of the Office of Education, highlighted 2018 achievements including the successful launch of the new *AUA University*. The essential work of the OE is distributed over multiple committees including Education Council, Update Series Committee, Core Curriculum Committee, New Technologies and Imaging Committee, Urologic Video Education Committee, Medical Student Education Committee and the Advanced Practice Providers Committee.

Dr. Chris Gonzalez, Chair of the Public Policy and Practice Support Division, provided several highlights including the official establishment of the American Urological Association Political Action Committee (AUAPAC). The 2nd Annual Urology Advocacy Summit will take place on March 4 - 6, 2019 at the Hyatt Regency on Capitol Hill. Content items include access to urologic care, fertility coverage, veteran's health, practice burdens, research, and AUA model legislation for prostate cancer screening.

Dr. Aria Olumi, Research Council Chair, provided an update on council endeavors that included the introduction of the first course in the new online research education curriculum launched in November on *AUAUniversity*. The 2019 Research Scholar Award competition was completed and eighteen new awardees were selected in December. Lastly, the inaugural Physician Scientist Residency Training Award recipient and Program Site were selected in November.

Dr. David Penson, Science & Quality Chair, reported on work from Guidelines, Quality, and Data Management & Statistical Analysis. Currently there are ten clinical practice guidelines, five update literature reviews, two guideline amendments and one practice statement under development.

Finally, as I have previously stated, the work of the AUA staff, board and officers is focused and dedicated to the mission of promoting the highest standard of urological clinical care through education, research and the formulation of health care policy. Please help our future board representatives in the fulfillment of this important role with your timely communication and assistance.

Respectfully submitted,

Thomas F. Stringer, MD, FACS

Roster of the State Societies and Officers

Please help us keep our information about state urological societies accurate and current. Contact the SESAUA office at (847) 969-0248 if you have information about the following societies:

Alabama Urology Society

Information not available at time of printing

Florida Urological Society

President: Kevin Ki-Dong Lee, MD, FACS

President-Elect: Vipul R. Patel, MD, FACS

2019 Meeting: August 29 - September 1, Orlando, FL

Georgia Urological Association

President: Rabii Madi, MD

President-Elect: James Benjamin Kay, IV, MD

2019 Meeting: September 12 - 15, Sea Island, GA

Kentucky Urological Association

President: Charles Eifler, MD

2019 Meeting: To Be Announced

Louisiana Urological Society

President: Christopher P. Fontenot, MD, FACS

President-Elect: Kenneth Lee Perego, II, MD

2019 Annual Meeting: April 5 - 7, Lafayette, LA

Mississippi Urologic Society

Information not available at time of printing

North Carolina Urological Association

President: Peter E. Clark, MD

President-Elect: Ryan P. Terlecki, MD, FACS

2019 Meeting: To Be Announced

Puerto Rico Urological Association

President: Eduardo Canto Repetti, MD

President-Elect: José Fournier Rebollo, MD

2019 Meeting: To Be Announced

South Carolina Urological Association

President: Julius L. Teague, MD, MHA

President-Elect: David C. Horger, MD

2019 Meeting: September 20 – 21, 2019

Tennessee Urological Association

President: S. Duke Herrell III, MD, FACS

Previous Officers and Annual Meeting Sites

♦ *Indicates Deceased Member*

1932 Birmingham, AL

♦ Edgar G. Ballenger, MD; Atlanta, GA Temporary Chair

1933 Richmond, VA

♦ Montague L. Boyd, MD; Atlanta, GA Chair
 ♦ Edgar G. Ballenger, MD; Atlanta, GA Vice Chair
 ♦ Earl Floyd, MD; Atlanta, GA Secretary/Treasurer

1934 Atlanta, GA

♦ Montague L. Boyd, MD; Atlanta, GA Chair
 ♦ Edgar G. Ballenger, MD; Atlanta, GA Vice Chair
 ♦ Earl Floyd, MD; Atlanta, GA Secretary/Treasurer

1935 Nashville, TN

♦ Edgar G. Ballenger, MD; Atlanta, GA President
 ♦ H. W.E. Walther, MD; New Orleans, LA President-Elect
 ♦ Earl Floyd, MD; Atlanta, GA Secretary/Treasurer

1936 Charlotte, NC

♦ H. W.E. Walther, MD; New Orleans, LA President
 ♦ Hamilton McKay, MD; Charlotte, NC President-Elect
 ♦ Earl Floyd, MD; Atlanta, GA Secretary/Treasurer

1937 Birmingham, AL

♦ Hamilton McKay, MD; Charlotte, NC President
 ♦ George Livermore, MD; Memphis, TN President-Elect
 ♦ Earl Floyd, MD; Atlanta, GA Secretary/Treasurer

1938 Louisville, KY

♦ George Livermore, MD; Memphis, TN President
 ♦ Earl Floyd, MD; Atlanta, GA President-Elect
 ♦ Raymond Thompson, MD; Charlotte, NC Secretary/Treasurer

1939 Biloxi, MS

♦ Earl Floyd, MD; Atlanta, GA President
 ♦ J. Ullman Reaves, MD; Mobile, AL President-Elect
 ♦ Louis M. Orr, MD; Gainesville, FL Secretary/Treasurer

1941 Jacksonville, FL

♦ J. Ullman Reaves, MD; Mobile, AL President
 ♦ Jefferson C. Pennington, MD; Nashville, TN President-Elect
 ♦ Louis M. Orr, MD; Gainesville, FL Secretary/Treasurer

1942 Chattanooga, TN

♦ Jefferson C. Pennington, MD; Nashville, TN President
 ♦ Louis M. Orr, MD; Gainesville, FL President-Elect
 ♦ Harold P. McDonald, Sr., MD; Atlanta, GA Secretary/Treasurer

1943 New Orleans, LA

♦ Louis M. Orr, MD; Gainesville, FL President
 ♦ William E. Coppridge, MD; Durham, NC President-Elect
 ♦ Harold P. McDonald Sr., MD; Atlanta, GA Secretary/Treasurer

1946 Augusta, GA

- ◆ William E. Coppridge, MD; Durham, NC
- ◆ Hubert K. Turley Sr., MD; Memphis, TN
- ◆ Harold P. McDonald Sr., MD; Atlanta, GA

President
President-Elect
Secretary/Treasurer

1947 Palm Beach, FL

- ◆ Hubert K. Turley Sr., MD; Memphis, TN
- ◆ Robert P. McIver, MD; Jacksonville, FL
- ◆ Harold P. McDonald Sr., MD; Atlanta, GA

President
President-Elect
Secretary/Treasurer

1948 Hollywood Beach, FL

- ◆ Robert P. McIver, MD; Jacksonville, FL
- ◆ Harold P. McDonald Sr., MD; Atlanta, GA
- ◆ Russell B. Carson, MD; Vero Beach, FL

President
President-Elect
Secretary/Treasurer

1949 Boca Raton, FL

- ◆ Harold P. McDonald Sr., MD; Atlanta, GA
- ◆ James J. Ravenel, MD; Charleston, SC
- ◆ Russell B. Carson, MD; Vero Beach, FL

President
President-Elect
Secretary/Treasurer

1950 Edgewater Park, MS

- ◆ James J. Ravenel, MD; Charleston, SC
- ◆ Edgar Burns, MD; New Orleans, LA
- ◆ Russell B. Carson, MD; Vero Beach, FL

President
President-Elect
Secretary/Treasurer

1951 Memphis, TN

- ◆ Edgar Burns, MD; New Orleans, LA
- ◆ Temple Ainsworth, MD; Jackson, MS
- ◆ Russell B. Carson, MD; Vero Beach, FL

President
President-Elect
Secretary/Treasurer

1952 Boca Raton, FL

- ◆ Temple Ainsworth, MD; Jackson, MS
- ◆ W.R. Miner, MD; Covington, KY
- ◆ Russell B. Carson, MD; Vero Beach, FL

President
President-Elect
Secretary/Treasurer

1953 Havana, Cuba

- ◆ W.R. Miner, MD; Covington, KY
- ◆ Russell B. Carson, MD; Vero Beach, FL
- ◆ Sidney Smith, MD; Raleigh, NC

President
President-Elect
Secretary/Treasurer

1954 Palm Beach, FL

- ◆ Russell B. Carson, MD; Vero Beach, FL
- ◆ Samuel L. Raines, MD; Memphis, TN
- ◆ Sidney Smith, MD; Raleigh, NC

President
President-Elect
Secretary/Treasurer

1955 New Orleans, LA

- ◆ Samuel L. Raines, MD; Memphis, TN
- ◆ Sidney Smith, MD; Raleigh, NC
- ◆ Robert F. Sharp Sr., MD; New Orleans, LA
- ◆ Charles Reiser, MD; Atlanta, GA

President
President-Elect
Secretary
Treasurer

1956 Hollywood, FL

- ◆ Sidney Smith, MD; Raleigh, NC
- ◆ Jarratt P. Robertson, MD; Atlanta, GA
- ◆ Robert F. Sharp Sr., MD; New Orleans, LA
- ◆ Charles Reiser, MD; Atlanta, GA

President
President-Elect
Secretary
Treasurer

1957 Atlanta, GA

♦ Jarratt P. Robertson, MD; Atlanta, GA	President
♦ Lawrence P. Thackston Sr., MD; Orangeburg, SC	President-Elect
♦ Robert F. Sharp Sr., MD; New Orleans, LA	Secretary
♦ Frank M. Woods, MD; LaBelle, FL	Treasurer

1958 Hollywood, FL

♦ Lawrence P. Thackston Sr., MD; Orangeburg, SC	President
♦ Robert F. Sharp Sr., MD; New Orleans, LA	President-Elect
♦ James L. Campbell Jr., MD; Orlando, FL	Secretary
♦ Frank M. Woods, MD; LaBelle, FL	Treasurer

1959 Louisville, KY

♦ Robert F. Sharp Sr., MD; New Orleans, LA	President
♦ Rudolph Bell, MD; Thomasville, GA	President-Elect
♦ James L. Campbell Jr., MD; Orlando, FL	Secretary
♦ Hurbert K. Turley, MD; Memphis, TN	Treasurer

1960 Jacksonville, FL

♦ Rudolph Bell, MD; Thomasville, GA	President
♦ N. Lewis Bosworth, MD; Lexington, KY	President-Elect
♦ James L. Campbell Jr., MD; Orlando, FL	Secretary
♦ Hurbert K. Turley, MD; Memphis, TN	Treasurer

1961 Hollywood-by-the-Sea, FL

♦ N. Lewis Bosworth, MD; Lexington, KY	President
♦ Alfred D. Mason Jr., MD; Memphis, TN	President-Elect
♦ James L. Campbell Jr., MD; Orlando, FL	Secretary
♦ Henry Comfort Hudson, MD; Birmingham, AL	Treasurer

1962 Belleair, FL

♦ Alfred D. Mason Jr., MD; Memphis, TN	President
♦ James L. Campbell Jr., MD; Orlando, FL	President-Elect
♦ Louis C. Roberts, MD; Greensboro, NC	Secretary
♦ Henry Comfort Hudson, MD; Birmingham, AL	Treasurer

1963 Nassau, Bahamas

♦ James L. Campbell Jr., MD; Orlando, FL	President
♦ Powell G. Fox Sr., MD; Raleigh, NC	President-Elect
♦ Louis C. Roberts, MD; Greensboro, NC	Secretary
♦ Douglas E. Scott, MD; Lexington, KY	Treasurer

1964 Belleair, FL

♦ Powell G. Fox Sr., MD; Raleigh, NC	President
♦ W. E. Kittredge, MD; New Orleans, LA	President-Elect
♦ Louis C. Roberts, MD; Greensboro, NC	Secretary
♦ Douglas E. Scott, MD; Lexington, KY	Treasurer

1965 Miami Beach, FL

♦ W. E. Kittredge, MD; New Orleans, LA	President
♦ Douglas E. Scott, MD; Lexington, KY	President-Elect
♦ David W. Goddard, MD; Daytona Beach, FL	Secretary
♦ Rafe Banks Jr., MD; Gainesville, GA	Treasurer

1966 Memphis, TN

♦ Douglas E. Scott, MD; Lexington, KY	President
♦ Louis C. Roberts, MD; Greensboro, NC	President-Elect
♦ David W. Goddard, MD; Daytona Beach, FL	Secretary
♦ Rafe Banks Jr., MD; Gainesville, GA	Treasurer

1967 Hollywood, FL

- ◆ Louis C. Roberts, MD; Greensboro, NC President
- ◆ Charles Reiser, MD; Atlanta, GA President-Elect
- ◆ David W. Goddard, MD; Daytona Beach, FL Secretary
- ◆ John T. Karaphillis, MD; Belleair, FL Treasurer

1968 Atlanta, GA

- ◆ Charles Reiser, MD; Atlanta, GA President
- ◆ David W. Goddard, MD; Daytona Beach, FL President-Elect
- ◆ R. Prosser Morrow Jr., MD; New Orleans, LA Secretary
- ◆ John T. Karaphillis, MD; Belleair, FL Treasurer

1969 Hollywood Beach, FL

- ◆ David W. Goddard, MD; Daytona Beach, FL President
- ◆ Henry Comfort Hudson, MD; Birmingham, AL President-Elect
- ◆ R. Prosser Morrow Jr., MD; New Orleans, LA Secretary
- ◆ Charlton P. Armstrong II, MD; Greenville, SC Treasurer

1970 TS Hanseatic

- ◆ Henry Comfort Hudson, MD; Birmingham, AL President
- ◆ Milton M. Coplan, MD; Miami, FL President-Elect
- ◆ R. Prosser Morrow Jr., MD; New Orleans, LA Secretary
- ◆ Charlton P. Armstrong II, MD; Greenville, SC Treasurer

1971 Miami Beach, FL

- ◆ Milton M. Coplan, MD; Miami, FL President
- ◆ R. Prosser Morrow Jr., MD; New Orleans, LA President-Elect
- ◆ Samuel S. Ambrose, MD; Atlanta, GA Secretary
- ◆ George W. Vickery, MD; Gulfport, MS Treasurer

1972 New Orleans, LA

- ◆ R. Prosser Morrow, Jr., MD; New Orleans, LA President
- ◆ Charlton P. Armstrong II, MD; Greenville, SC President-Elect
- ◆ Samuel S. Ambrose, MD; Atlanta, GA Secretary
- ◆ George W. Vickery, MD; Gulfport, MS Treasurer

1973 Palm Beach, FL

- ◆ Charlton P. Armstrong II, MD; Greenville, SC President
- ◆ Hurbert K. Turley, MD; Memphis, TN President-Elect
- ◆ Samuel S. Ambrose, MD; Atlanta, GA Secretary
- ◆ Victor A. Politano, MD; N. Miami, FL Treasurer

1974 Marco Island, FL

- ◆ Hurbert K. Turley, MD; Memphis, TN President
- ◆ Samuel S. Ambrose, MD; Atlanta, GA President-Elect
- ◆ William Brannan, MD; The Woodlands, TX Secretary
- ◆ Victor A. Politano, MD; N. Miami, FL Treasurer

1975 Atlanta, GA

- ◆ Samuel S. Ambrose, MD; Atlanta, GA President
- ◆ Rafe Banks Jr., MD; Gainesville, GA President-Elect
- ◆ William Brannan, MD; The Woodlands, TX Secretary
- ◆ Victor A. Politano, MD; N. Miami, FL Treasurer

1976 Hollywood, FL

- ◆ Rafe Banks Jr., MD; Gainesville, GA President
- ◆ James F. Glenn, MD; Versailles, KY President-Elect
- ◆ William Brannan, MD; The Woodlands, TX Secretary
- ◆ John I. Williams, MD; Fort Lauderdale, FL Treasurer

1977 New Orleans, LA

◆ James F. Glenn, MD; Versailles, KY	President
◆ William Brannan, MD; The Woodlands, TX	President-Elect
◆ Miles W. Thomley, MD; Winter Park, FL	Secretary
◆ John I. Williams, MD; Fort Lauderdale, FL	Treasurer

1978 Louisville, KY

◆ William Brannan, MD; The Woodlands, TX	President
◆ Victor A. Politano, MD; N. Miami, FL	President-Elect
◆ Miles W. Thomley, MD; Winter Park, FL	Secretary
◆ John I. Williams, MD; Fort Lauderdale, FL	Treasurer

1979 Memphis, TN

◆ Victor A. Politano, MD; N. Miami, FL	President
◆ Joseph Ward Hooper Jr., MD; Wilmington, NC	President-Elect
◆ Miles W. Thomley, MD; Winter Park, FL	Secretary
◆ Fontaine Bruce Moore Jr., MD; Memphis, TN	Treasurer

1980 San Juan, Puerto Rico

◆ Joseph Ward Hooper Jr., MD; Wilmington, NC	President
◆ Miles W. Thomley, MD; Winter Park, FL	President-Elect
W. Lamar Weems, MD; Jackson, MS	Secretary
◆ Fontaine Bruce Moore Jr., MD; Memphis, TN	Treasurer

1981 Lake Buena Vista, FL

◆ Miles W. Thomley, MD; Winter Park, FL	President
◆ John I. Williams, MD; Fort Lauderdale, FL	President-Elect
W. Lamar Weems, MD; Jackson, MS	Secretary
◆ Fontaine Bruce Moore Jr., MD; Memphis, TN	Treasurer

1982 New Orleans, LA

◆ John I. Williams, MD; Fort Lauderdale, FL	President
Eugene C. St. Martin, MD; Shreveport, LA	President-Elect
W. Lamar Weems, MD; Jackson, MS	Secretary
Edward H. Ray Jr., MD; Lexington, KY	Treasurer

1983 Haines City, FL

Eugene C. St. Martin, MD; Shreveport, LA	President
W. Lamar Weems, MD; Jackson, MS	President-Elect
William Redd Turner Jr., MD; Folly Beach, SC	Secretary
Edward H. Ray Jr., MD; Lexington, KY	Treasurer

1984 Nashville, TN

W. Lamar Weems, MD; Jackson, MS	President
◆ Fontaine Bruce Moore Jr., MD; Memphis, TN	President-Elect
William Redd Turner Jr., MD; Folly Beach, SC	Secretary
Edward H. Ray Jr., MD; Lexington, KY	Treasurer

1985 Marco Island, FL

◆ Fontaine Bruce Moore Jr., MD; Memphis, TN	President
Jack Hughes, MD; Durham, NC	President-Elect
William Redd Turner Jr., MD; Folly Beach, SC	Secretary
◆ Robert N. Webster, MD; Tallahassee, FL	Treasurer

1986 Dorado Beach, Puerto Rico

Jack Hughes, MD; Durham, NC	President
William Redd Turner Jr., MD; Folly Beach, SC	President-Elect
◆ David M. Drylie, MD; Gainesville, FL	Secretary
◆ Robert N. Webster, MD; Tallahassee, FL	Treasurer

1987 New Orleans, LA

William Redd Turner Jr., MD; Folly Beach, SC

President

Roy Witherington, MD; Sarasota, FL

President-Elect

◆ David M. Drylie, MD; Gainesville, FL

Secretary

◆ Robert N. Webster, MD; Tallahassee, FL

Treasurer

1988 Boca Raton, FL

Roy Witherington, MD; Sarasota, FL

President

Edward H. Ray Jr., MD; Lexington, KY

President-Elect

◆ David M. Drylie, MD; Gainesville, FL

Secretary

◆ Robert B. Quattlebaum Jr., MD; Savannah, GA

Treasurer

1989 Hilton Head, SC

Edward H. Ray Jr., MD; Lexington, KY

President

◆ David M. Drylie, MD; Gainesville, FL

President-Elect

◆ Lloyd H. Harrison, MD; Tobaccoville, NC

Secretary

◆ Robert B. Quattlebaum Jr., MD; Savannah, GA

Treasurer

1990 Palm Beach, FL

◆ David M. Drylie, MD; Gainesville, FL

President

◆ Robert N. Webster, MD; Tallahassee, FL

President-Elect

◆ Lloyd H. Harrison, MD; Tobaccoville, NC

Secretary

◆ Robert B. Quattlebaum Jr., MD; Savannah, GA

Treasurer

1991 Atlanta, GA

◆ Robert N. Webster, MD; Tallahassee, FL

President

◆ Josiah F. Reed Jr., MD; Montgomery, AL

President-Elect

◆ Lloyd H. Harrison, MD; Tobaccoville, NC

Secretary

James C. Seabury Jr., MD; Fort Myers Beach, FL

Treasurer

1992 Charlotte, NC

◆ Josiah F. Reed Jr., MD; Montgomery, AL

President

◆ Lloyd H. Harrison, MD; Tobaccoville, NC

President-Elect

J. William McRoberts, MD; Lexington, KY

Secretary

James C. Seabury Jr., MD; Fort Myers Beach, FL

Treasurer

1993 Nashville, TN

◆ Lloyd H. Harrison, MD; Tobaccoville, NC

President

◆ Robert B. Quattlebaum Jr., MD; Savannah, GA

President-Elect

J. William McRoberts, MD; Lexington, KY

Secretary

James C. Seabury Jr., MD; Fort Myers Beach, FL

Treasurer

1994 New Orleans, LA

◆ Robert B. Quattlebaum Jr., MD; Savannah, GA

President

Thomas C. McLaughlin, MD; Lakeland, FL

President-Elect

J. William McRoberts, MD; Lexington, KY

Secretary

◆ Hector H. Henry II, MD, MPH, MS; Salisbury, NC

Treasurer

1995 Lake Buena Vista, FL

Thomas C. McLaughlin, MD; Lakeland, FL

President

J. William McRoberts, MD; Lexington, KY

President-Elect

David L. McCullough, MD; Winston-Salem, NC

Secretary

◆ Hector H. Henry II, MD, MPH, MS; Salisbury, NC

Treasurer

1996 Las Croabas, Puerto Rico

J. William McRoberts, MD; Lexington, KY

President

James C. Seabury Jr., MD; Fort Myers Beach, FL

President-Elect

David L. McCullough, MD; Winston-Salem, NC

Secretary

◆ Hector H. Henry II, MD, MPH, MS; Salisbury, NC

Treasurer

1997 Naples, FL

James C. Seabury Jr., MD; Fort Myers Beach, FL
 Cecil Morgan Jr., MD; Birmingham, AL
 David L. McCullough, MD; Winston-Salem, NC
 Valentine A. Earhart, MD; New Orleans, LA

President
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 Secretary
 Treasurer

1998 Birmingham, AL

Cecil Morgan Jr., MD; Birmingham, AL
 David L. McCullough, MD; Winston-Salem, NC
 Anton J. Bueschen, MD; Atlanta, GA
 Valentine A. Earhart, MD; New Orleans, LA

President
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 Secretary
 Treasurer

1999 Charleston, SC

David L. McCullough, MD; Winston-Salem, NC
 William F. Gee, MD; Lexington, KY
 Anton J. Bueschen, MD; Atlanta, GA
 Valentine A. Earhart, MD; New Orleans, LA

President
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 Secretary
 Treasurer

2000 Orlando, FL

- William F. Gee, MD; Lexington, KY
 ♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC
 Anton J. Bueschen, MD; Atlanta, GA
 B. Thomas Brown, MD, MBA; Daytona Beach, FL

President
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 Secretary
 Treasurer

2001 New Orleans, LA

- ♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC
 William F. Gee, MD; Lexington, KY
 Anton J. Bueschen, MD; Atlanta, GA
 Joseph A. Smith Jr., MD; Nashville, TN
 B. Thomas Brown, MD, MBA; Daytona Beach, FL

President
 Past President
 President-Elect
 Secretary
 Treasurer

2002 Naples, FL

- Anton J. Bueschen, MD; Atlanta, GA
 ♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC
 Valentine A. Earhart, MD; New Orleans, LA
 Joseph A. Smith Jr., MD; Nashville, TN
 B. Thomas Brown, MD, MBA; Daytona Beach, FL

President
 Past President
 President-Elect
 Secretary
 Treasurer

2003 Savannah, GA

Valentine A. Earhart, MD; New Orleans, LA
 Anton J. Bueschen, MD; Atlanta, GA
 B. Thomas Brown, MD, MBA; Daytona Beach, FL
 Joseph A. Smith Jr., MD; Nashville, TN
 Edward O. Janosko, MD; Wilmington, NC

President
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 President-Elect
 Secretary
 Treasurer

2004 Oranjestad, Aruba

B. Thomas Brown, MD, MBA; Daytona Beach, FL
 Valentine A. Earhart, MD; New Orleans, LA
 Joseph A. Smith Jr., MD; Nashville, TN
 Dennis D. Venable, MD; Shreveport, LA
 Edward O. Janosko, MD; Wilmington, NC

President
 Past President
 President-Elect
 Secretary
 Treasurer

2005 Charleston, SC

Joseph A. Smith Jr., MD; Nashville, TN
 B. Thomas Brown, MD, MBA; Daytona Beach, FL
 Culley C. Carson III, MD; Chapel Hill, NC
 Dennis D. Venable, MD; Shreveport, LA
 Edward O. Janosko, MD; Wilmington, NC

President
 Past President
 President-Elect
 Secretary
 Treasurer

2006 Rio Grande, Puerto Rico

Culley C. Carson III, MD; Chapel Hill, NC	President
Joseph A. Smith Jr., MD; Nashville, TN	Past President
Edward O. Janosko, MD; Wilmington, NC	President-Elect
Dennis D. Venable, MD; Shreveport, LA	Secretary
Thomas F. Stringer, MD, FACS; Gainesville, FL	Treasurer

2007 Lake Buena Vista, FL

Edward O. Janosko, MD; Wilmington, NC	President
Culley C. Carson III, MD; Chapel Hill, NC	Past President
Dennis D. Venable, MD; Shreveport, LA	President-Elect
Raju Thomas, MD, FACS, MHA; New Orleans, LA	Secretary
Thomas F. Stringer, MD, FACS; Gainesville, FL	Treasurer

2008 San Diego, CA

Dennis D. Venable, MD; Shreveport, LA	President
Edward O. Janosko, MD; Wilmington, NC	Past President
Martin K. Dineen, MD; Daytona Beach, FL	President-Elect
Raju Thomas, MD, FACS; MHA, New Orleans, LA	Secretary
Thomas F. Stringer, MD, FACS; Gainesville, FL	Treasurer

2009 Mobile, AL

Martin K. Dineen, MD; Daytona Beach, FL	President
Dennis D. Venable, MD; Shreveport, LA	Past President
Thomas F. Stringer, MD, FACS; Gainesville, FL	President-Elect
Raju Thomas, MD, FACS, MHA; New Orleans, LA	Secretary
W. Terry Stallings, MD, FACS; Daphne, AL	Treasurer

2010 Miami Beach, FL

Thomas F. Stringer, MD, FACS; Gainesville, FL	President
Martin K. Dineen, MD; Daytona Beach, FL	Past President
Raju Thomas, MD, FACS, MHA; New Orleans, LA	President-Elect
Raymond J. Leveillee, MD; FRCS-G, Miami, FL	Secretary
W. Terry Stallings, MD, FACS; Daphne, AL	Treasurer

2011 New Orleans, LA

Raju Thomas, MD, FACS, MHA; New Orleans, LA	President
Thomas F. Stringer, MD, FACS; Gainesville, FL	Past President
Randall G. Rowland, MD, PhD; Indianapolis, IN	President-Elect
Raymond J. Leveillee, MD, FRCS-G; Miami, FL	Secretary
W. Terry Stallings, MD, FACS; Daphne, AL	Treasurer

2012 Amelia Island, FL

Randall G. Rowland, MD, PhD; Indianapolis, IN	President
Raju Thomas, MD, FACS, MHA; New Orleans, LA	Past President
W. Terry Stallings, MD, FACS; Daphne, AL	President-Elect
Raymond J. Leveillee, MD, FRCS-G; Miami, FL	Secretary
Jon S. Demos, MD; Lexington, KY	Treasurer

2013 Williamsburg, VA

W. Terry Stallings, MD, FACS; Daphne, AL	President
Randall G. Rowland, MD, PhD; Indianapolis, IN	Past President
Raymond J. Leveillee, MD, FRCS-G; Miami, FL	President-Elect
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Jon S. Demos, MD; Lexington, KY	Treasurer

2014 Hollywood, FL

Raymond J. Leveillee, MD, FRCS-G, Cooper City, FL
W. Terry Stallings, MD, FACS; Daphne, AL
Jack M. Amie, MD; St. Simons Island, GA
Dean George Assimos, MD; Birmingham, AL
Jon S. Demos, MD; Lexington, KY

President
Past President
President-Elect
Secretary
Treasurer

2015 Savannah, GA

Jack M. Amie, MD; St. Simons Island, GA
Raymond J. Leveillee, MD, FRCS-G; Cooper City, FL
Jon S. Demos, MD; Lexington, KY
Dean G. Assimos, MD; Birmingham, AL
Scott B. Sellinger, MD, FACS; Tallahassee, FL

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2016 Nashville, TN

Jon S. Demos, MD; Lexington, KY
Jack M. Amie, MD; St. Simons Island, GA
Dean G. Assimos, MD; Birmingham, AL
Glenn M. Preminger, MD; Durham, NC
Scott B. Sellinger, MD, FACS; Tallahassee, FL

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Treasurer

2017 Austin, TX

Dean G. Assimos, MD; Birmingham, AL
Jon S. Demos, MD, Lexington, KY
Jerry E. Jackson, MD, FACS; Sumter, SC
Glenn M. Preminger, MD; Durham, NC
Scott B. Sellinger, MD, FACS; Tallahassee, FL

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Past President
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2018 Orlando, FL

Jerry E. Jackson, MD, FACS; Sumter, SC
Dean G. Assimos, MD; Birmingham, AL
Scott B. Sellinger, MD, FACS; Tallahassee, FL
Glenn M. Preminger, MD; Durham, NC
David M. Kraebber, MD; Wilmington, NC

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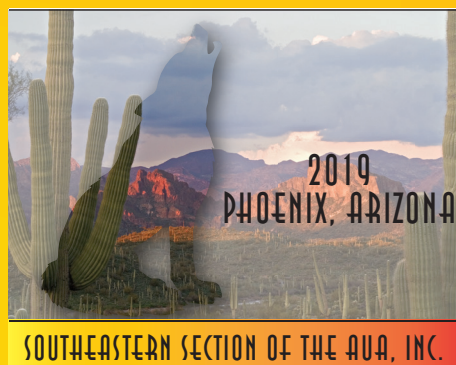
Future SESAUA Meetings

84th Annual Meeting of the Southeastern Section of the AUA, Inc.
March 18 - 21, 2020

The Roosevelt Hotel, A Waldorf Astoria Hotel
New Orleans, Louisiana

85th Annual Meeting of the Southeastern Section of the AUA, Inc.
April 21 - 24, 2021

Omni Nashville
Nashville, Tennessee



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