Southeastern Section of the AUA, Inc.

84TH ANNUAL MEETING

March 18 - 21, 2020

The Roosevelt New Orleans,
A Waldorf Astoria Hotel
New Orleans, Louisiana

SESAUA
2020
NEW ORLEANS

PROGRAM BOOK

Glenn M. Preminger, MD
2019 – 2020 President
Southeastern Section of the AUA, Inc.

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Schedule at a Glance

All sessions are located in ***Crescent City Ballroom*** unless otherwise noted.

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<tr><th></th><th colspan="5">WEDNESDAY, MARCH 18, 2020</th></tr>
<tr><td>7:00 a.m.
5:00 p.m.</td><td colspan="5">Registration/Information Desk Open: Roosevelt Pre-Function</td></tr>
<tr><td>7:00 a.m.
11:00 a.m.</td><td colspan="5">Board of Directors Meeting: Blue Room</td></tr>
<tr><td>7:30 a.m.
10:30 a.m.</td><td colspan="5">Spouse/Guest Hospitality Suite Open: Conti Room</td></tr>
<tr><td>10:30 a.m.
5:00 p.m.</td><td colspan="5">Speaker Ready Room Open: Napoleon Room</td></tr>
<tr><td>11:00 a.m.</td><td colspan="5">Industry Sponsored Lunch Symposium: Waldorf Astoria Ballroom</td></tr>
<tr><td>12:05 p.m.</td><td colspan="5">Opening Remarks</td></tr>
<tr><td>12:15 p.m.</td><td colspan="5">State-of-the-Art Lecture: Management of N1 Prostate Cancer</td></tr>
<tr><td>12:45 p.m.</td><td colspan="5">Panel Discussion: The APP in Urology</td></tr>
<tr><td>2:15 p.m.</td><td colspan="5">Panel Discussion: Opioids and Stone Disease: Dilemma and Opportunity</td></tr>
<tr><td>3:15 p.m.</td><td colspan="5">Break: Crescent City Pre-Function</td></tr>
<tr><td>3:30 p.m.</td><td rowspan="2">Bladder Cancer Podium Session
Crescent City Ballroom</td><td rowspan="2">Sexual Health and Infertility Podium Session
Waldorf Astoria Ballroom</td><td rowspan="2">Prostate Cancer I Poster Session
Chambers I&III</td><td rowspan="2">Nephrolithiasis Poster Session
Chambers II&IV</td><td>4:00 - 5:00</td></tr>
<tr><td>4:00 p.m.</td><td>Video Session I
Orpheum Room</td></tr>
</table>

Schedule at a Glance

All sessions are located in ***Crescent City Ballroom*** unless otherwise noted.

<table>
<tr><th></th><th colspan="5">THURSDAY, MARCH 19, 2020</th></tr>
<tr><td>6:00 a.m.
5:20 p.m.</td><td colspan="5">Registration/Information Desk Open: Roosevelt Pre-Function</td></tr>
<tr><td>6:00 a.m.
5:20 p.m.</td><td colspan="5">Speaker Ready Room Open: Napoleon Room</td></tr>
<tr><td>7:30 a.m.
10:30 a.m.</td><td colspan="5">Spouse/Guest Hospitality Suite Open: Conti Room</td></tr>
<tr><td>9:00 a.m.
4:00 p.m.</td><td colspan="5">Exhibit Hall Open: Roosevelt Ballroom</td></tr>
<tr><td>6:00 p.m.
8:00 p.m.</td><td colspan="5">Welcome Reception: Roosevelt Ballroom</td></tr>
<tr><td>7:00 a.m.</td><td>Health Services Research Poster Session
Chambers I&III</td><td>Prostate Cancer Podium Session
Crescent City Ballroom</td><td colspan="2">Voiding Dysfunction and Reconstructive Surgery Podium Session
Waldorf Astoria Ballroom</td><td>Kidney Cancer Poster Session
Chambers II&IV</td></tr>
<tr><td>8:30 a.m.</td><td colspan="5">AUA Course of Choice Lecture:
AUA Guideline 2019: Recurrent Urinary Tract Infection</td></tr>
<tr><td>9:30 a.m.</td><td colspan="5">SESAUA Update</td></tr>
<tr><td>9:45 a.m.</td><td colspan="5">Break - Visit Exhibits: Roosevelt Ballroom</td></tr>
<tr><td>10:15 a.m.</td><td colspan="5">Panel Discussion: Prostate Cancer 2020: Workup and Staging</td></tr>
<tr><td>11:30 a.m.</td><td colspan="5">Ballenger Lecture: Retrograde Intrarenal Surgery: What are the Limits</td></tr>
<tr><td>12:15 p.m.</td><td colspan="2">Industry Sponsored Lunch
Symposium: Orpheum Room</td><td colspan="3">Industry Sponsored Lunch
Symposium: Waldorf Astoria Ballroom</td></tr>
<tr><td rowspan="4">1:30 p.m.</td><td rowspan="4">Endourology Sub-Plenary Session
Crescent City Ballroom</td><td colspan="2">1:45 - 5:00</td><td colspan="2">3:10 – 3:40</td></tr>
<tr><td rowspan="3">Pediatric Sub-Plenary Session I
Orpheum Room</td><td rowspan="3">Kidney Cancer/Renal Mass Cancer Sub-Plenary Session
Waldorf Astoria Ballroom</td><td colspan="2">Break – Visit Exhibits
Roosevelt Ballroom</td></tr>
<tr><td colspan="2">3:50 – 5:00</td></tr>
<tr><td>Socioeconomics Poster Session
Chambers I&III</td><td>BPH and Voiding Dysfunction Poster Session
Chambers II&IV</td></tr>
<tr><td>5:00 p.m.</td><td colspan="5">History of Urology in New Orleans</td></tr>
<tr><td>5:10 p.m.</td><td colspan="5">History of Urology in Panama</td></tr>
</table>

Schedule at a Glance

All sessions are located in ***Crescent City Ballroom*** unless otherwise noted.

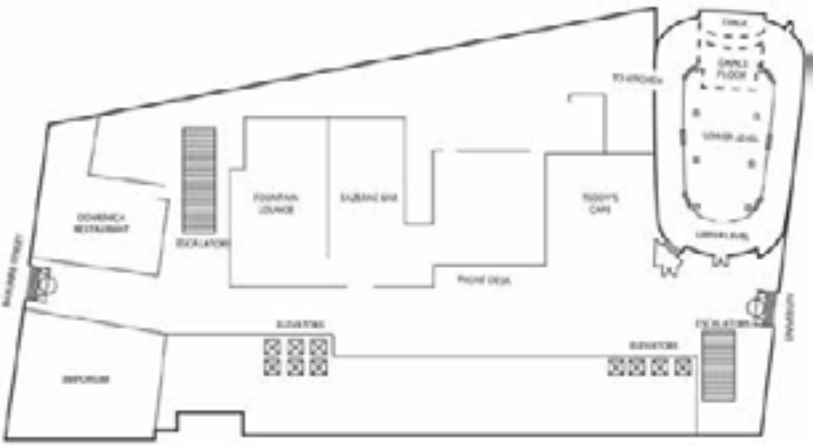
<table>
<tr><th></th><th colspan="4">FRIDAY, MARCH 20, 2020</th></tr>
<tr><td>6:30 a.m.
2:00 p.m.</td><td colspan="4">Registration/Information Desk Open: Roosevelt Pre-Function</td></tr>
<tr><td>6:30 a.m.
2:00 p.m.</td><td colspan="4">Speaker Ready Room Open: Napoleon Room</td></tr>
<tr><td>7:30 a.m.
10:30 a.m.</td><td colspan="4">Spouse/Guest Hospitality Suite Open: Conti Room</td></tr>
<tr><td>7:00 a.m.
11:00 a.m.</td><td colspan="4">Exhibit Hall Open: Roosevelt Ballroom</td></tr>
<tr><td>7:00 p.m.
10:00 p.m.</td><td colspan="4">Residents Night Out: Sazerac House</td></tr>
<tr><td>7:00 a.m.</td><td>Bladder Cancer Poster Session
Chambers I&III</td><td>Miscellaneous Urology Poster Session
Chambers II&IV</td><td>Video Session II
Waldorf Astoria Ballroom</td><td>Health Services Research Podium Session
Crescent City Ballroom</td></tr>
<tr><td>8:00 a.m.</td><td colspan="2">Gee-Dineen Health Policy Forum I</td><td colspan="2" rowspan="2">Pediatric Sub-Plenary Session II
Waldorf Astoria Ballroom</td></tr>
<tr><td>9:30 a.m.</td><td colspan="2">ABU Update</td></tr>
<tr><td>9:45 a.m.</td><td colspan="4">Break - Visit Exhibits: Roosevelt Ballroom</td></tr>
<tr><td>10:15 a.m.</td><td colspan="4">SESAUA Annual Business Meeting</td></tr>
<tr><td>10:45 a.m.</td><td colspan="4">Resident Quiz Bowl</td></tr>
<tr><td>11:30 a.m.</td><td colspan="4">AUA Guidelines Update 2020</td></tr>
<tr><td>11:45 a.m.</td><td colspan="2">Industry Sponsored Lunch Symposium: Orpheum Room</td><td colspan="2">Industry Sponsored Lunch Symposium: Waldorf Astoria Ballroom</td></tr>
<tr><td>12:45 p.m.</td><td colspan="4">AUA Update</td></tr>
<tr><td>1:00 p.m.</td><td colspan="4">T. Leon Howard Imaging Session</td></tr>
</table>

Schedule at a Glance

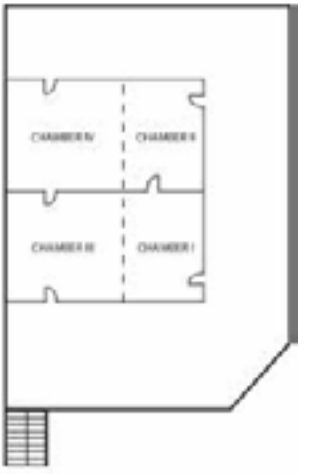
All sessions are located in ***Crescent City Ballroom*** unless otherwise noted.

	SATURDAY, MARCH 21, 2020			
6:30 a.m. 5:00 p.m.	**Registration/Information Desk Open:** *Crescent City Pre-Function*			
6:30 a.m. 5:00 p.m.	**Speaker Ready Room Open:** *Napoleon Room*			
7:30 a.m. 10:30 a.m.	**Spouse/Guest Hospitality Suite Open:** *Conti Room*			
6:00 p.m. 7:30 p.m.	**SESAUA Closing Reception:** *Roosevelt Promenade*			
7:00 a.m.	**Robotic and Reconstructive Surgery Poster Session** *Chambers I&III*	**Sexual Health Poster Session** *Chambers II&IV*	**Urologic Oncology Poster Session** *Orpheum Room*	**Prostate Cancer II Poster Session** *Waldorf Astoria Ballroom*
8:00 a.m.	**Montague Boyd Essay Contest**			
8:30 a.m.	**Gee-Dineen Health Policy Forum II**			
10:30 a.m.	**Break:** *Crescent City Pre-Function*			
10:45 a.m.	**International Volunteerism Program: Resident Reports**			
11:00 a.m.	**State-of-the-Art Lecture: What Does the Urologist Need to Know About Infertility?**			
11:45 a.m.	**Best Video Viewing and Award Presentation**			
11:55 a.m.	**Industry Sponsored Lunch Symposium:** *Waldorf Astoria Ballroom*			
1:10 p.m.	**State-of-the-Art Lecture: Therapeutic Alternatives During BCG Shortage**			
1:40 p.m.	**Presidential Lecture: Testosterone Therapy: A 2020 Perspective**			
2:20 p.m.	**Break:** *Crescent City Pre-Function*			
2:50 p.m.	**Panel Discussion: Vaginal Prolapse: What a "Mesh": Following the FDA Mesh Actions, Who Should Get What?**			
3:45 p.m.	**Hector Henry Memorial Lecture: Genitourinary Damage Control Lessons From Military Action in the 21st Century**			
4:00 p.m.	**Panel Discussion: New Robotic Technologies**			

Lobby Level with Blue Room



Mayor Suite



Mezzanine Level

Second Level

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 28.

Educational Needs
The Secretary of the SESAUA (S. Duke Herrell III, MD, FACS) consulted with members of the Committee on Education and Science and Executive Committee members including SESAUA Past President, Scott Sellinger, MD, FACS; President, Glenn Preminger, MD; and Chair, Committee on Education and Science, Chad 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 Office of Education of the AUA that there continue to be significant educational needs for our annual meeting and scientific program.

Practicing urologists, as well as those in training, are confronted with learning extensive amounts of knowledge. The broad scope of information, including basic and translational science, clinical practice, and socioeconomic challenges, makes it difficult for urologists to current with latest developments, thereby leading to professional practice gaps. The sessions at this meeting will provide participants with current knowledge to bridge these gaps and facilitate the delivery of optimal patient care.

Urologic abnormalities can present with a myriad of clinical symptoms and signs. Accurate differential diagnosis and clinical management, which meets current standards of care, require ongoing review of the disease presentations as well as the appropriate use of safe and cost-effective diagnostic modalities and various pharmacologic, minimally invasive, and operative management options. In addition, advancements in medical science and progress in disease management require basic and clinical research. Presentation and discussion of peer-reviewed results of investigations and summaries provide “cutting edge” updates for practicing clinicians and essential feedback to researchers on the practical applications and translation of their investigations to clinical practice.

Educational Objectives
At the conclusion of the 84th Annual Meeting of the Southeastern Section of the AUA, 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.
Employ new approaches for dealing with patients with chronic pain to decrease 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.
Discuss how to best utilize APPs in a urology practice.

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 **25.50** *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/Disclosures

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.

Online CME Submission Instructions

84th Annual Meeting

Match 18 - 21, 2020
The Roosevelt New Orleans,
A Waldorf Astoria Hotel
New Orleans, LA

CME Submissions are Going Green by Going Online!

Please note the electronic CME submission form will open Friday, March 20th at 12:00 noon and close on Monday, March 30th at 11:59 pm. Central.

The CME submission form may be accessed via the link below or the QR code to the left.

Submit your CME Certification online at sesaua.org

CME INSTRUCTIONS
(THREE STEP PROCESS: SUBMIT CERTIFICATION ONLINE AND COMPLETE EVALUATION)

1. **Submit your CME certification online and record your attendance.** In order to submit your CME, visit sesaua.org. Attendees should claim only credit commensurate with the extent of their participation in the activity. For physicians to officially receive *AMA PRA Category 1 Credits™* and for nonphysicians to document their attendance, participants are required to submit the CME online certification.

   Electronic CME submission form will open Friday, March 20th at 12:00 noon and close on Monday, March 30th at 11:59 pm. Central. Please submit this form after you've concluded your participation in the meeting.

2. **Complete Evaluation.** Approximately 2 weeks post-meeting, **you will receive an email with a link to the CME Evaluation Survey**. Follow the link to complete the survey online. Evaluations are open for only 60 days after the activity.

3. **Access your CME Certificate.** Following completion of the CME Evaluation Survey, you will be redirected to the AUA website. Once you sign-in with your AUA ID and password, you will have access to your certificate.

Attendance and evaluations will be tracked.

Need Help?

If you have difficulties with the online CME submission, you may contact us via email at **cmeinfo@wjweiser.com** or via phone during regular business hours (8:30 am - 5:00 pm Central) at **847-517-7225.**

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.

Audio, Video and Photographic Equipment: The use of audio, video and other photographic recording equipment is prohibited by attendees inside AUA meeting rooms.

Reproduction Permission: Reproduction of written materials developed for this AUA course is prohibited without the written permission from individual authors and the American Urological Association.

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.

SESAUA Disclaimer Statement
Statements, opinions and results of studies contained in the program and abstracts are those of the presenters/authors and do not reflect the policy or position of the SESAUA, nor does the SESAUA provide any warranty as to their accuracy or reliability.

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Filming/Photography Statement
No attendee/visitor at the SESAUA 84th 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
Phone: (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 Office, Gen. Mgr: Wendy J. Weiser
Executive 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

2019 – 2020

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Chad W.M. Ritenour, MD; Atlanta, GA	2020
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Scott B. Sellinger, MD, FACS; Tallahassee, FL	2020

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Alexander W. Ramsay, MD; Charleston, SC 2021 (T1)
Ryan P. Terlecki, MD, FACS; Winston-Salem, NC 2021 (T1)
Michael J. Wehle, MD; Jacksonville, FL 2020 (T2)

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Terrence C. Regan, MD; Palm Coast, FL (Vice Chair)	2021
Brian E. Richardson, MD; Montgomery, AL (Alabama Representative)	2021
Lorie G. Fleck, MD; Montgomery, AL (Alabama Alternate Representatve)	2021
Martin K. Dineen, MD; Daytona Beach, FL (Consultant)	
Vincent G. Bird, MD; Gainesville, FL (Florida Representative)	2022
Terrence C. Regan, MD; Palm Coast, FL (Florida Alternate Representative)	2022
Thomas E. Shook, MD, MPH; Savannah, GA (Georgia Representative)	2022
Christopher P. Filson, MD, MS; Atlanta, GA (Georgia Alternate Representative)	2022
John M. Patterson, MD; Frankfort, KY (Kentucky Representative)	2022
Jason R. Bylund, MD; Lexington, KY (Kentucky Alternate Representative)	2022
Lester J. Prats, MD; New Orleans, LA (Louisiana Representative)	2022
Donald A. Elmajian, MD; Shreveport, LA (Louisiana Alternate Representative)	2022
Charles R. Moore, MD; Hattiesburg, MS (Mississippi Representative)	2022
To Be Determined (Mississippi Alternate Representative)	
Steve J. Hodges, MD; Winston-Salem, NC (North Carolina Representative)	2022
Matthew E. Nielsen, MD, MS, FACS; Chapel Hill, NC (North Carolina Alternate Representative)	2022
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)	2022
Ricardo F. Sanchez-Ortiz, MD; Hato Rey, PR (Puerto Rico Alternate Representative)	2022
Ross A. Rames, MD; Mt. Pleasant, SC (South Carolina Representative)	2022
To Be Determined (South Carolina Alternate Representative)	
Matthew J. Resnick, MD, MPH; Nashville, TN (Tennessee Representative)	2022
Cary W. Stimson Jr., MD, JD; Nashville, TN (Tennessee Alternate Representative)	2022

Membership Committee

Rolando Rivera, MD, FACS; Bonita Springs, FL (Committee Chair)	2020
Katie N. Ballert, MD; Lexington, KY	2022
Paul L. Crispen, MD; Gainesville, FL	2020
Thomas J. Polascik, MD, FACS; Chapel Hill, NC	2021
John P. Selph, MD; Birmingham, AL	2021
T. Brian Willard, MD; West Columbia, SC	2021

Nominating Committee

Dean G. Assimos, MD; Birmingham, AL (Committee Chair)	2020
Peter E. Clark, MD; Charlotte, NC (Member at Large)	2022
Jerry E. Jackson, MD, FACS; Sumter, SC (Past President)	2021
Rolando Rivera, MD, FACS; Bonita Springs, FL (Member at Large)	2021
Scott B. Sellinger, MD, FACS; Tallahassee, FL (Immediate Past President)	2020

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

Martin K. Dineen, MD, FACS; Tampa, FL (Representative)	2021
Raymond J. Leveillee, MD, FRCS-G; Cooper City, FL (Alternate Representative)	2021

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 G. Bird, MD; Gainesville, FL	2020
Andrew C. Peterson, MD, MPH, FACS; Durham, NC	2022
Terrence C. Regan, MD; Palm Coast, FL	2022

AUA History Committee

Paul W. F. Coughlin, MD, FACS; High Point, NC	2022

AUA Judicial & Ethics Council

Peter E. Clark, MD; Nashville, TN	2021
Gregory F. Murphy, MD, FACS; Greenville, NC	2021
Li-Ming Su, MD; Gainesville, FL	2022

AUA Practice Management Committee

Matthew J. Resnick, MD, MPH; Nashville, TN	2020

AUA Research Council

Benjamin K. Canales, MD, MPH; Gainesville, FL (Representative)	2020
Brant Inman, MD, MS; Durham, NC (Representative)	2022
Sunil Sudarshan, MD; Birmingham, AL (Representative)	2021

AUA Resident's Committee

Russell Terry, MD; Durham, NC (Representative)	2022

AUA Young Urologist Committee

John P. Selph, MD; Birmingham, AL (Representative)	2022

Numerical Membership of the SESAUA

Active		
Active Member		1,363
Active Member - Transfer Internal		1
Active Member - Transfer into Section		4
	Total Active Count:	**1,368**
Affiliate		
Affiliate Member		3
	Total Affiliate Count:	**3**
Allied		
Allied Member		1
	Total Allied Count:	**1**
Associate		
Associate Member		94
	Total Associate Count:	**94**
Honorary		
Honorary		
	Total Honorary Count:	**92**
Senior		
Senior Member		727
Senior Member - Transfer Internal		6
	Total Senior Count:	**733**
	Total Membership Count:	**2,291**

General Meeting Information

Registration/Information Desk Hours
Location: Roosevelt Pre-Function

Wednesday, March 18, 2020	7:00 a.m. – 5:00 p.m.
Thursday, March 19, 2020	6:00 a.m. – 5:20 p.m.
Friday, March 20, 2020	6:30 a.m. – 2:00 p.m.
Saturday, March 21, 2020	6:30 a.m. – 5:00 p.m.

Location: Crescent City Pre-Function

Exhibit Hall Hours
Location: Roosevelt Ballroom

Thursday, March 19, 2020	9:00 a.m. – 4:00 p.m.
	6:00 p.m. – 8:00 p.m.
Friday, March 20, 2020	7:00 a.m. – 11:00 a.m.

Speaker Ready Room Hours
Location: Napoleon Room

Wednesday, March 18, 2020	10:30 a.m. – 5:00 p.m.
Thursday, March 19, 2020	6:00 a.m. – 5:20 p.m.
Friday, March 20, 2020	6:30 a.m. – 2:00 p.m.
Saturday, March 21, 2020	6:30 a.m. – 5:00 p.m.

Spouse/Guest Hospitality Suite Hours
Location: Conti Room

Wednesday, March 18, 2020	7:30 a.m. – 10:30 a.m.
Thursday, March 19, 2020	7:30 a.m. – 10:30 a.m.
Friday, March 20, 2020	7:30 a.m. – 10:30 a.m.
Saturday, March 21, 2020	7:30 a.m. – 10:30 a.m.

BOARD OF DIRECTORS AND COMMITTEE MEETINGS

Executive Committee Lunch
Location: Pontalba Room
Tuesday, March 17, 2020 12:00 p.m. – 1:00 p.m.

Executive Committee Meeting
Location: Huey P. Long Boardroom
Tuesday, March 17, 2020 1:00 p.m. – 5:00 p.m.

Board of Directors Meeting
Location: Blue Room
Wednesday, March 18, 2020 7:00 a.m. – 11:00 a.m.

Nominating Committee Meeting
Location: Huey P. Long Boardroom
Thursday, March 19, 2020 12:15 p.m. – 1:30 p.m.

Health Policy Council Meeting
Location: Saenger Room
Thursday, March 19, 2020 5:10 p.m. – 6:00 p.m.

Residents Committee Meeting
Location: Crescent City Ballroom
Friday, March 20, 2020 2:00 p.m. – 3:00 p.m.

Annual Business Meeting
The SESAUA Annual Business Meeting will be held on Friday, March 20, 2020, from 10:15 a.m. - 10:45 a.m. at The Roosevelt New Orleans, in the ***Crescent City Ballroom***. 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 19, 2020
6:00 p.m. – 8:00 p.m.
Location: Roosevelt Ballroom
Attire: Business Casual
Cost: One (1) ticket included in registration, additional tickets are $150.00 for adults and complimentary for children.
Description: Welcome to New Orleans! Come enjoy a glass of wine, local cuisine and entertainment while catching up with colleagues and exhibitors.

Closing Reception
Saturday, March 21, 2020
6:00 p.m. – 7:30 p.m.
Location: Roosevelt Promenade
Attire: Cocktail Attire
Cost: One (1) ticket included in registration, additional tickets are $185.00.
Description: The 2020 Closing Reception will be a night to remember. Attendees will enjoy cocktails and hors d'oeuvres while reflecting on the Annual Meeting.

Optional Event

Foundation for Hospital Art "PaintFest"
Wednesday, March 18 – Friday, March 20, 2020
Hospital Art "Paintfest" will be open during Spouse/Guest Hospitality Suite Open Hours
Location: Conti Room — 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

Industry Satellite Symposium Events

WEDNESDAY, MARCH 18, 2020

11:00 a.m. - 12:00 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: Merck & Co., Inc. *Location: Waldorf Astoria Ballroom* ***"A Treatment Approach for Certain Patients With High-Risk Non-muscle Invasive Bladder Cancer (NMIBC)"*** Putao Cen, MD

THURSDAY, MARCH 19, 2020

12:15 p.m. - 1:30 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: Exact Sciences *Location: Orpheum Room* ***"Biomarkers for Early- and Advanced-stage Prostate Cancer"*** Brian Helfand, MD, PhD

12:15 p.m. - 1:30 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: Metuchen Pharmaceuticals *Location: Waldorf Astoria Ballroom* ***"Identifying, Engaging, and Treating Erectile Dysfunction for Men"*** Ken Mitchell, MPAS, PA-C

FRIDAY, MARCH 20, 2020

11:45 a.m. - 12:45 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: AbbVie *Location: Orpheum Room* ***"Practice Patterns and the Role of Testosterone In Prostate Cancer"*** Howard H. Berman, PhD, MSc

11:45 a.m. - 12:45 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: Janssen Biotech, Inc. *Location: Waldorf Astoria Ballroom* ***"Treating Patients with Advanced Prostate Cancer: Metastatic and Non-Metastatic PC"*** Paul Eber, MD & Vahan Kassabian, MD

SATURDAY, MARCH 21, 2020

11:55 a.m. - 1:10 p.m.	**Industry Sponsored Lunch Symposium** Sponsored by: Astellas Pharma and Pfizer Oncology *Location: Waldorf Astoria Ballroom* ***"Important Evidence-Based Changes in the Metastatic Castration-Sensitive Prostate Cancer Treatment Landscape"*** Jonathan Silberstein, MD, MBA, FACS

Thank You to Our 2020 Exhibitors

Alphabetical as of **3/3/2020**

AbbVie
Advanced Urology Institute, LLC
Allergan, Inc.
Alnylam Pharmaceuticals
Ambu, Inc.
American Urological Association, Inc.
Astellas Pharma and Pfizer Oncology
Astellas Pharma US, Inc.
Axonics Modulation Technologies
BD Medical
BK Medical
Blue Earth Diagnostics, Inc
Boston Scientific Corporation
BTL Industries
CAREstream America
Clarus Therapeutics, Inc.
Coloplast
Decipher Biosciences, Inc.
Dendreon Pharmaceuticals LLC
Dornier MedTech
EDAP TMS
Exact Sciences
Exosome Diagnostics, Inc
Ferring Pharmaceuticals
Flomentum Health
ForTec Medical
GAINSWave
Guerbet, LLC
HCA Healthcare
HealthTronics, Inc.
HIFU Prostate Services
Hitachi Healthcare
Janssen Biotech, Inc.
KARL STORZ
LABORIE
Lumenis, Inc.
Marley Drug, Inc
Medtronic
MenMD
Merck & Co., Inc.
Mercy Clinic
Metuchen Pharmaceuticals
MicroGen DX
Millennium Physician Group
Myriad Genetics, Inc.
NeoTract Teleflex
NextMed, LLC
Olympia Pharmacy
Olympus America, Inc.
Pacific Edge Diagnostics USA Ltd.
PathRight Medical
Photocure
Precision Micro Bio
PROCEPT BioRobotics
Progenics Pharmaceuticals
Richard Wolf Medical Instruments, Corp.
Siemens Healthineers
Southern Litho LLC
Stratify Genomics
Sun Pharma
Surgical Tables Inc.
Surgimate
The Southeast Permanente Medical Group
TOLMAR Pharmaceuticals
United Medical Systems
University Compounding Pharmacy
Vidant Health
ZERO-The End of Prostate Cancer

Industry Partners

The SESAUA wishes to thank and recognize our 2020 Industry Partners

Platinum Level Partners
AbbVie
Astellas Pharma and Pfizer Oncology
Exact Sciences
Janssen Biotech, Inc.
Merck & Co., Inc.
Metuchen Pharmaceuticals

Silver Level Partners
Astellas Pharma US, Inc.
Axonics Modulation Technologies
Boston Scientific Corporation
BTL Industries
Clarus Therapeutics, Inc.
Exosome Diagnostics, Inc.
Lumenis, Inc.
Myriad Genetics, Inc.

Thank You to Our 2020 Contributors
Astellas Pharma and Pfizer Oncology
Avero Diagnostics
Bayer HealthCare
BTL Industries
Exosome Diagnostics, Inc.
Flomentum Health
GAINSWave
Genentech
Lumenis, Inc.

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. John Denstedt graduated from medical school in 1982 at The University of Western Ontario in London, Canada. He completed his residency in Urology at Western between 1983 and 1987 followed by a fellowship in Endourology at Washington University in St. Louis. He returned to London and joined the Division of Urology in the Department of Surgery at Western in 1990.

In July 2002 he assumed the role of City-Wide Chair and Chief of the Department of Surgery at Western University and served in this role for 14 years. Dr. Denstedt is a Past Chair of the Canadian Association of Surgical Chairs and a past member of the American Urological Association Board of Directors. He completed a 10 year term as Treasurer of the Endourological Society in 2018.

He is the recipient of numerous honours and awards including being the first Canadian to have won the Gold Cystoscope Award from the American Urological Association in 1998 and the Lifetime Achievement award from the Endourological Society in 2019. Dr. Denstedt is currently Secretary of the American Urological Association the world's largest Urology organization with over 23,000 members worldwide.

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.

Dr. Angela Smith is an Associate Professor at the University of North Carolina (UNC) Department of Urology in Chapel Hill, North Carolina. She received her MD and Masters of Science in Clinical Research from the University of North Carolina, where she completed her urology residency. She is the Director of Urologic Oncology at the UNC Lineberger Comprehensive Cancer Center where she treats GU malignancies, including bladder, prostate and kidney cancer. She has a background in health services research and biostatistics with particular interests in patient-centered outcomes research, risk stratification, and quality of care for invasive bladder cancer. She is the co-PI for a PCORI large pragmatic trial in BCG refractory bladder cancer, PI for a PCORI Engagement Award with the Bladder Cancer Advocacy Network to engage patients in the research process, and has been funded by an AHRQ K08 grant that integrates patient-reported outcomes into post-cystectomy care through mobile health technology. Dr. Smith also serves as the Assistant Secretary of the American Urological Association and is also on the AUA Quality Improvement and Patient Safety Committee, Scientific Advisory Board for the Bladder Cancer Advocacy Network, Journal of Urology Editorial Board, and chair of the Urology Care Foundation Bladder Health Committee.

2020 Presidential Lecturer: Peter N. Schlegel, MD, FACS

Dr. Peter Schlegel is Senior Associate Dean, (Clinical Affairs), the James J. Colt Professor and Chairman of the Department of Urology at Weill Cornell Medical College, and Urologist-in-Chief at NewYork-Presbyterian Hospital. In his Clinical Affairs role, Dr. Schlegel is WCM's principal liaison in the clinical partnership between WCM and NYP and oversees strategy for growing the clinical enterprise. He is a former trustee of the American Board of Urology.

A graduate of the University of Massachusetts Medical School, Dr. Schlegel developed his academic urologic career during his medical residency with definition of the neurovascular anatomy of the pelvis, research performed under Dr. Patrick Walsh at Johns Hopkins. This anatomical work helped to form the basis for the procedure of "nerve-sparing" radical retropubic prostatectomy (for prostate cancer). After completion of his residency at Hopkins, he developed a special interest in endocrine action and male reproductive function and was a Fellow at The Population Council at The Rockefeller University. He joined the faculty at Weill Cornell in 1991. Dr. Schlegel has developed novel hormonal therapies for men with impaired testosterone production, was principal investigator on U.S. and international trials for GnRH agonists for prostate cancer, and has developed protocols for genetic testing of infertile men as well as to define the prognostic role of these tests in male infertility treatment. He has also developed, performed and published on novel techniques for sperm retrieval for azoospermic men. His technique for sperm retrieval in men with non-obstructive azoospermia referred to as "microdissection TESE" has been adopted at many centers around the world as an optimal approach for treatment. He has treated over 4,000 men with severe male infertility.

Full Scientific Program

All sessions will be located in ***Crescent City Ballroom*** unless otherwise noted.
Speakers and times are subject to change.

WEDNESDAY, MARCH 18, 2020

OVERVIEW

7:00 a.m. - 5:00 p.m. **Registration/Information Desk Open**
Location: Roosevelt Pre-Function

7:00 a.m. - 11:00 a.m. **Board of Directors Meeting**
Location: Blue Room

7:30 a.m. - 10:30 a.m. **Spouse/Guest Hospitality Suite Open**
Location: Conti Room

10:30 a.m. - 5:00 p.m. **Speaker Ready Room Hours**
Location: Napoleon Room

GENERAL SESSION

11:00 a.m. - 12:00 p.m. **Industry Sponsored Lunch Symposium**
Location: Waldorf Astoria Ballroom

12:05 p.m. - 12:15 p.m. **Opening Remarks**
President: Glenn M. Preminger, MD
Durham, NC

12:15 p.m. - 12:45 p.m. **State-of-the-Art Lecture: Management of N1 Prostate Cancer**
Guest Speaker: Christopher J. Kane, MD, FACS
San Diego, CA

12:45 p.m. - 2:15 p.m. **Panel Discussion: The APP in Urology**
Moderators: W. Patrick Springhart, MD
Greenville, SC
Raju Thomas, MD, FACS, MHA, FRCS
New Orleans, LA

Education of the APP in Urology
Panelist: W. Patrick Springhart, MD
Greenville, SC

The APP in Urology: An APP's Perspective
Panelist: Gilbert Comola, MSN, ANP-C
Nashville, TN

Urology APPs: Understanding the Value to Your Practice
Panelist: Scott B. Sellinger, MD, FACS
Tallahassee, FL

Challenges and Role of APPs
Panelist: Bonnie Proulx, DNP, APRN, PNP-BC
Atlanta, GA

2:05 p.m. - 2:15 p.m. **Discussion / Q&A**

2:15 p.m. - 3:15 p.m. **Panel Discussion: Opioids and Stone Disease: Dilemma and Opportunity**
Moderator: Glenn M. Preminger, MD
Durham, NC

Decreasing Acute Post Procedural Narcotic Use
Panelist: Nicole L. Miller, MD, FACS
Nashville, TN

The Challenging Opioid Patient: Strategies to Handle
Panelist: Davis P. Viprakasit, MD
Chapel Hill, NC

Stone Surgery and Narcotic Use: What We Know From Analysis of Large National Databases
Panelist: Aaron H. Lay, MD
Atlanta, GA

3:00 p.m. - 3:15 p.m. **Discussion / Q&A**

3:15 p.m. - 3:30 p.m. **Break**
Location: Crescent City Pre-Function

Concurrent Sessions Begin

Concurrent Session 1 of 5

3:30 p.m. - 5:00 p.m. **Bladder Cancer Podium Session**
Location: Crescent City Ballroom
Moderators: Jeffrey R. Gingrich, MD
Durham, NC
Chad R. Ritch, MD, MBA
Miami, FL

3:30 p.m. #1 **REPEAT TURBT FOR HIGH GRADE T1 UROTHELIAL CARCINOMA: CONTEMPORARY FINDINGS AND PREDICTORS OF UPSTAGING**
Michael Massari, Michael Blute, Michael Dennis, Ardalan Ahmad, Padraic O'Malley, Paul Crispen
University of Florida
Presented By: Michael Massari, BS, BA

3:37 p.m. #2 **SEPARATE DEEP MARGIN SPECIMENS CAN IMPROVE THE RATE OF MUSCULARIS PROPRIA ON TURBT PATHOLOGY: A RESIDENT-DRIVEN QUALITY IMPROVEMENT INITIATIVE**
Solomon Hayon, MD[1], Megan Gurjar, BSPH[2], Nathan Suskovic, BA[2], Mark Ehlers, MD[1], Pauline Filippou, MD[1], Kathryn Gessner, MD[1], Eric Wallen, MD[1], Matthew Nielsen, MD, MS[1], Hung-Jui Tan, MD, MSHPM[1]
[1]Department of Urology, University of North Carolina at Chapel Hill, [2]University of North Carolina at Chapel Hill, School of Medicine
Presented By: Solomon Hayon, M.D.

3:44 p.m. **#3** **IS COLD CUP BIOPSY FROM RESECTION BED AFTER TRANSURETHRAL RESECTION OF BLADDER TUMOR (TURBT) HELPFUL?**
Majid Mirzazadeh[1], Parth Thakker, Resident[2]
[1]Wake Forest University. Urology Department, Winston Salem, NV, [2]Wake Forest University
Presented By: Majid Mirzazadeh, MD

3:51 p.m. **#4** **THE EFFECT OF CONDUCTIVE HYPERTHERMIA ON MITOMYCIN C ABSORPTION DURING INTRAVESICAL CHEMOTHERAPY**
Wei Phin Tan, Andrew Chang, Wiguins Etienne, Brant Inman
Duke University Medical Center, Division of Urology, Durham, NC
Presented By: Wei Phin Tan, MD

3:58 p.m. **#5** **OBJECTIVE RISK SCORE RELIABLY PREDICTS 30-DAY MORTALITY AFTER RADICAL CYSTECTOMY**
Kristen Marley, MD, Howard Hasen, MD, Christopher Ledbetter, MD, Robert Wake, MD, Anthony Patterson, MD
University of Tennessee Health Science Center
Presented By: Kristen Marley, MD

4:05 p.m. **#6** **ANXIETY, DEPRESSION, AND PSYCHOLOGICAL DISTRESS IN PATIENTS UNDERGOING RADICAL CYSTECTOMY FOR BLADDER CANCER**
Blake Johnson, MSc[1], William Worrilow, BA[2], Patrick Meadors, PhD, LMFT[3], Stephen Riggs, MD[2]
[1]University of North Carolina School of Medicine, Chapel Hill, NC, [2]Levine Cancer Institute, Department of Urologic Oncology, Atrium Health, Charlotte, NC, [3]Levine Cancer Institute, Department of Supportive Oncology, Atrium Health, Charlotte, NC
Presented By: Blake Elliot Johnson, MSc

4:12 p.m. **#7** **SARCOPENIA IS AN UN-MODIFIABLE OUTCOMES PREDICTOR FOR BLADDER CANCER PATIENTS**
Gregory Barton, MD[1], Jeannette Wang[1], Andrew Chang, MD[1], Wei Phin Tan, MD[1], Joseph Fantony, MD[1], Paul Wischmeyer, MD[2], Rajan Gupta, MD[3], Brant Inman, MD[1]
[1]Duke University Medical Center, Division of Urology, [2]Duke University Medical Center, Department of Anesthesiology, [3]Duke University Medical Center, Department of Radiology
Presented By: Gregory John Barton, MD

4:19 p.m. **#8** **CLINICAL UTILITY OF POST-NEOADJUVANT CHEMOTHERAPY COMPUTED TOMOGRAPHY FOR MUSCLE-INVASIVE UROTHELIAL BLADDER CANCER**
Sagar Patel, BS[1,2], Caitlin Hensel, BS[1], Jiaxian He, PhD[1], William Worrilow, BA[1], James Kearns, MD[1], Kris Gaston, MD[1], Peter E Clark, MD[1], Stephen Riggs, MD[1]
[1]Atrium Health, Charlotte, NC, [2]University of North Carolina, Chapel Hill, NC
Presented By: Sagar Patel

4:26 p.m. **#9** **PALLIATIVE CARE USE AMONG BLADDER CANCER PATIENTS TREATED WITH RADICAL CYSTECTOMY**
Nourhan Ismaeel, Dattatraya Patil, Mehrdad Alemozaffar, Christopher Filson, Viraj Master, Aaron Lay
Emory University
Presented By: Nourhan Ismaeel, MD

4:33 p.m. **#10** **CHARACTERIZING THE BEHAVIOR OF SECONDARY BLADDER CANCER AFTER PELVIC RADIATION**
Caleb Natale, BA, Gabriel Leinwand, MD, Farid Zeineddine, BS, Jonathan Silberstein, MD, Louis Krane, MD
Tulane University School of Medicine, Department of Urology, New Orleans, LA
Presented By: Caleb Natale

4:40 p.m. **#11** **2019 BLADDER CANCER PATIENT SURVEY NETWORK RESULTS**
Judy Hamad[1], John Gore[2], Stephanie Chisolm[3], Robert Lipman[3], Angela Smith[4]
[1]University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC, [2]Department of Urology, University of Washington, Seattle, WA, [3]Bladder Cancer Advocacy Network, Bethesda, MD, [4]Department of Urology, University of North Carolina, Chapel Hill, NC
Presented By: Judy Hamad, BS

Concurrent Session 2 of 5

3:30 p.m. - 5:00 p.m. **Sexual Health and Infertility Podium Session**
Location: Waldorf Astoria Ballroom
Moderators: Thomas A. Masterson III, MD
Miami Beach, FL
Alan S. Polackwich Jr., MD
Miami Beach, FL

3:30 p.m. **#12** **PREDICTING INTRACAVERNOSAL INJECTION THERAPY FAILURE BY EVALUATING MEDICAL RISK FACTORS IN MEN WITH ERECTILE DYSFUNCTION**
Steven Lomax, MD[1], Patrick Houghton, MD[1], Joseph Ivey, MD[1], Kevin Parikh, MD[1], Grace Edwards[1], Peter Cannizzo[1], Colleen Ball, MS[2], Gregory Broderick, MD[1]
[1]Mayo Clinic Florida, Department of Urology, [2]Mayo Clinic Florida, Departmentof Health Sciences Research
Presented By: Steven Lomax, MD

3:37 p.m. **#13** **UTILIZING GRIP AND PINCH STRENGTH PRIOR TO THREE-PIECE IPP PLACEMENTS AS A PREDICTOR OF POST-OPERATIVE PATIENT SATISFACTION. CURRENT PRE- AND POST-OPERATIVE DATA**
Hayden Jahn, MD, John M. Williams, MD, Jacob Anderson, MD, Bryan Savage, Maria Latsis, Eric Laborde, MD
Ochsner Clinic Foundation
Presented By: Hayden E. Jahn, MD, BS

3:44 p.m. **#14** **MICROBIOME OF THE PRIMARY PENILE IMPLANT: A COMPARISON PILOT STUDY WITH WORRISOME RESULTS AT THE PUMP SPACE**
Gerard Henry, MD
Ark La Tex Urology
Presented By: Gerard D. Henry, MD

3:51 p.m. **#15** **SAFETY OF INFLATABLE PENILE PROSTHESIS IN SOLID ORGAN TRANSPLANT RECIPIENTS**
Brian Dick[1], Amit Reddy[1], Jacob Greenberg[1], Meredith Freeman[1], Nicholas Ottaiano[1], Laith Alzweri[1], Anil Paramesh[2], Wayne J. G. Hellstrom[1], Omer Raheem[1]
[1]Tulane University School of Medicine, Dept. of Urology, [2]Tulane University School of Medicine, Dept. of Transplantation
Presented By: Brian Dick

3:58 p.m. **#16** **INITIAL EXPERIENCE WITH THE BOSTON SCIENTIFIC TACTRA SEMI-RIGID PENILE PROSTHESIS: A MULTI-INSTITUTIONAL CASE SERIES**
Samantha Nealon, MD[1], Adam Baumgarten, MD[2], Premal Patel, MD[3], Ranjith Ramasamy, MD[3], Gerard Henry, MD[4], Rafael Carrion, MD[1]
[1]University of South Florida, [2]University of Texas Southwestern Medical Center, [3]University of Miami Health System, [4]Willis-Knighton Physician Network
Presented By: Samantha C. Nealon, MD

4:05 p.m. **#17** **MANAGEMENT OF PEYRONIE'S DISEASE IN THE PRE-VS POST XIAFLEX ERA**
Evan Mulloy, MD, Akanksha Mehta, MD, Datta Patil, MBBS, MPH
Emory University, Department of Urology, Atlanta, GA
Presented By: Evan A. Mulloy, MD

4:12 p.m. **#18** **FORMALIN VERSUS BOUIN SOLUTION FOR TESTIS BIOPSIES: WHICH IS THE BETTER FIXATIVE?**
James Ellenburg, MD[1], Peter Kolettis, MD[1], Joseph Drwiega, MD[2], Anna Posey[2], Matthew Goldberg, PhD[2], Jennifer Gordetsky, MD[3]
[1]University of Alabama at Birmingham Department of Urology, [2]University of Alabama at Birmingham Department of Pathology, [3]Vanderbilt University Department of Pathology
Presented By: James L. Ellenburg, MD

4:19 p.m. **#19** **WHOLE TESTES CRYOPRESERVATION FOR FUTURE AUTO-TRANSPLANTATION: COMPARISON OF DIFFERENT FREEZING METHODS**
Robert Wilson[1], Oludamilola Ademoyero, Msc[1], Elizabeth Greene, LATG[2], Zhen Chen, Msc[2], Anthony Atala, MD[1,3], Kelvin Brockbank, PhD[2], Hooman Sadri-Ardekani, MD, PhD[1,3]
[1]Wake Forest Institute for Regenerative Medicine, [2]Tissue Testing Technologies LLC, [3]Department of Urology, Wake Forest School of Medicine
Presented By: Robert Russell Alexander Wilson, BS

4:26 p.m. **#20** **PURGING OF MALIGNANT CELLS PRIOR TO SPEMRTAOGONIAL STEM CELL (SSC) AUTO TRANSPLANTATION TO RESTORE FERTILITY**

Omar Abdelaal[1,2], Darren Hickerson[1], Julie Allickson[1], Anthony Atala[3,4], Hooman Sadri-Ardekani[3,4]
[1]Wake Forest Institute for Regenerative Medicine, [2]Department of Urology, Faculty of Medicine, Zagazig University, [3]Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, [4]Department of Urology, Wake Forest School of Medicine
Presented By: Hooman Sadri-Ardekani, MD, PhD

4:33 p.m. **#21** **A CLINICALLY VALIDATED METHOD FOR DETECTING SPERMATOGONIAL STEM CELLS IN TESE NEGATIVE KLINEFELTER SYNDROME PATIENTS: A STEP TOWARD BIOLOGICAL PATERNITY**

Nicholas Deebel, MD[1], Haleh Soltangoraee, MD[2], Karl Reynolds[3], Kimberly Stogner-Underwood, MD[4], Mohamad Sadeghi, Ph.D[2], Anthony Atala, MD[1], Hooman Sadri-Ardekani, MD, Ph.D[1]
[1]Department of Urology, Wake Forest School of Medicine and Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC, [2]Avicenna Infertility Center, Avicenna Research Institute (ARI), ACECR, Tehran, Iran, [3]Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC, [4]Department of Pathology, Wake Forest School of Medicine, Winston-Salem, NC
Presented By: Nicholas Deebel, MD

4:40 p.m. **#22** **PROSPECTIVE CONTROL TRIAL OF VASOVASOSTOMY UTILIZING A NOVEL MICROSURGERY ROBOTIC PLATFORM VERSUS STANDARD MICROSURGERY**

Sijo Parekattil, Associate Professor[1,2], George De Boccard, Professor[3], Ahmet Gudeloglu, Assistant Professor[4], Nahomy Calixte, Assistant Professor[1,2], Mohammed Etafy, Fellow[1], Richard Mendelson, Director of Research[5], Jamin Brahmbhatt, Assistant Professor[6,2]
[1]PUR Clinic, [2]University of Central Florida, Clermont, FL, [3]Clinique Générale Beaulieu, Geneva, Switzerland, [4]Hacettepe University, Ankara, Turkey, [5]Keiser University Graduate School, Fort Lauderdale, FL, [6]UR Clinic
Presented By: Sijo J. Parekattil, MD

Concurrent Session 3 of 5

3:30 p.m. - 5:00 p.m. **Prostate Cancer I Poster Session**
Location: Chambers I&III
Moderators: Sanoj Punnen, MD, MAS
Miami, FL
Stephen J. Savage, MD
Charleston, SC

Poster #1 **SMALL MOLECULE INHIBITOR ASR600 TARGETS ANDROGEN RECEPTOR SIGNALING IN CASTRATION-RESISTANT PROSTATE CANCER**

William Rawls, Andrew Park, Thomas FitzGibbon, Murali Ankem
University of Louisville, Dept. of Urology, Louisville, KY
Presented By: William F. Rawls, MD

Poster #2 **LOSS OF FOXA2 IN NEUROENDOCRINE PROSTATE CANCER PROMOTES FUNCTIONAL ANDROGEN RECEPTOR RE-EMERGENCE**

Zachary M. Connelly, PhD[1,2], Shu Yang, MD[1], Nazih Khater, MD[3], Xiuping Yu, PhD[1]
[1]LSUHSC Shreveport, Dept of Biochemistry, [2]Dept of Surgery, [3]LSUHSC Shreveport, Dept of Urology
Presented By: Zachary M. Connelly, PhD

Poster #3 **ASSOCIATION BETWEEN ONCOTYPE DX GENOMIC PROSTATE CANCER SCORE AND FINAL TUMOR PATHOLOGY**

Christopher Chew[1], Marcio Covas Moschovas, Urology[2], Seetharam Bhat, Urology[2], Fikret Onol, Urology[2], Travis Rogers, Urology[2], Shannon Roof, Urology[2], Marco Sandri[2], Cathy Jensen, Urology[2], Vipul Patel, Urology[2]
[1]University of North Carolina School of Medicine,
[2]AdventHealth Global Robotics Institute
Presented By: Christopher Yee Aun Chew

Poster #4 **NEUTROPHIL LYMPHOCYTE RATIO AND PLATELET LYMPHOCYTE RATIO DO NOT PREDICT UPGRADING IN A RACIALLY DIVERSE PROSPECTIVE STUDY OF MEN WITH PROSTATE CANCER ON ACTIVE SURVEILLANCE**

T. Max Shelton, Jacob Greenberg, L. Spencer Krane
Department of Urology, Tulane University School of Medicine, New Orleans, LA, USA
Presented By: Thomas Shelton, MD

Poster #5 **IMPACT OF PROSTATE-SPECIFIC ANTIGEN DOUBLING TIME ON TIME TO METASTASIS AND OVERALL SURVIVAL IN PATIENTS WITH NONMETASTATIC CASTRATION-RESISTANT PROSTATE CANCER**

Stephen J. Freedland[1,2], Krishnan Ramaswamy[3], Stanislav Lechpammer[4], Jack Mardekian[3], Neil M. Schultz[5], Ahong Huang[6], Li Wang[6], Onur Baser[7], Daniel George[8]
[1]Division of Urology, Department of Surgery, Samuel Oschin Comprehensive Cancer Institute, Cedars-Sinai Medical Center, Los Angeles, CA, USA, [2]Section of Urology, Durham VA Medical Center, Durham, NC, USA, [3]Pfizer Inc., New York, NY, USA, [4]Pfizer Inc., San Francisco, CA, USA, [5]Astellas Pharma Inc., Northbrook, IL, USA, [6]STATinMED Research, Plano, TX, USA, [7]The University of Michigan, Ann Arbor, MI, USA, [8]Duke University School of Medicine, Durham, NC, USA
Presented By: Stephen J. Freedland, MD

Poster #6

OVERALL SURVIVAL BY RACE IN PATIENTS WITH CHEMOTHERAPY-NAÏVE METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (MCRPC) WHO WERE TREATED WITH ABIRATERONE ACETATE OR ENZALUTAMIDE

Daniel George[1], Megan McNamara[1,2], Krishnan Ramaswamy[3], Stanislav Lechpammer[4], Jack Mardekian[3], Neil M. Schultz[5], Li Wang[6], Onur Baser[7], Ahong Huang[6], Stephen J. Freedland[8,9]
[1]Duke University School of Medicine, Durham, NC, USA, [2]Section of Hematology and Oncology, Durham VA Medical Center, Durham VA, [3]Pfizer Inc., New York, NY, USA, [4]Pfizer Inc., San Francisco, CA, USA, [5]Astellas Pharma Inc., Northbrook, IL, USA, [6]STATinMED Research, Plano, TX, USA, [7]The University of Michigan, Ann Arbor, MI, USA, [8]Division of Urology, Department of Surgery, Samuel Oschin Comprehensive Cancer Institute, Cedars-Sinai Medical Center, Los Angeles, CA, USA, [9]Section of Urology, Durham VA Medical Center, Durham NC, USA
Presented By: Daniel George, MD

Poster #7

SURVIVAL RATES AND ECONOMIC OUTCOMES IN PATIENTS WITH CHEMOTHERAPY-NAÏVE METASTATIC CASTRATION-RESISTANT PROSTATE CANCER WHO WERE TREATED WITH ABIRATERONE ACETATE OR ENZALUTAMIDE

Daniel George[1], Krishnan Ramaswamy[2], Stanislav Lechpammer[3], Jack Mardekian[2], Neil M. Schultz[4], Ahong Huang[5], Li Wang[5], Onur Baser[6]
[1]Duke University School of Medicine, Durham, NC, USA, [2]Pfizer Inc., New York, NY, USA, [3]Pfizer Inc., San Francisco, CA, USA, [4]Astellas Pharma Inc., Northbrook, IL, USA, [5]STATinMED Research, Plano, TX, USA, [6]The University of Michigan, Ann Arbor, MI, USA
Presented By: Daniel George, MD

Poster #8

COMPARATIVE EFFICACY OF ENZALUTAMIDE, APALUTAMIDE AND DAROLUTAMIDE FOR TREATMENT ON NON-METASTATIC CASTRATE-RESISTANT PROSTATE CANCER: A NETWORK META-ANALYSIS

Jatinder Kumar[1], Shiva Gautam[2], Daniel Norez[2], Muhammad Umar Alam[1], Karthik Tanneru[1], Soroush Bazargani[1], Seyedbehzad Jazayeri[1], Joseph Costa[1], Mark Bandyk[1], Hariharan Palyapalayam Ganapat[1], Shahriar Koochekpour[1], KC Balaji[1]
[1]Department of Urology, University of Florida, Jacksonville, USA, [2]Department of biostatistics, University of Florida, Jacksonville, USA
Presented By: Jatinder Kumar

Poster #9

DAROLUTAMIDE DELAYS PROSTATE-SPECIFIC ANTIGEN PROGRESSION AND TIME TO NEXT ANTICANCER THERAPIES IN PATIENTS WITH NONMETASTATIC CASTRATION-RESISTANT PROSTATE CANCER

Ron Tutrone[1], Neal D. Shore[2], Matthew R. Smith[3], Teuvo L. J. Tammela[4], Albertas Ulys[5], Eglis Vjaters[6], Sergey Polyakov[7], Mindaugas Jievaltas[8], Murilo Luz[9], Boris Alekseev[10], Iris Kuss[11], Marie A. Le Berre[12], Amir Snapir[13], Toni Sarapohja[13], Karim Fizazi[14]

[1]Chesapeake Urology Research Associates, Towson, MD, USA, [2]Carolina Urologic Research Center, Atlantic Urology Clinics, Myrtle Beach, SC, USA, [3]Massachusetts General Hospital Cancer Center and Harvard Medical School, Urologic Oncology, Boston, MA, USA, [4]Tampere University Hospital, Tampere, Finland, [5]Institute of Oncology, Vilnius University, Lithuania, [6]Pauls Stradins Clinical University Hospital, Department Of Urology, Riga, Latvia, [7]N.N. Alexandrov National Cancer Centre, Department of Urology, Minsk, Belarus, [8]Lithuanian University of Health Sciences, Medical Academy, Department of Urology, Kaunas, Lithuania, [9]Hospital Erasto Gaertner, Curitiba, Brazil, [10]Hertzen Moscow Cancer Research Institute, Moscow, Russia, [11]Bayer AG, Berlin, Germany, [12]Bayer Healthcare, Loos, France, [13]Orion Corporation Orion Pharma, Espoo, Finland, [14]Institut Gustave Roussy, University of Paris-Sud, Villejuif, France

Presented By: Ron Tutrone, MD

Poster #10

PREDICTORS OF FUTURE INTERVENTION IN ACTIVE SURVEILLANCE PATIENTS USING THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE

Rashid Sayyid, MD, MSc[1], John Benton[2], Atul Lodh[2], Katherine Miller, MD[1], Hanan Goldberg, MD[3], Martha Terris, MD[1], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[1]

[1]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [2]School of Medicine, Medical College of Georgia-Augusta University, Augusta, GA, [3]Department of Urology, Upstate University Hospital, Syracuse, NY, [4]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN

Presented By: John Zachary Benton

Poster #11

COMORBIDITY BURDEN VERSUS PATIENT-REPORTED HEALTH IN DETERMINING TREATMENT FOR PROSTATE CANCER

Stephen McMahon[1], Angela Smith, Xi Zhou, Matthew Nielsen, Eric Wallen, Raj Pruthi, Hung-Jui Tan[2]

[1]University of North Carolina, [2]University of North Carolina, Dept Urology

Presented By: Stephen McMahon, B.S.

Poster #12

IMPACT OF INTRA-DUCTAL CARCINOMA ON CLINICAL OUTCOMES IN MEN WITH PROSTATE CANCER: SYSTEMATIC REVIEW AND META-ANALYSIS

Jatinder Kumar, Fellow[1], Shiva Gautam, Professor[2], Daniel Norez, Assistant[2], Muhammed Umar Alam, Fellow[3], Karthik Tanneru, Fellow[1], Soroush Bazargani, Resident[1], Seyedbehzad Jazayeri, Resident[1], Joseph Costa, Professor[3], Mark Bandyk, Associate Professor[1], Hariharan Palyapalay Ganapathi, Assistant Professor[1], Shahriar Koochekpour, Professor[3], KC Balaji, Professor[3]
[1]Department of Urology, University of Florida, Jacksonville, USA, [2], Department of Biostatistics, University of Florida, Jacksonville, USA, [3]Department of Urology, University of Florida, Jacksonville, USA.
Presented By: Jatinder Kumar

Poster #13

AFRICAN AMERICANS HAVE HIGHER RATES OF INVASIVE PROSTATE CANCER ON INITIAL DIAGNOSIS AND HIGHER RATES OF MORTALITY IN MISSISSIPPI

Kieran Hynes, Charles Pound
University of Mississippi Medical Center, Department of Surgery, Division of Urology
Presented By: Kieran Hynes, MD

Poster #14

ASSOCIATION BETWEEN SEXUAL ORIENTATION AND PROSTATE CANCER SCREENING AMONG MALES 40 YEARS OLD AND OLDER

Vivian Wong[1], Elias Atri[1], Jeffrey Wei[1], Billy Cordon, MD[2], Pura Rodriguez de la Vega, MPH[1], Grettel Castro, MPH[1], Juan Zevallos, MD[1], Alan Nieder, MD[2]
[1]Florida International University Herbert Wertheim College of Medicine, [2]Columbia University Division of Urology, Mount Sinai Medical Center, Florida
Presented By: Vivian Wong

Poster #15

URINARY EXOSOME TEST AND MP-MRI FOR PROSTATE CANCER SCREENING: A SINGLE INSTITUTION EXPERIENCE

Adam Nolte, George Wayne, Juan Cedeno, Elizabeth Nagoda, Alejandra Perez, Diana Lopategui, Jorge Pereira, Akshay Bhandari, Alan Nieder
Mount Sinai Medical Center, Miami Beach, FL
Presented By: Adam Nolte

Poster #16

TRANSPERINEAL VERSUS TRANSRECTAL ULTRASOUND-GUIDED SYSTEMATIC BIOPSY: UNDERSTANDING THE TRUE COSTS UTILIZING TIME-DRIVEN ACTIVITY-BASED COSTING

Aaron Laviana[1], Eliza Cricco-Lizza[2], Michael Gross[2], Michael Tzeng[2], Michael Gorin[3], Timothy McClure[4], Jim Hu[2]
[1]Vanderbilt University Medical Center, Department of Urology, Nashville, TN, [2]Weill-Cornell Medical College, Department of Urology, New York, New York, [3]Johns Hopkins University, Department of Urology, Baltimore, MD, [4]Weill-Cornell Medical College, Department of Urology and Radiology, New York, New York
Presented By: Aaron Laviana, MD

3:30 p.m. - 5:00 p.m. **Nephrolithiasis Poster Session**
Location: Chambers II&IV
Moderators: Andrew M. Harris, MD
Lexington, KY
Kenneth Ogan, MD
Atlanta, GA

Poster #17 **THE CONTRIBUTION OF ASCORBIC ACID TO URINARY OXALATE IN A MOUSE MODEL**
Zachary Burns[1], Carter Boyd[1], Nikhi Singh[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham Medical School, [2]University of Alabama at Birmingham, Department of Urology
Presented By: Zachary Burns

Poster #18 **THE CONTRIBUTION OF ASCORBIC ACID TO URINARY OXALATE IN HUMANS**
Zachary Burns[1], William Poore[1], Carter Boyd[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham Medical School, [2]University of Alabama at Birmingham Department of Urology
Presented By: Zachary Burns

Poster #19 **ASSOCIATION OF CHRONIC KIDNEY DISEASE STAGE WITH 24-HOUR URINE VALUES AMONG PATIENTS WITH NEPHROLITHIASIS**
Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Cosmin A. Bejan, PhD[2], Ryan S. Hsi, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, [2]Department of Biostatistics, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Poster #20 **URINARY CITRATE WASTING ASSOCIATES WITH OBESITY AND DIABETES MELLITUS AMONG NEPHROLITHIASIS PATIENTS**
Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Cosmin A. Bejan, PhD[2], Ryan S. Hsi, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, [2]Department of Biostatistics, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Poster #21 **ABDOMEN-ONLY CT FOR ASYMPTOMATIC UROLITHIASIS FOLLOW-UP IS SAFE, CHEAPER AND AS EFFECTIVE AS CT ABDOMEN/PELVIS**
Michael Fritz, BS[1], Andres Ayoob, MD[2], Jie Zhang, PhD[2], John Roger Bell, MD[3]
[1]University of Kentucky, College of Medicine, [2]University of Kentucky, Department of Radiology, [3]University of Kentucky, Department of Urology
Presented By: Michael Fritz, Biology, B.S.

Poster #22 **HUMAN VS MACHINE: COMPARISON OF MANUAL VERSUS AUTOMATED SOFTWARE CT MEASUREMENTS OF STONE PHANTOMS**
Andrew Harris, MD, Morgan Cash, Leslie Peard, MD, Issa Mohammed, MD, James Lee, MD, Jason Bylund, MD, Amul Bhalodi, MD, John Bell, MD
University of Kentucky
Presented By: Leslie M. Peard, MD

Poster #23 **BENCHTOP ASSESSMENT OF A NEW SINGLE-USE FLEXIBLE URETEROSCOPE**
Russell Terry, MD, Patrick Whelan, MD, Robert Qi, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University Medical Center
Presented By: Patrick Whelan, MD

Poster #24 **COST BENEFITS OF DISPOSABLE VS. REUSABLE URETEROSCOPES AT A TERTIARY REFERRAL TEACHING INSTITUTION**
Katie Flower, Stephen Savage
Medical University of South Carolina
Presented By: Katie Flower, MD

Poster #25 **THE DIFFERENCE IN TRIPLE-D SCORES USING AXIAL AND CORONAL STONE DENSITIES FOR PREDICTING SUCCESS OF SHOCKWAVE LITHOTRIPSY**
Omar Dawood[1], Eric Wendel, MD[2], Bryan Savage[3], Juan Jiminez, MD[2], Michael Maddox, MD[2]
[1]Southern Illinois University, [2]Ochsner Medical Center, [3]University of Queensland
Presented By: Eric Wendel, MD

Poster #26 **ASSESSING SURGERY COUNSELING IN PATIENTS WITH NEPHROLITHIASIS**
Anand Prabhu, Amul Bhalodi, MD, John Roger Bell, MD, Jason Bylund, MD, Andrew Harris, MD
University of Kentucky
Presented By: Anand Sachin Prabhu, B.S.

Poster #27 **IMPLEMENTATION OF A PATIENT ALGORITHM TO REDUCE CT UTILIZATION VIA ULTRASONOGRAPHY IN THE ER SETTING**
Sam Fisher, Matthew Sorensen, Oliver Benton, Nilay Patel, James Bienvenu, John Lacy, Wesley White, Ryan Pickens
University of Tennesee Medical Center, Knoxville, TN
Presented By: John Sam Fisher, MD

Poster #28 **FACTORS AFFECTING OUTCOMES FOLLOWING MINI-PERCUTANEOUS NEPHROLITHOTOMY FOR LARGE INTRA-RENAL STONES**
Ilan Klein, Rahul Dutta, Marc Colaco, Jorge Gutierrez-Aceves
Wake Forest School of Medicine
Presented By: Rahul Dutta, MD

Poster #29 **OPIOID USE IN PATIENTS WITH CYSTINURIA**
Nikhi Singh[1], William Poore[1], Zachary Burns[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham, School of Medicine, [2]University of Alabama at Birmingham, Department of Urology
Presented By: Nikhi Paul Singh

Poster #30 **IN VIVO ASSESSMENT OF HO:YAG LASER HEAT PRODUCTION DURING URETEROSCOPY**
Russell Terry, MD[1], Kohldon Boydston, MD[1], Evan Carlos, MD[1], Brent Winship, MD, Patrick Whelan, MD[1], Derek Ho, Ph.D[2], Pei Zhong, Ph.D[2], Glenn Preminger, MD[1], Michael Lipkin, MD, MBA[1]
[1]Division of Urology, Duke University, [2]Pratt School of Engineering, Duke University
Presented By: Russell Terry, MD

Poster #31 **USE OF OPTICAL COHERENCE TOMOGRAPHY TO ASSESS THE IMPACT OF PULSE MODULATION ON HOLMIUM:YAG LASER-INDUCED URETERAL INJURY**
Robert Qi, MD[1], Derek Ho, PhD[2], Russell Terry, MD[1], Patrick Whelan, MD[1], Glenn Preminger, MD[1], Pei Zhong, PhD[2], Michael Lipkin, MD, MBA[1]
[1]Division of Urology, Duke University Medical Center, [2]Pratt School of Engineering, Duke University
Presented By: Robert Qi, MD

Poster #32 **LONGTERM HEALTH SURVEY OF PEDIATRIC IDIOPATHIC STONEFORMERS**
Carter Boyd[1], Nikhi Singh[1], Elena Gibson[1], Dustin Whitaker[1], Pankaj Dangle, MD[2]
[1]University of Alabama at Birmingham School of Medicine, [2]Department of Urology, University of Alabama at Birmingham
Presented By: Nikhi Paul Singh

Concurrent Session 5 of 5

4:00 p.m. - 5:00 p.m. **Video Session I**
Location: Orpheum Room
Moderators: John M. Lacy, MD
Knoxville, TN
Maxim J. McKibben, MD
Charlotte, NC

Video #1 **INSTITUTIONAL APPROACH TO ROBOTIC ASSISTED LAPAROSCOPIC RETROPERITONEAL LYMPH NODE DISSECTION**
Jesse Jacobs, MD, Pauline Filippou, MD, Benjamin McCormick, MD, Gopal Narang, MD, Ray Tan, MD, Marc Bjurlin, DO
University of North Carolina, Department of Urology
Presented By: Jesse Jacobs, MD

Video #2 **PERCUTANEOUS REMOVAL OF UPPER TRACT UROTHELIAL TUMORS**
Alice Wang, MD, Wilson Sui, MD, Matthew Resnick, MD, Ryan Hsi, MD
Vanderbilt University
Presented By: Alice Yinghui Wang, MD

Video #3 **ROBOTIC ASSISTED RADICAL PROSTATECTOMY WITH MINIMAL APICAL DISSECTION AND LATERAL PROSTATIC FASCIA PRESERVATION: AN EVOLUTION OF OUR CONVENTIONAL TECHNIQUE**
Marcio Covas Moschovas, Urology, Seetharam Bhat, Urology, Fikret Onol, Urology, Travis Rogers, Urology, Vipul Patel, Urology
AdventHealth Global Robotics Institute
Presented By: Marcio Moschovas, MD

Video #4 **DA VINCI SP RADICAL PROSTATECTOMY: STEP-BY-STEP TECHNIQUE**
Marcio Covas Moschovas, Urology, Seetharam Bhat, Urology, Travis Rogers, Urology, Fikret Onol, Urology, Shannon Roof, Urology, Anamaria Parus, Urology, Vipul Patel, Urology
AdventHealth Global Robotics Institute
Presented By: Marcio Moschovas, MD

Video #5 **ROBOTIC DISTAL URETERECTOMY WITH URETERO-ENTERIC REIMPLANT**
Eric Riedinger[1], Kevin Reed[2], Wesley White[2]
[1]University of Tennessee Medical Center , Knoxville, TN, USA, [2]University of Tennessee Medical Center, Knoxville, TN, USA
Presented By: Eric Christopher Riedinger, MD

Video #6 **SIMULTANEOUS THORACIC AND ABDOMINAL ROBOTIC TECHNIQUE FOR LEVEL IV CAVAL THROMBECTOMY**
Amanda C. Threlkeld, MD[1], Matthew Watson, DO[1], Nathan Jung, MD[2], Mattew Barker, MD[3], Larry Shears, MD[3], Amar Singh, MD[1]
[1]University of Tennessee College of Medicine, Chattanooga, TN, [2]Virginia Mason Medical Center, Seattle, WA, [3]Erlanger Health Systems, Chattanooga, TN
Presented By: Amanda C. Threlkeld, MD

Concurrent Sessions End

THURSDAY, MARCH 19, 2020

OVERVIEW

6:00 a.m. - 5:20 p.m. **Registration/Information Desk Open**
Location: Roosevelt Pre-Function

6:00 a.m. - 5:20 p.m. **Speaker Ready Room Hours**
Location: Napoleon Room

7:30 a.m. - 10:30 a.m. **Spouse/Guest Hospitality Suite Open**
Location: Conti Room

9:00 a.m. - 4:00 p.m. **Exhibit Hall Open**
Location: Roosevelt Ballroom

6:00 p.m. - 8:00 p.m. **Welcome Reception**
Location: Roosevelt Ballroom

Concurrent Sessions Begin

Concurrent Session 1 of 4

7:00 a.m. - 8:30 a.m. **Health Services Research Poster Session**
Location: Chambers I&III
Moderators: Andrew M. Harris, MD
Lexington, KY
Akanksha Mehta, MD, MS
Atlanta, GA

Poster #33 **DO THE AUA GUIDELINES FOCUSING ON SMALL RENAL MASSES PERMEATE INTO PRACTICE? IDENTIFYING AN OPPORTUNITY FOR IMPROVEMENT IN PATIENT EDUCATION AND RENAL BIOPSY PERFORMANCE**
Patrick Probst, Department of Urology, Howard Hasen, Department of Urology, Christopher Ledbetter, Department of Urology, Robert Wake, Department of Urology, Anthony Patterson, Department of Urology
University of Tennessee Health Science Center - Memphis, TN
Presented By: Patrick Probst, MD

Poster #34 **INITIAL EVALUATION OF CLINICAL OUTCOMES BEFORE AND AFTER IMPLEMENTATION OF AN ENHANCED RECOVERY CLINICAL CARE PATHWAY FOR RENAL SURGERY**
Blair Townsend, MD, MBA[1], William Worrilow, BA[1], Myra Robinson, MSPH[2], Hamza Beano, MD[1], Blair Parker, CNL[1], Halie Cartner, CNL[1], Katherine Whitton, NP[1], Jaclyn Mieczcowski, NP[1], Carol Haskin, PA[1], Lauren Childs, PA[1], Ornob Roy, MD[1], Kris Gaston, MD[1], Peter Clark, MD[1], Stephen Riggs, MD[1]
[1]Department of Urology, Levine Cancer Institute/Atrium Health, Charlotte, NC, [2]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, NC
Presented By: William Blair Townsend, MD, MBA

Poster #35 **POST OPERATIVE PAIN SCORES AND TIME TO RETURN OF BOWEL FUNCTION AFTER IMPLEMENTATION OF AN ENHANCED RECOVERY CLINICAL CARE PATHWAY FOR RENAL SURGERY**

William Worrilow, BA[1], Blair Townsend, MD, MBA[1], Myra Robinson, MSPH[2], Hamza Beano, MD[1], Blair Parker, CNL[1], Halie Cartner, CNL[1], Katherine Whitton, NP[1], Carol Haskin, PA[1], Jaclyn Mieczcowski, NP[1], Lauren Childs, PA[1], Peter Clark, MD[1], Ornob Roy, MD[1], Kris Gaston, MD[1], Stephen Riggs, MD[1]

[1]Department of Urology, Levine Cancer Institute/Atrium Health, Charlotte, NC, [2]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, NC

Presented By: Blair Townsend, MD, MBA

Poster #36 **SPECTRUM BIAS IN THE EVALUATION OF HEMATURIA: A SYSTEMATIC REVIEW**

Christopher Wallis, MD, PhD[1], Rashid Sayyid, MD, MSc[2], Roni Manyevitch, BS[3], Nathan Perlis, MD, MSc[4], Vinata Lokeshwar, PhD[5], Neil Fleshner, MD, MPH[4], Martha Terris, MD[2], Matthew Nielsen, MD, MS[6], Zachary Klaassen, MD, MSc[2]

[1]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN, [2]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [3]School of Medicine, St. George's University, University Centre Grenada, West Indies, Grenada, [4]Division of Urology, Department of Surgery, University of Toronto, Toronto, ON, Canada, [5]Georgia Cancer Center, Augusta, GA, [6]University of North Carolina Lineberger Comprehensive Cancer Center, Chapel Hill, NC

Presented By: Rashid Sayyid, MD, MSc

Poster #37 **THE ASSOCIATION BETWEEN PHYSCIAN TRUST AND DESIRE FOR SMOKING CESSATION: IMPLICATIONS FOR MOTIVATIONAL INTERVIEWING**

John Benton[1], Atul Lodh[1], Archibald Watson[1], Martha Tingen, PhD[2], Martha Terris, MD[3], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[3]

[1]School of Medicine, Medical College of Georgia-Augusta University, Augusta, GA, [2]Georgia Prevention Institute, Medical College of Georgia, Augusta, GA, [3]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [4]Department of Surgery, Division of Urology, University of Toronto, Toronto, ON, Canada

Presented By: John Zachary Benton

Poster #38 **LONG TERM PATTERNS OF COST AND UTILIZATION OF MEDICARE BENIFICIARIES WITH BLADDER CANCER**

Ankeet Shah[1], Frank Sloan[2], Arseniy Yashkin[3], Igor Akushevich[3], Brant Inman[1]

[1]Duke University Division of Urology, [2]Duke University Department of Economics, [3]Duke University Social Science Research Institute

Presented By: Ankeet Shah, MD

Poster #39 **PROLONGED LENGTH OF STAY (LOS) AFTER ROBOTIC RADICAL PROSTATECTOMY (RRP): WHAT PREOPERATIVE FACTORS INFLUENCE LOS?**
Ethan Matz, Ashok Hemal, Tim Craven, Ram Pathak
Wake Forest Baptist Medical Center
Presented By: Ethan L. Matz, MD

Poster #40 **OPEN VERSUS MINIMALLY-INVASIVE SURGICAL TECHNIQUES IN PEDIATRIC RENAL TUMORS: A POPULATION-LEVEL ANALYSIS**
Kirsten L. Simmons, Student/Trainee[1], Jason C. Chandrapal, MD[2], Steven Wolf, MS[3], Henry E. Rice, MD[4], Elisabeth E. Tracy, MD[4], Tamara Fitzgerald, MD, PhD[4], Gina-Maria Pomann, PhD[3], Jonathan C. Routh, MD, MPH[2]
[1]Duke University School of Medicine, [2]Division of Urologic Surgery, Duke University School of Medicine, [3]Department of Biostatistics and Bioinformatics, Duke University School of Medicine, [4]Division of Pediatric Surgery, Duke University School of Medicine
Presented By: Kirsten Lanae Simmons, BS

Poster #41 **NATIONWIDE TRENDS FOR INTERHOSPITAL TRANSFERS FOR UROLOGIC CONDITIONS FROM 2011-2017**
Vi Tran, MD, Amber Bettis, MA, Alexandria Corbeau, MA, Andrew Harris, MD
University of Kentucky
Presented By: Vi Thuy Tran, MD

Poster #42 **SOCIOECONOMIC FACTORS ASSOCIATED WITH PATIENT NO SHOWS IN THE AMBULATORY UROLOGY CLINIC.**
Angela Massey, Daniel Norez, Sabine Nguyen, Mark Bandyk, Hariharan Ganapathi, Marino Robert, Koochekpour Shahriar, Costa Joseph, Balaji KC
Dept of Urology UF-Jacksonville
Presented By: Sabine Nguyen, DO

Poster #43 **AN INSTITUTIONAL ASSESSMENT OF TURNOVER TIME IN UROLOGY CASES**
Nourhan Ismaeel, KC Biebighauser Bens, Dattatraya Patil, Kenneth Ogan, Christopher Filson, Akanksha Mehta, Aaron Lay
Emory University
Presented By: Nourhan Ismaeel, MD

Poster #44 **ASSESSING HEALTH LITERACY IN PATIENTS WITH NEPHROLITHIASIS**
Anand Prabhu[1], Amul Bhalodi, MD[1], John Roger Bell, MD[2], Jason Bylund, MD[2], Andrew Harris, MD[1]
[1]University of Kentucky, [2]UNIVERSITY OF KENTUCKY
Presented By: Anand Sachin Prabhu, B.S.

Poster #45 **SHOULD WE RELY ON YOUTUBE TO AUGMENT DISSEMINATION OF INFORMATION REGARDING SURGICAL PROCEDURES?**
Parth Thakker, Robert Wilson, Ram Pathak
Wake Forest Baptist Medical Center
Presented By: Parth Thakker, MD

Poster #46 **ADMISSIONS FOR RADIATION CYSTITIS ARE INCREASING AMONG CANCER SURVIVORS IN THE UNITED STATES: ANALYSIS OF THE HEALTH CARE COST AND UTILIZATION PROJECT**

William Boysen, MD, Brian Inouye, MD, Andrew Peterson, MD

Duke University Medical Center

Presented By: William R. Boysen, MD

Poster #47 **OUTCOMES OF PRIMARY AND REVISION ARTIFICIAL URINARY SPHINCTER (AUS) BY EITHER TRANSCORPORAL OR BULBAR URETHRAL CUFF PLACEMENT**

Tad Manalo, BS[1], George Ghareeb, MD, MBA[1], Nelson Nwannunu, BS, MS[2], Dattatraya Patil, MBBS, MPH[1], Kenneth Carney, MD, PharmD[1], Niall Galloway, MD[1], Lindsey Hartsell, MD[1]

[1]Emory University School of Medicine, Department of Urology, Atlanta, GA, [2]SUNY Downstate Health Sciences, Brooklyn, NY

Presented By: Tad Manalo

Poster #48 **EVALUATION OF FACTORS POSTOPERATIVE MORBIDITY ASSOCIATED WITH EARLY VERSUS LATE DISCHARGE FOLLOWING ARTIFICIAL URINARY SPHINCTER (AUS) SURGERY IN MALES IN THE UNITED STATES**

Hoang Minh Tue Nguyen[1], Igor Voznesensky[1], Mahmoud Khalil[2], Mohamed Kamel[2], Naleen Raj Bhandari[3], Nalin Payakachat[3], Rodney Davis[4], Bruno Machado[4], Wayne J. G. Hellstrom[1], Omer Raheem[1], Cooper Benson[1]

[1]Department of Urology, Tulane University, New Orleans, Louisiana, [2]Department of Urology, University of Arkansas for Medical Sciences, Little Rock, Arkansas, [3]Division of Pharmaceutical Evaluation and Policy, University of Arkansas for Medical Sciences, Little Rock, Arkansas, [4]Department of Urology, University of Arkansas for Medical Sciences, Little Rock, Arkansa

Presented By: Hoang Minh Tue Nguyen, MD

Concurrent Session 2 of 4

7:00 a.m. - 8:30 a.m. **Prostate Cancer Podium Session**

Location: Crescent City Ballroom

Moderators: Mark Gonzalgo, MD, PhD
Miami, FL
Rabii Madi, MD, MBA, FACS
Augusta, GA

7:00 a.m. **#23** **IMPACT OF EXPOSURE TO**

7:07 a.m. **#24** **PUERTO RICAN MEN WITH NEWLY DIAGNOSED PROSTATE CANCER EXHIBIT A HIGH PREVALENCE OF HYPOGONADISM**

Fernando Arroyo, MD, Ricardo Sanchez-Ortiz, MD
Robotic Urology and Oncology Institute and Division of Urology, University of Puerto Rico School of Medicine
Presented By: Fernando Arroyo

7:14 a.m. **#25** **MRI-TARGETED, SYSTEMATIC, OR COMBINED BIOPSY FOR PROSTATE CANCER DIAGNOSIS**

Michael Ahdoot[1], Andrew Wilbur[2], Sarah Reese[3], Amir Lebastchi[1], Sherif Mehralivand[4], Patrick Gomella[1], Sandeep Gurram[1], Paul Pinsky[5], Howard Parnes[5], W. Marston Linehan[6], Maria Merino[7], Peter Choyke[8], Joanna Shih[8], Baris Turkbey[9], Bradford Wood[10], Peter Pinto[11]
[1]National Cancer Institute, Urologic Oncology Branch, [2]Georgetown School of Medicine, [3]National Institutes of Health, [4]Molecular Imaging Program, Center for Cancer Research, National Institute of Health, [5]Division of Cancer Prevention, National Cancer Institute, National Institutes of Health, [6]Urologic Oncology Branch, National Cancer Institute, National Institutes of Health,, [7]Translational Surgical Pathology Section, Center for Cancer Research, National Cancer Institute, National Institutes of Health, [8]Biometric Research Program, Division of Cancer Treatment and Diagnosis, National Cancer Institute, National Institute of Health, [9]Molecular Imaging Program, Center for Cancer Research, National Institute of Health, Bethesda, [10]Radiology and Imaging Sciences,National Institute of Health, Bethesda, [11]Urologic Oncology Branch, National Cancer Institute
Presented By: Michael A. Ahdoot, MD

7:21 a.m. **#26** **WHEN CAN WE SKIP SYSTEMATIC PROSTATE BIOPSIES?**

Andrew Wilbur[1], Michael Ahdoot[2], Amir Lebastchi[2], Sherif Mehralivand[3], Patrick Gomella[2], Baris Turkbey[4], Bradford Wood[5], Peter Pinto[6]
[1]Georgetown School of Medicine, [2]National Institute of Health, [3]National Institue of Health, [4]Molecular Imaging Program, National Cancer Institute, [5]Center for Interventional Oncology NIH Clinical Center, [6]Urologic Oncology Branch Head, Prostate Cancer Section
Presented By: Michael A. Ahdoot, MD

7:28 a.m. **#27** **GENOMIC HETEROGENEITY IN TISSUE-BASED PROGNOSTIC SIGNATURES FROM PROSTATE BIOPSIES; RESULTS FROM TWO PROSPECTIVE TRIALS**

Nachiketh Soodana-Prakash, MBBS MS[1], Venkatasai S Atluri, MD[1], Radkha Stoyanova, PhD[2], Jessica Carrion, MSN APRN-FNP[1], Chad R Ritch, MD MBA[1], Bruno Nahar, MD[1], Mark L Gonzalgo, MD PhD[1], Bruce Kava, MD[1], Dipen J Parekh, MD MHA[1], Alan Pollack, MD[2], Sanoj Punnen, MD MAS[1]
[1]Department of Urology , University of Miami , Florida, [2]Department of Radiation Oncology , University of Miami , Florida
Presented By: Nachiketh Soodana-Prakash, MD, MS

7:35 a.m. **#28** **WHOLE TRANSCRIPTOME RNA INTERROGATION OF POST-DRE URINE TO ENHANCE PROSTATE CANCER DETECTION**

Dattatraya Patil, Urology, Eugene Huang, Biostatistics, Kathryn Pellegrini, Genomics Core, Almira Catic, Urology, Kristen Douglas, Urology, Sierra Williams, Urology, Bill Zheng, Urology, Martin Sanda, Urology, Carlos Moreno, Pathology; Bioinformatics
Emory University
Presented By: Martin G. Sanda, MD

7:42 a.m. **#29** **CHOICE OF RADICAL PROSTATECTOMY VERSUS RADIATION THERAPY FOR ACTIVE SURVEILLANCE PATIENTS: RESULTS FROM THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE**

Rashid Sayyid, MD, MSc[1], John Benton, BS[2], Atul Lodh, BS[2], Katherine Miller, MD[1], Hanan Goldberg, MD[3], Martha Terris, MD[1], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[1]
[1]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [2]School of Medicine, Medical College of Georgia-Augusta University, Augusta, GA, [3]Department of Urology, Upstate University Hospital, Syracuse, NY, [4]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN
Presented By: Rashid Sayyid, MD, MSc

7:49 a.m. **#30** **ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY WITH MINIMAL APICAL DISSECTION AND LATERAL PROSTATIC FASCIA PRESERVATION IMPROVES EARLY POSTOPERATIVE FUNCTIONAL RECOVERY**

Fikret Onol, Marcio Moschovas, Seetharam Bhat, Travis Rogers, Shannon Roof, Vipul Patel
AdventHealth Global Robotics Institute, Celebration, FL
Presented By: Fikret Fatih Onol, MD, FEBU

7:56 a.m. **#31** **COMPARATIVE ANALYSIS OF OUTCOMES FOLLOWING ROBOT-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP) OUTCOMES BEFORE AND AFTER THE USPSTF RECOMMENDATION IN 2012 ON PSA SCREENING**

Seetharam Bhat Bhat, Fellow, Fikret Onol, Fellow, Marcio Moschovas, Fellow, Travis Rogers, Fellow, Cathy Jenson, Fellow, Vipul Patel, Fellow
Global robotics institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

8:03 a.m. **#32** **A PREDICTIVE PRE AND POST-OPERATIVE NOMOGRAM FOR POST-OPERATIVE POTENCY RECOVERY**

Seetharam Bhat Kulthe Ramesh, Fellow, Fikret Onol, Fellow, Marcio Moschovas, Fellow, Travis Rogers, Fellow, Cathy Jenson, Coordinator, Marco Sandri, Statistician, Vipul Patel, Director
Global robotics institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

8:10 a.m. **#33** **RADIOTHERAPY AFTER RADICAL PROSTATECTOMY: EFFECT OF TIMING OF POST-PROSTATECTOMY RADIATION ON FUNCTIONAL OUTCOMES**

Heather Huelster, MD[1], Aaron Laviana, MD[1], Tatsuki Koyama, PhD[1], Zhiguo Zhao, PhD[1], Li-Ching Huang, PhD[1], Karen Hoffman, MD, MHSc[2], Ralph Conwill, BS[3], David Penson, MD, MPH[1], Daniel Barocas, MD, MPH[1]
[1]Vanderbilt University Medical Center, [2]University of Texas MD Anderson Cancer Center, [3]Vanderbilt Ingram Cancer Center
Presented By: Heather L. Huelster, MD

8:17 a.m. **#34** **THE ROLE OF BMI ON HOSPITAL READMISSION AFTER ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP)**

Ethan Matz[1], Ashok Hemal[1], Tim Craven[1], Catherine Robey[2], Ram Pathak[1]
[1]Wake Forest Baptist Medical Center, [2]Wake Forest School of Medicine
Presented By: Ethan L. Matz, MD

Concurrent Session 3 of 4

7:00 a.m. - 8:30 a.m. **Voiding Dysfunction and Reconstructive Surgery Podium Session**

Location: Waldorf Astoria Ballroom
Moderators: Kristy M. Borawski, MD
Chapel Hill, NC
Melissa R. Kaufman, MD,PhD, FACS
Nashville, TN

7:00 a.m. **#35** **MICRORNA AND MRNA EXPRESSION PROFILES DIFFERENTIATE INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME PATIENT SUBGROUPS BASED ON ANESTHETIC BLADDER CAPACITY AND HUNNERS LESION**

Tyler Overholt, MD[1], Robert Evans, MD[2], Catherine Matthews, MD[2], Gopal Badlani, MD[2], Trang Simon, BS[3], Olivia Cain, Stephen Walker, PhD[4]
[1]Wake Forest Baptist Medical Center Department of Urology, [2]Wake Forest Baptist Medical Center Department of Urology, Wake Forest Baptist Medical Center Female Pelvic Medicine and Reconstructive Surgery, [3]Wake Forest Institute for Regenerative Medicine, [4]Wake Forest Baptist Medical Center Department of Urology, Wake Forest Medical Center Female Pelvic Medicine and Reconstructive Surgery, Wake Forest Institute for Regenerative Medicine
Presented By: Tyler Lynne Overholt, MD

7:07 a.m. **#36** **SEVERITY OF LOWER URINARY TRACT SYMPTOMS ASSOCIATED WITH DIABETES DURATION**

Aman Bali, BA[1], Leah Davis, MS[2,3], Charles Scales, MD MSHS FACS[2,4]
[1]Duke University School of Medicine, [2]Division of Urologic Surgery, Duke University Medical Center, Durham, NC, [3]Duke Cancer Center Biostatistics, Duke University Medical Center, Durham, NC, [4]Duke Clinical Research Institute, Durham, NC
Presented By: Aman Sarihyan Bali, BA

7:14 a.m. **#37** **CONGENITAL UROLOGY IN ADULTHOOD: A SINGLE-INSTITUTION EXPERIENCE OF 128 PATIENTS**
Charlotte Wu[1,2], Madeline Cancian[1], Edwin Smith[1,2], Lindsey Hartsell[1], K. Jeff Carney[1], Niall Galloway[1]
[1]Emory University School of Medicine, [2]Children's Healthcare of Atlanta
Presented By: Charlotte Wu, MD

7:21 a.m. **#38** **IMPACT OF RACE AND IN-HOSPITAL OUTCOMES IN INDIVIDUALS WITH SPINA BIFIDA FOLLOWING INPATIENT UROLOGIC SURGERY**
Jason Chandrapal[1], Kirsten Simmons[1], Steven Wolfe[2], Gina-Maria Pomann[2], Todd Purves[1], John Wiener[1], Jonathon Routh[1]
[1]Division of Urologic Surgery, Duke University School of Medicine, Durham NC, [2]Department of Biostatistics and Bioinformatics, Duke University School of Medicine, Durham, NC
Presented By: Jason Chandrapal, MD

7:28 a.m. **#39** **INITIAL EXPERIENCE WITH DEVELOPING A GENDER AFFIRMING SURGERY PROGRAM IN KENTUCKY**
Margaret Higgins, MD[1], Shubham Gupta, MD[2]
[1]University of Kentucky, Dept. Urology, Lexington, KY, [2]Case Western Reserve University, Dept. Urology, Cleveland, OH
Presented By: Margaret M. Higgins, MD

7:35 a.m. **#40** **ASSOCIATION BETWEEN GAIT AND PELVIC FLOOR SYMPTOMS: A PILOT STUDY**
Kevin Morgan, M.D.[1], Erin McCallister, P.T., D.P.T[2], Daniel Flowers, P.T., D.P.T.[2], Amanda Mahoney, P.T., D.P.T.[2], Travis Wilmore[3], Clifton Frilot II, Ph.D.[2], Alex Gomelsky, M.D.[1]
[1]LSU Health Shreveport Department of Urology, [2]LSU Health Shreveport School of Allied Health Professions, [3]LSU Health Shreveport School of Medicine
Presented By: Kevin N. Morgan, MD

7:42 a.m. **#41** **CORRELATION OF URODYNAMIC PARAMETERS WITH POST-OPERATIVE URINARY RETENTION AFTER ADVANCE SLING PLACEMENT FOR STRESS URINARY INCONTINENCE**
Yu Zheng[1], Nicholas Major[1], Hailey Silverii[1], Goran Rac[1], Caitlin Lim[1], Rames Ross[2], Lindsey Cox[1], Eric Rovner[1]
[1]MUSC Dept of Urology, [2]MUSC Dept Of Urology
Presented By: Hailey Silverii

7:49 a.m. **#42** **ARTIFICIAL URINARY SPHINCTER INSERTION IN THE ERA OF ANTIBIOTIC STEWARDSHIP: ARE POSTOPERATIVE ANTIBIOTICS NECESSARY?**
Benjamin Dropkin, MD[1], Leah Chisholm, BA[2], Jeremiah Dallmer, BS[2], Niels Johnsen, MD[1], Roger Dmochowski, MD[1], Doug Milam, MD[1], Melissa Kaufman, MD, PhD[1]
[1]Vanderbilt University Medical Center, Department of Urology, Nashville, TN, [2]Vanderbilt University School of Medicine, Nashville, TN
Presented By: Benjamin M. Dropkin, MD

7:56 a.m. **#43** **INCREASING COMORBIDITY AND FRAILTY DO NOT IMPACT POSTOPERATIVE COMPLICATIONS AMONG MEN UNDERGOING ARTIFICIAL URINARY SPHINCTER IMPLANTATION**
Brian Inouye, Stephanie Sexton, William Boysen, Urzsula Kowalik, Tracy Truong, Maragatha Kuchibhatla, Drew Peterson
Duke University
Presented By: Brian M. Inouye, MD

8:03 a.m. **#44** **A NOVEL SACRAL NEUROMODULATION INFECTION PROTOCOL IS ASSOCIATED WITH REDUCTION IN DEVICE INFECTION**
Hayden Hill, MD[1], Thomas Dukovac, MD[1], Amy Long[2], James Conner[3], Colin Goudelocke, MD[1]
[1]Ochsner Clinic, New Orleans, LA, [2]University of Tennessee-Chattanooga, Chattanooga, TN, [3]DeBusk College of Osteopathic Medicine, Harrogate, TN
Presented By: Hayden M. Hill, MD

8:10 a.m. **#45** **REDUCING POSTOPERATIVE PAIN AFTER URETHROPLASTY: IS RECTAL GRAFT A VIABLE OPTION?**
Samantha Nealon, MD[1], Tej Desai, MS4[2], Kevin Heinsimer[1], Lucas Wiegand[1]
[1]University of South Florida, [2]Nova Southeastern College of Osteopathic Medicine
Presented By: Samantha C. Nealon, MD

8:17 a.m. **#46** **DELAYED PRIMARY CLOSURE OF FOURNIER'S GANGRENE: OUR 5-YEAR EXPERIENCE AT THE UNIVERSITY OF PUERTO RICO**
Ramphis Morales-López, MD[1], Esteban Tresgallo-Pares[1], Jose Saavedra-Belaunde, MD[2], Timoteo Torres-Santiago, MD[2], Antonio Puras-Baez, MD[2]
[1]Urology Section, University of Puerto Rico, San Juan, PR, [2]Urology Section, University of Puerto Rico
Presented By: Ramphis A. Morales-Lopez, MD

Concurrent Session 4 of 4

7:00 a.m. - 8:30 a.m. **Kidney Cancer Poster Session**
Location: Chambers II&IV
Moderators: James M. Bienvenu, MD
Knoxville, TN
Viraj A. Master, MD, PhD, FACS
Decatur, GA

Poster #49 **IDENTIFICATION OF A NOVEL STEM-LIKE CD4 T CELL IN KIDNEY CANCER**
Maria Cardenas, Caroline Jansen, Nataliya Prokhnevska, Viraj Master, M.D., Haydn Kissick, Ph.D
Department of Urology, Emory University School of Medicine
Presented By: Maria Andrea Cardenas

Poster #50 **NOVEL PLASMA GLYCOPROTEIN BIOMARKERS PREDICT PROGRESSION FREE SURVIVAL (PFS) IN CLEAR CELL RENAL CELL CARCINOMA (ccRCC)**

Daniela Haehn, MD[1], Amanda Myers, MD[1], Daniel Serie[2], Essa Bajalia[3], Giovanni Gonzalez, MD[3], Maurice Yu Wong[4], Ling Shen[4], Kaitlyn Mosser[4], Alex Parker, PhD[5], David Thiel, MD[3]

[1]Department of Urology, Mayo Clinic FL, [2]Biosciences Corporation, [3]Department of Urology, Mayo Clinic, FL, [4]Venn Biosciences Corporation, [5]Shands University of Florida at Jacksonville

Presented By: Amanda A. Myers, MD

Poster #51 **MIRNA OF EXOSOMES IN CLEAR CELL RENAL CELL CARCINOMA DEMONSTRATES POTENTIAL BIOMARKERS BETWEEN AGGRESSIVE AND INDOLENT DISEASE**

Joshua Pincus[1], Hogyoung Kim, PhD[2], Jacob Greenberg[1], Asim B. Abdel-Mageed, DVM, PhD[2,3,4], Louis S. Krane, MD[2]

[1]Tulane University School of Medicine, [2]Tulane University School of Medicine, Department of Urology, [3]Department of Pharmacology, [4]Tulane Cancer Center

Presented By: Joshua Pincus

Poster #52 **CORRELATION OF TOPOISOMERASE II (TOPO-II) EXPRESSION LEVELS WITH CLEAR CELL RENAL CELL CARCINOMA (ccRCC) SIZE AND STAGING**

Daniela Haehn, MD[1], Amanda Kahn[1], Amanda Myers, MD[2], Madison Parker[3], Collen Ball[4], Kevin Wu, MD[5], David Thiel, MD[3]

[1]Department of Urology, Mayo Clinic FL, [2]Department of Urology, Mayo Clinic FL, [3]Department of Urology, Mayo Clinic, FL, [4]Division of Biomedical Statistics and Informatics, Mayo Clinic, FL, [5]Department of Pathology, Mayo Clinic, FL

Presented By: Daniela Andrea Haehn, MD

Poster #53 **MOLECULAR MECHANISMS OF BETA-DEFENSIN 1 LOSS IN RCC**

Tad Manalo, BS[1], Natalie DeMars[2], Alexa Dantzler, BS[1], Haydn Kissick, PhD[1], Carey Jansen, BS[1], Viraj Master, MD, PhD[1], John Pattaras, MD[1], Kenneth Ogan, MD[1], Rebecca Arnold, PhD[1], John Petros, MD[1]

[1]Emory School of Medicine, Department of Urology, Atlanta, GA, [2]Eckerd College, St. Petersburg, FL

Presented By: Tad Manalo

Poster #54 **OVERALL SURVIVAL OF BIOPSY CONFIRMED T(ONE)B AND T(TWO)A KIDNEY CANCERS MANAGED WITH OBSERVATION: INFLUENCE OF TUMOR HISTOLOGY**

Jamie Michael[1], Nermarie Velazquez, MD[2], Audrey Renson, PhD[3], Hung-Jui Tan, MD[4], Tracy L. Rose, MD, MPH[5], Matt Raynor, MD[4], Stella K. Kang, MD[6], William C. Huang, MD[2], Marc A. Bjurlin, DO, MSc, FACOS[4]
[1]UNC School of Medicine, Chapel Hill, NC, USA, [2]Dept of Urology, NYU Langone Health, New York City, NY, USA, [3]Dept of Population Health, NYU Langone Health, New York City, NY, USA, [4]Dept of Urology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [5]Dept of Hematology/Oncology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [6]Dept of Radiology, NYU Langone Health, New York City, NY, USA
Presented By: Jamie Michael

Poster #55 **EXAMINING THE ROLE OF CONTRAST-ENHANCED RENAL ULTRASOUND IN CHARACTERIZING INDETERMINATE RENAL LESIONS IN THE SETTING OF CHRONIC KIDNEY DISEASE**

Ava Saidian, Department of Urology, Taylor Tucker, Kristin Porter, Department of Radiology, Stephen Leahy, Soroush Rais-Bahrami, Department of Urology
University of Alabama-Birmingham
Presented By: Ava Saidian, MD

Poster #56 **RENAL MASSES: PATHOLOGIC VARIATION IN THE DIALYSIS AND TRANSPLANT PATIENT POPULATION FOLLOWING LAPAROSCOPIC NEPHRECTOMY**

Kevin Parikh, MD[1], Amanda Kahn[1], Ashley Shumate, MD[1], Daniela Haehn, MD[1], Essa Bajalia[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic, Department of Urology, Jacksonville, FL, [2]Mayo Clinic, Division of Biomedical Statistics and Informatics, Jacksonville, FL
Presented By: Kevin Parikh, MD

Poster #57 **ASSESSMENT OF LAPAROSCOPIC NEPHRECTOMY OUTCOMES IN PATIENTS ON DIALYSIS AND RENAL TRANSPLANT PATIENTS COMPARED TO NORMAL CONTROLS**

Kevin Parikh, MD[1], Amanda Kahn[1], Ashley Shumate, MD[1], Daniela Haehn, MD[1], Essa Bajalia[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic, Department of Urology, Jacksonville, FL, [2]Mayo Clinic, Division of Biomedical Statistics and Informatics, Jacksonville, FL
Presented By: Kevin Parikh, MD

Poster #58

EFFECT OF 3-DIMENSIONAL, VIRTUAL REALITY MODELS FOR SURGICAL PLANNING OF ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY ON SURGICAL OUTCOMES: A RANDOMIZED CLINICAL TRIAL

Eric Riedinger[1], Ryan Pickens[1], James Bienvenu[1], Joseph Shirk[2], David Thiel[3], Eric Wallen[4], Jennifer Linehan[5], Ketan Badani[6], James Porter[7], Wesley White[1]
[1]Department of Urology, University of Tennessee Medical Center, Knoxville, TN, USA, [2]David Geffen School of Medicine, Department of Urology, University of California, Los Angeles, CA, USA, [3]Department of Urology, Mayo Clinic Florida, Jacksonville, FL, USA, [4]Chapel Hill School of Medicine, Department of Urology, University of North Carolina, Chapel Hill,, NC, USA, [5]John Wayne Cancer Institute, Providence St John's Health Center, Santa Monica, CA, USA, [6]Department of Urology, Icahn School of Medicine at Mount Sinai, New York, New York, USA, [7]Swedish Urology Group, Seattle, Washington, USA
Presented By: Eric Christopher Riedinger, MD

Poster #59

IS THERE A LEARNING CURVE PLATEAU FOR ACHIEVING TRIFECTA AND MINIMIZING OPERATIVE TIME (OT) FOR ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)?

Essa Bajalia[1], Kevin Parikh[1], Daniela Haehn[1], Amanda Kahn[1], Colleen Ball[2], David Thiel[1]
[1]Department of Urology, Mayo Clinic, Jacksonville, FL, USA, [2]Division of Biomedical Statistics and Informatics, Mayo Clinic
Presented By: Essa Michael Bajalia

Poster #60

THE MAP SCORE CAN HELP PREDICT LONGER OPERATIVE TIME IN OPEN PARTIAL NEPHRECTOMY

Katherine Cockerill, Amanda Kahn, Daniella Haehn, Colleen Ball, David Thiel
Mayo Clinic Jacksonville
Presented By: Katherine Cockerill, MD

Poster #61

VALIDATION OF AORTA-LESION-ATTENUATION DIFFERENCE ON PREOPERATIVE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY SCAN TO DIFFEERENTIATE BETWEEN MALIGNANT AND BENIGN RENAL TUMORS

Joseph Grajo, Jonathan Pavlinec, Laura Magnelli, Padraic O'Malley, Ardalan Ahmad, Li-Ming Su, Paul Crispen
University of Florida
Presented By: Jonathan George Pavlinec, MD

Poster #62

THE AORTIC-LESION-ATTENUATION-DIFFERENCE: EFFECTIVE AT DIFFERENTIATING BETWEEN ONCOCYTIC LESIONS AND CHROMOPHOBE RENAL CELL CARCINOMA ON THREE PHASE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY

Amanda Kahn, BS[1], Steven Lomax, MD[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic Department of Urology, [2]Mayo Clinic Division of Biomedical Statistics and Informatics
Presented By: Steven Lomax, MD

Poster #63 **A COMPARISION OF THE AORTIC-LESION-ATTENUATION-DIFFERENCE (ALAD) AND PEAK EARLY-PHASE ENHANCEMENT RATIO (PEER) TO PREOPERATIVELY DIFFERENTIATE BENIGN FROM MALIGNANT RENAL MASSES**
Steven Lomax, MD[1], Amanda Kahn, BS[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic Department of Urology, [2]Mayo Clinic Division of Biostatistics and Informatics
Presented By: Steven Lomax, MD

Poster #64 **ERECTOR SPINAE PLANE BLOCK AS AN ADJUNCT TO MULTIMODAL ANALGESIA IN KIDNEY SURGERY**
Eric Wendel, MD, Kathleen Arias, PhD, Matthew Patterson, MD, Stephen Bardot, MD, Michael Maddox, MD
Ochsner Medical Center
Presented By: Eric Wendel, MD

Concurrent Sessions End

8:30 a.m. - 9:30 a.m. **AUA Course of Choice Lecture: AUA Guideline 2019: Recurrent Urinary Tract Infection**
Guest Speaker: Jennifer T. Anger, MD, MPH, FPMRS
Beverly Hills, CA

9:30 a.m. - 9:45 a.m. **SESAUA Update**
President: Glenn M. Preminger, MD
Durham, NC

9:45 a.m. - 10:15 a.m. **Break/Visit Exhibits**
Location: Roosevelt Ballroom

10:15 a.m. - 11:30 a.m. **Panel Discussion: Prostate Cancer 2020: Workup and Staging**
Moderator: Dipen J. Parekh, MD
Miami, FL

Genetics and Markers
Panelist: Dipen J. Parekh, MD
Miami, FL

Prostate Biopsy in 2020 – What is Current Best Practice?
Panelist: Kristen R. Scarpato, MD, MPH, FACS
Nashville, TN

Imaging in Prostate Cancer
Panelist: Christopher J. Kane, MD, FACS
San Diego, CA

11:15 a.m. - 11:30 a.m. **Discussion / Q&A**

11:30 a.m. - 12:15 p.m. **Ballenger Lecture: Retrograde Intrarenal Surgery: What are the Limits**
Introducer: Glenn M. Preminger, MD
Durham, NC
Guest Speaker: John D. Denstedt, MD
London, ON

12:15 p.m. - 1:30 p.m. **Industry Sponsored Lunch Symposium**
Location: Waldorf Astoria Ballroom

12:15 p.m. - 1:30 p.m. **Industry Sponsored Lunch Symposium**
Location: Orpheum Room

Concurrent Sessions Begin

Concurrent Session 1 of 5

1:30 p.m. - 5:00 p.m. **Endourology Sub-Plenary Session**
Location: Crescent City Ballroom
Moderators: Vincent G. Bird, MD
Gainesville, FL
Michael E. Lipkin, MD, MBA
Durham, NC

1:30 p.m. - 2:50 p.m. **Endourology Podium Session**
Moderators: Vincent G. Bird, MD
Gainesville, FL
Michael E. Lipkin, MD, MBA
Durham, NC

1:30 p.m. **#47** **UPDATE ON MEDICAL EXPULSIVE THERAPY FOR URETERAL CALCULI IN ADULTS AND CHILDREN: A HIGHLY SELECTIVE REVIEW AND META-ANALYSIS**
Rachel Locke, B.S.[1], Elizabeth Kwenda, B.S.[1], Campbell Grant, M.D.[2], Romano DeMarco, M.D.[3], Christopher Bayne, M.D.[3]
[1]University of Florida, [2]Division of Pediatric Urology, Cincinnati Children's Hospital Medical Center, [3]Division of Pediatric Urology, University of Florida
Presented By: Rachel Locke

1:37 p.m. **#48** **USING AN ANIMATED VIDEO TO ENCHANCE PATIENT UNDERSTANDING OF URETEROSCOPY FOR NEPHROLITHIASIS**
Anand Prabhu, Amul Bhalodi, MD, John Roger Bell, MD, Jason Bylund, MD, Andrew Harris, MD
University of Kentucky
Presented By: Anand Sachin Prabhu, B.S.

1:44 p.m. **#49** **URETEROSCOPY COST ANALYSIS: IMPACT OF TECHNIQUE AND TRAINING ON DISPOSABLE EQUIPMENT COSTS**
Kevin Parikh, MD, Amanda Myers, MD, Giovanni Gonzalez, MD, Raymond Pak, MD, MBA
Mayo Clinic, Department of Urology, Jacksonville, FL
Presented By: Kevin Parikh, MD

1:51 p.m. **#50** **THE IMPACT OF PULSE LENGTH AND TYPE ON POPCORN LASER LITHOTRIPSY**
Russell Terry, MD, Kohldon Boydston, MD, Evan Carlos, MD, Brent Winship, MD, Patrick Whelan, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University
Presented By: Russell Terry, MD

1:58 p.m. **#51** **THE IMPACT OF LASER PULSE TYPE ON TEMPERATURE CHANGES DURING URETEROSCOPIC LASER ACTIVATION**
Russell Terry, MD[1], Brenton Winship, MD[1], Kohldon Boydston, MD[1], Evan Carlos, MD[1], Patrick Whelan, MD[1], Derek Ho, PhD[2], Pei Zhong, PhD[2], Glenn Preminger, MD[1], Michael Lipkin, MD, MBA[1]
[1]Division of Urology, Duke University Medical Center, [2]Pratt School of Engineering, Duke University
Presented By: Russell Terry, MD

2:05 p.m. **#52** **IMPACT OF STONE HOUNSFIELD UNIT HETEROGENEITY ON OPERATIVE DURATION, LASER ENERGY USAGE, AND NEED FOR SECOND PROCEDURE IN THE URETEROSCOPIC MANAGEMENT OF LARGE STONES**
Andrew Harris, MD[1,2], John Roger Bell, MD[1], Amul Bhalodi, MD[1], Jason Bylund, MD, MPH[1]
[1]University of Kentucky Medical Center Department of Urology, [2]VA Medical Center
Presented By: Jason R. Bylund, MD, MPH

2:12 p.m. **#53** **A COST COMPARITIVE STUDY OF MINI PCNL VERSUS PCNL IN STONES LARGER THAN 1.5 CENTIMETERS**
Sam Fisher, Winston Crute, Oliver Benton, Kevin Reed, John Lacy, Wesley White, Ryan Pickens
University of Tennesee Medical Center, Knoxville, TN
Presented By: Kevin Reed, MD

2:19 p.m. **#54** **LARGE-SCALE DATA ACQUISITION FROM THE ELECTRONIC HEALTH RECORD TO A SECURE RESEARCH DATABASE FOR NEPHROLITHIASIS: VALIDATION AND CLINICAL APPLICATION**
Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Adam Lewis, MS[2], Cosmin A. Bejan, PhD[3], Ryan S. Hsi, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, [2]Vanderbilt Institute for Clinical and Translational Research, [3]Department of Biomedical Informatics, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

2:26 p.m. **#55** **CAN A SIMPLE PHONE CALL IMPROVE POST-URETEROSCOPY OUTCOMES IN PATIENTS WITH PSYCHIATRIC DISEASE?**
Kohldon Boydston, MD, Russell Terry, MD, Patrick Whelan, MD, Brenton Winship, MD, Evan Carlos, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University Medical Center
Presented By: Evan C. Carlos, MD

2:33 p.m. **#56** **PERFORMANCE OF ULTRASOUND FOR ASYMPTOMATIC URETERAL STONES AFTER INITIAL SYMPTOMATIC EVENT**
Mark Ehlers, Leslie Donnelly Lorbacher, Christine Nikas, Davis P Viprakasit
University of North Carolina - Chapel Hill
Presented By: Mark Ehlers, MD

2:40 p.m. - 2:50 p.m. **Q&A**

2:50 p.m. - 3:10 p.m. **State-of-the-Art Lecture: Imaging in Stone Disease: What, When, Why?**
Speaker: Michael E. Lipkin, MD, MBA
Durham, NC

3:10 p.m. - 3:40 p.m. **Break/Visit Exhibits**
Location: Roosevelt Ballroom

3:40 p.m. - 5:00 p.m. **Endourology Panel Discussion: New Technologies and Approaches**
Moderators: Dean G. Assimos, MD
Birmingham, AL
John D. Denstedt, MD
London, ON

Optimizing Use of Imaging Modalities in PCNL: Ultrasound and Fluoroscopy
Panelist: Ryan S. Hsi, MD
Nashville, TN

Update on Laser Technologies for Treatment Urinary Lithiasis
Panelist: Manish N. Patel, MD
Charlotte, NC

Quality and Cost Effectiveness of Single Use Flexible Ureteroscopes for Treatment of Urinary Lithiasis
Panelist: Aaron H. Lay, MD
Atlanta, GA

What Outcomes Really Matter After Stone Surgery? Looking at the Patient's Perspective
Panelist: Davis P. Viprakasit, MD
Chapel Hill, NC

Concurrent Session 2 of 5

1:45 p.m. - 5:00 p.m. **Pediatric Sub-Plenary Session I**
Location: Orpheum Room

1:45 p.m. - 3:10 p.m. **Pediatric Podium Session**
Moderators: Christopher Bayne, MD
Gainesville, FL
Dana W. Giel, MD
Germantown, TN

1:45 p.m. **#57** **ASSESSING CLINICAL OUTCOMES BASED ON PEDIATRIC EXPERIENCE IN PEDIATRIC SURGICAL PATIENTS**
Rohit Tejwani, MD[1], Jason Chandrapal, MD[1], Brian Young, MD[1], Steven Wolf, MS[2,3], Jonathan Routh, MD, MPH[1]
[1]Duke University School Of Medicine, [2]Duke Cancer Institute, [3]Duke University Department Of Biostatistics
Presented By: Rohit Vikram Tejwani, MD, MS

1:52 p.m. **#58** **ARE NEGATIVE URINE CULTURES NEEDED PRIOR TO URODYNAMIC STUDIES IN CHILDREN?**
Patricia Maymi-Castrodad, Karina Escudero, Marcos Perez-Brayfield
University of Puerto Rico Medical Campus
Presented By: Patricia Nicole Maymi Castrodad, MD

1:59 p.m. **#59** **FIVE YEAR EXPERIENCE OF AN EXPERIMENTAL MALE FERTILITY PRESERVATION PROGRAM**
Adam Cohen, MD[1,2], Nima Pourhabibi Zarandi, MD[1], Guillermo Galdon, MD[1], Omar Abdelaal, MD[1], Banafsheh Nikmehr, PhD[1], Kimberly Stogner-Underwood, MD[3], Stanley Kogan, MD[1,2], Steve Hodges, MD[2], Stuart Howards, MD[2], Thomas Mclean, MD[4], Anthony Atala, MD[1,2], Hooman Sadri-Ardekani, MD, PhD[1,2]
[1]Wake Forest Institute of Regenerative Medicine, [2]Department of Urology, [3]Department of Pathology, [4]Section of Hematology-Oncology, Department of Pediatrics, Wake Forest School of Medicine, Winston Salem, NC
Presented By: Adam Bret Cohen, MD, BS

2:06 p.m. **#60** **PATIENTS WITH DISORDERS OF SEX DEVELOPMENT AND THE DEVELOPMENT OF GONADAL MALIGNANCY - RISK STRATIFICATION AND LONG-TERM OUTCOMES**
Jacqueline Morin, MD[1], Leslie Peard, MD[1], Timothy Vanadurongvan, MD[2], Jonathan Walker, MD[2], M. Irfan Donmez, MD[2], Ali M. Ziada, MD[1], Amanda F. Saltzman, MD[1]
[1]Department of Urology, University of Kentucky, Lexington, KY, [2]Department of Surgery, Division of Urology, University of Colorado School of Medicine, Aurora, CO
Presented By: Jacqueline Morin, MD

2:13 p.m. **#61** **EXPERIENCE WITH CIRCUMCISION TECHNIQUES IN OLDER CHILDREN PERFORMED UNDER LOCAL ANESTHESIA IN THE OFFICE SETTING**
Luis Perez, MD, Winifred Owumi, MD, Judy Mclendon, RN, Jorge Romero, MA
Children's Urology of the Carolinas, Charlotte, NC
Presented By: Luis Manuel Perez, MD

2:20 p.m. **#62** **USE OF POSTOPERATIVE INCISIONAL PAIN CATHETERS IN CHILDREN**
Hiroko Miyagi[1], Romano DeMarco[1], Christopher Bayne[1], Hans Pohl[2]
[1]University of Florida, Dept of Urology, Gainesville, FL, [2]Children's National, Division of Urology, Washington, D.C.
Presented By: Hiroko Miyagi, MD

2:27 p.m. **#63** **OUTCOMES OF INTERMEDIATE RISK (P2) URINARY TRACT DILATATION IN PEDIATRIC PATIENTS**
Obafunbi Abimbola, B.A.[1], Benjamin Smith, M.D.[2], Sherry Ross, M.D.[1]
[1]University of North Carolina Department of Urology, [2]University of North Carolina Department of Radiology
Presented By: Obafunbi Abimbola

2:34 p.m. **#64** **IMMUNE EXPRESSION IN CHILDREN WITH VESICOURETERAL REFLUX: A PILOT STUDY**
Ashely W. Johnston, MD, Jonathan C. Routh, MD, MPH, J. Todd Purves, MD, PhD, John S. Wiener, MD, Eda K. Holl, PhD
Duke University
Presented By: Ashley W. Johnston, MD

2:41 p.m. **#65** **IT'S A TEAM EFFORT: A LOOK AT THE ROLE OF UROLOGIC CONSULTATION AND FOLLOW-UP IN THE MANAGEMENT OF HIGH-GRADE PEDIATRIC RENAL TRAUMA**
Ching Man Carmen Tong, D.O.[1], Belinda Li, M.D.[1], Amber Greeno[2], Harold Lovvorn, M.D.[2], Abby Taylor, M.D.[1], Stacy Tanaka, M.D.[1], John W. Brock III, M.D.[1], Mark Adams, M.D.[1], John C. Pope IV, M.D.[1], John C. Thomas, M.D.[1], Douglass B. Clayton, M.D.[1]
[1]Division of Pediatric Urology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN, [2]Department of Pediatric Surgery, Vanderbilt University Medical Center, Nashville, TN
Presented By: Ching Man Carmen Tong, DO

2:48 p.m. **#66** **CORRELATION OF RELATIVE VALUE UNITS WITH SURGICAL COMPLEXITY AND PHYSICIAN WORKLOAD IN PEDIATRIC UROLOGY**
Case Wood[1], Allison Deal[1], Zoe Gan[2,1], Solomon Hayon[1], Angela Smith[1], Hung-Jui Tan[1], Raj Pruthi[3,1], Sherry Ross[1], Christine Nikas[1]
[1]University of North Carolina, [2]University of Pennsylvania, [3]University of California San Francisco
Presented By: Christine Nikas, MD

3:10 p.m. - 3:40 p.m. **Break/Visit Exhibits**
Location: Roosevelt Ballroom

3:40 p.m. - 5:00 p.m. **Open Forum: Why We Do the Things We Do**
Moderator: John S. Wiener, MD
Durham, NC

3:40 p.m. - 4:00 p.m. **Ureteroceles and Ectopic Ureter: Outcomes Based Management**
Guest Speaker: Craig A. Peters, MD
Dallas, TX

4:00 p.m. - 4:20 p.m. **Discussion**

4:20 p.m. - 4:40 p.m. **Complex Hypospadias**
Speaker: James M. Elmore, MD
Atlanta, GA

4:40 p.m. - 5:00 p.m. **Discussion**

1:45 p.m. - 5:00 p.m. **Kidney Cancer/Renal Mass Cancer Sub-Plenary Session**
Location: Waldorf Astoria Ballroom
Moderators: Peter E. Clark, MD
Charlotte, NC
Viraj A. Master, MD, PhD, FACS
Atlanta, GA

1:45 p.m. - 2:50 p.m. **Kidney Cancer Podium Session**
Moderators: Michael Ferrandino, MD
Durham, NC
Amy N. Luckenbaugh, MD
Nashville, TN

1:45 p.m. **#67** **THE PEAK EARLY-PHASE ENHANCEMENT RATIO (PEER): EFFECTIVE AT DIFFERNTIATING BETWEEN CHROMOPHOBE RENAL CELL CARCINOMA AND ONCOCYTIC LESIONS ON THREE PHASE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY**
Amanda Kahn, BS[1], Steven Lomax, MD[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic Department of Urology, [2]Mayo Clinic Division of Biomedical Statistics and Informatics
Presented By: Steven Lomax, MD

1:52 p.m. **#68** **ASSOCIATION BETWEEN NUCLEAR GRADE OF RENAL CELL CARCINOMA AND THE AORTA-LESION-ATTENTUATION DIFFERENCE**
Joseph Grajo, Nikhil Batra, Laura Magnelli, Padraic O'Malley, Ardalan Ahmad, Jonathan Pavlinec, Li-Ming Su, Paul Crispen
University of Florida
Presented By: Nikhil Batra, MD

1:59 p.m. **#69** **LOW TESTOSTERONE AND FRAILTY PREDICT OVERALL SURVIVAL IN SURGICAL PATIENTS**
Fangyi Lin, BS[1], Gordon Hong, BS[2], Farha Pirani, BA[3], Salima Makhani, MS[4], Frances Kim, MPH[1], Mark Henry, MD[1], Ian Cooke, MD[1], Reza Nabavizadeh, MD[1], Chad W. M. Ritenour, MD[1], Mehrdad Alemozaffar, MD[1], Viraj A. Master, MD, PhD, FACS[1], Kenneth Ogan, MD[1]
[1]Department of Urology, Emory University School of Medicine, Atlanta, GA, USA, [2]Northeast Ohio Medical University, Rootstown, OH, USA, [3]Medical College of Georgia, Augusta, GA, USA, [4]Mercer University School of Medicine, Macon, GA, USA
Presented By: Fangyi Rose Lin, BS

2:06 p.m. **#70** **COMPARISON OF RENAL TUMOR CONTACT SURFACE AREA AND R.E.N.A.L. NEPHROMETRY SCORE IN PREDICTING PERIOPERATIVE OUTCOMES OF ROBOT-ASSISTED PARTIAL NEPHRECTOMY**
Michael Rothberg, MD, Liliya Velet, MD, Taylor Peak, MD, Nicholas Deebel, MD, Ashok Hemal, MD
Wake Forest School of Medicine, Winston-Salem, NC
Presented By: Michael B. Rothberg, MD

2:13 p.m. **#71** **WHAT FACTORS PREDICT PRESERVED RENAL FUNCTION AFTER ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY?**

Ashley Shumate, MD[1], Kevin Parikh, MD[1], Ricky Bateh[1], Amanda Kahn[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic Department of Urology, [2]Mayo Clinic Department of Health Sciences Research
Presented By: Ashley Shumate, MD

2:20 p.m. **#72** **SURGICAL RESECTION FOR PANCREATIC METASTASIS OF RENAL CELL CARCINOMA: A SINGLE INSTITUTION 17-YEAR EXPERIENCE**

Steven Lomax, MD[1], Daniel Cardoso[2], Armando Rosales, MD[2], David Thiel, MD[1], John Stauffer, MD[2]
[1]Mayo Clinic Florida, Department of Urology, [2]Mayo Clinic Florida, Department of Surgery
Presented By: Steven Lomax, MD

2:27 p.m. **#73** **COMPLICATIONS AND OUTCOMES OF INFERIOR VENA CAVA LIGATION COMPARED TO THROMBECTOMY IN RENAL CELL CARCINOMA PATIENTS: A RETROSPECTIVE, CASE-CONTROLLED STUDY**

Lillian Xie, BA[1], Gordon Hong, BS[2], Dattatraya Patil, MBBS MPH[3], Reza Nabavizadeh, MD[3], Cecilia G. Ethun, MD[4], Kenneth Ogan, MD[3], Kenneth Cardona, MD[4], Shishir K. Maithel, MD[4], Viraj A. Master, MD[3]
[1]Emory University School of Medicine, Atlanta, GA, [2]Northeast Ohio Medical University School of Medicine, Rootstown, OH, [3]Emory University School of Medicine, Dept. of Urology, Atlanta, GA, [4]Emory University School of Medicine, Division of Surgical Oncology, Dept. of Surgery, Atlanta, GA
Presented By: Reza Nabavizadeh, MD

2:34 p.m. **#74** **THE COMBINATION OF SUNITINIB AND KETOCONAZOLE TARGETED AT THE TUMOR MICROENVIRONMENT IMPROVES THE EFFICACY OF ANTICANCER THERAPY**

Hogyoung Kim, PhD[1], Jacob W. Greenberg[1], Pedro C. Barata, MD, MSc[2], Asim B. Abdel-Mageed, DVM, PhD[1,3,2], Louis S. Krane, MD[1]
[1]Tulane University School of Medicine, Dept. of Urology, [2]Tulane University Cancer Center, [3]Tulane University School of Medicine, Dept. of Pharmacology, New Orleans, LA 70012
Presented By: Louis Spencer Krane, MD

2:41 p.m. **#75** **TRENDS IN UTILIZATION OF NEOADJUVANT CHEMOTHERAPY FOR LOCALLY ADVANCED UPPER TRACT UROTHELIAL CARCINOMA: A NATIONAL CANCER DATABASE ANALYSIS**

Samarpit Rai, Crystal Valadon, Jaimin Trivedi, Ahmed Haddad
Department of Urology, University of Louisville School of Medicine
Presented By: Samarpit Rai, MD

2:50 p.m. - 3:10 p.m. **State-of-the-Art Lecture: Cytoreductive Nephrectomy Update 2020**
Speaker: Kelvin A. Moses, MD, PhD, FACS
Nashville, TN

3:10 p.m. - 3:40 p.m. **Break/Visit Exhibits**
Location: Roosevelt Ballroom

3:40 p.m. - 5:00 p.m. **Panel Discussion: SRM/ RCC 2020**
Moderator: Paul L. Crispen, MD
Gainesville, FL

Observation
Panelist: Shreyas S. Joshi, MD, MPH
Atlanta, GA

Biopsy 2020
Panelist: Ornob Roy, MD, MBA
Charlotte, NC

Renal Tumor Ablation in 2020
Panelist: Stephen J. Savage, MD
Charleston, SC

Robotic Partial Nephrectomy
Panelist: Wesley M. White, MD
Knoxville, TN

Concurrent Session 4 of 5

3:50 p.m. - 5:00 p.m. **Socioeconomics Poster Session**
Location: Chambers I&III
Moderators: Jennifer Robles, MD
Nashville, TN
Thomas F. Stringer, MD, FACS
Gainesville, FL

Poster #65 **REAL-TIME TRACKING OF INPATIENT AND DISCHARGE OPIOID PRESCRIBING PATTERNS AMONG UROLOGY PROVIDERS**
Nadia Romero, MD, John Bell, MD, Andrew Harris, MD
University of Kentucky, Department of Urology
Presented By: Nadia Gabriela Romero, MD

Poster #66 **WITHDRAWN**

Poster #67 **IMPLEMENTING A PATHWAY FOR SAFE REDUCTION OF OPIOIDS IN PATIENTS UNDERGOING ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP): A RETROSPECTIVE ANALYSIS OF A US VETERANS AFFAIRS PATIENT COHORT**
Laura Horodyski, MD[1], Brittany Ball, PharmD[2], Isildinha Reis, PhD[1], Feng Miao, MS[1], Clarence Emile, BS[1], Mara Carasquillo, PharmD[2], Adriana Rhodes, MS[2], Lunan Ji, MD[1], Joshua Livingstone, MD[2,1], Christina Matadial, MD[2,1], Chad Ritch, MD, MBA[1,2], Leslie Deane, MBBS, MS, FRCSC, FACS[2,1]
[1]University of Miami, [2]Miami Veterans Affairs Medical Center
Presented By: Laura A. Horodyski, MD

Poster #68 **IDENTIFYING AREAS FOR IMPROVEMENT WITHIN UROLOGIC RESIDENCY PROGRAMS TO COMBAT OPIOID OVERUSE AND OVERPRESCRIBING**

Patrick Probst, Department of Urology, Kristen Marley, Department of Urology, Howard Hasen, Department of Urology, Christopher Ledbetter, Department of Urology, Robert Wake, Department of Urology, Anthony Patterson, Department of Urology
University of Tennessee Health Science Center - Memphis, TN
Presented By: Patrick Probst, MD

Poster #69 **NITROUS OXIDE OFFERS SUPERIOR PATIENT SATISFACTION DURING OFFICE-BASED UROLOGICAL PROCEDURES AND ELIMINATES THE NEED FOR OPIOID AND BENZODIAZEPINE USE**

Brent Sharpe, MD[1], Cash Sterling, MD[2]
[1]Georgia Urology, [2]NGMC Resident Physican
Presented By: Brent Alexander Sharpe, MD

Poster #70 **THE BALANCED SURGEON SCORECARD**

Matt Newsome, MD[1], Leslie Peard, MD[1], David Zekan, BS[2], Hensley Patrick, MD[1], Goodwin Jeffrey, MD[1], Amber Bettis[3], Adam Dugan[3], Jason Bylund, MD[1], Andrew Harris, MD[1]
[1]University of Kentucky, Department of Urology, [2]West Virginia University, School of Medicine, [3]University of Kentucky
Presented By: Matthew Newsome, MD

Poster #71 **PATIENT SAFETY EDUCATION AND PERCEPTIONS OF SAFETY CULTURE IN US UROLOGICAL RESIDENCY TRAINING PROGRAMS**

Vi Tran, MD[1], Andrew Harris, MD[1], Ankur Shah, MD, MBA[2], Christopher Tessier, MD[3], Justin Ziemba, MD[4]
[1]University of Kentucky, [2]Hospital of the University of Pennsylvania, [3]Oregon Health Science University, [4]Penn Medicine University of Pennsylvania
Presented By: Vi Thuy Tran, MD

Poster #72 **FINANCIAL LITERACY AND EDUCATION AMONG UROLOGY RESIDENTS IN SOUTHEASTERN SECTION**

Winston Crute, John Fisher, Matt Sorensen, Wesley White, John Lacy
University of Tennessee - Knoxville Department of Urology
Presented By: Winston M. Crute, MD

Poster #73 **OUTOCOME OF PROTECTED RESEARCH TIME IN UROLOGY RESIDENCIES ON ACADEMIC PUBLICATION PRODUCTION**

Alexander Fethiere[1], Troy Larson[2], Christopher Bayne[3], Romano DeMarco[2], Vincent Bird[2], M. Louis Moy[2]
[1]University of Florida College of Medicine, [2]University of Florida Department of Urology, [3]University of Florid College of Medicine
Presented By: Troy Larson, MD

Poster #74 **EXAMINING THE CORRELATION BETWEEN ALTMETRIC SCORE AND CITATIONS IN THE UROLOGY LITERATURE**

Alexander Nocera, MS[1], Carter Boyd, MS[1], Hunter Boudreau, MS[1], Ornin Hakim, MS[1], Soroush Rais-Bahrami, MD[2,3,4]
[1]University of Alabama at Birmingham School of Medicine, Birmingham, AL, [2]University of Alabama at Birmingham, Department of Urology, Birmingham, AL, [3]University of Alabama at Birmingham, Department of Radiology, Birmingham, AL, [4]University of Alabama at Birmingham, O'Neal Comprehensive Cancer Center, Birmingham, AL
Presented By: Alexander Nocera, MS

Poster #75 **FINANCIAL BURDEN OF RESIDENCY APPLICATION AND INTERVIEWS: THE STAKEHOLDER MODEL AS A THEORETIC FRAMEWORK**

Joshua Calvert[1], Carmen Tong[1], Apoorv Dhir[2], John Pope[1]
[1]Vanderbilt University Medical Center, Department of Urology, [2]University of Michigan Urology
Presented By: Joshua Kent Calvert, MD, MPH

Poster #76 **IMPACT OF UROLOGY TRAINEE DEBT LEVELS ON FUTURE PRACTICE CHOICES AND EXPECTATIONS**

Andrew Harris, MD[1], Leslie Peard, MD[1], Davuluri Meenakshi, MD[2], Raymond Fang[3], William Meeks[3], Amanda North, MD[2]
[1]University of Kentucky, [2]Montefiore Medical Center, [3]American Urologic Association
Presented By: Leslie M. Peard, MD

Poster #77 **GLOBAL SURVEY ON RISKS AND BENEFITS OF SOCIAL MEDIA FOR PRACTICING UROLOGISTS**

Justin Dubin[1], Aubrey Greer[1], Premal Patel[1], Diego Carrion[2], Nahuel Paesano[3], Reda Hocine[4], Malik Haffaf[4], Diego Santillan[5], Zsuzsannaq Zotter[6], Amanda Chung[7], Jeremy Teoh[8], Kyo Chul Koo[9], Ana Maria Autrán Gómez[10], Juan Gomez Rivas[2], Ranjith Ramasamy[1], Stacy Loeb[11]
[1]Department of Urology, University of Miami Miller School of Medicine, Miami FL, USA, [2]Department of Urology, La Paz University Hospital, Madrid, Spain. Autonomous University of Madrid, Madrid, Spain, [3]Department of Urology, Hospital Federico Abete, Buenos Aires, Argentina, [4]Department of Urology, Bachir Bennacer - Biskra Hospital, Biskra, Algeria, [5]Department of Urology, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina, [6]Department of Urology, Royal Brisbane and Women's Hospital, Herston, Australia, [7]Department of Urology, University of Sydney, Sydney, Australia, [8]S.H. Ho Urology Centre, The Chinese University of Hong Kong, Hong Kong, China, [9]Department of Urology, Yonsei University College of Medicine, Seoul, South Korea, [10]Department of Urology, Hospital Universitario Fundaciòn Jimenez Diaz, Madrid, Spain, [11]Department of Urology and Population Health, New York University and Manhattan VA, NY, NY, USA
Presented By: Justin Dubin, MD

Poster #78 **UROLOGY RESIDENCY APPLICANT PERSONAL STATEMENTS: AN INSIGHT INTO MALE AND FEMALE MEDICAL STUDENT PERCEPTIONS OF GENDER AND THEIR ROLE IN UROLOGY**

Alysen Demzik, MD, Pauline Filippou, MD, Emily Mercer, BS, Eric Wallen, MD, Hung-Jui Tan, Angela Smith, MD
University of North Carolina Urology, Chapel Hill, North Carolina, USA
Presented By: Alysen Leigh Demzik

Concurrent Session 5 of 5

3:50 p.m. - 5:00 p.m. **BPH and Voiding Dysfunction Poster Session**
Location: Chambers II&IV
Moderators: Steven P. Petrou, MD
Jacksonville, FL
Brian M. Whitley, MD
Durham, NC

Poster #79 **SINGLE SURGEON EXPERIENCE WITH PROCEPT AQUABEAM AQUABLATION OF PROSTATE: FIRST 40 CASES**

Ali Kasraeian, MD, FACS
Kasraeian Urology, Jacksonville, FL, USA
Presented By: Ali Kasraeian, MD, FACS

Poster #80 **WATER VS WATER II: AQUABLATION FOR BENIGN PROSTATIC HYPERPLASIA**

Ali Kasraeian, MD FACS[1], Naeem Bhojani, MD[2], David-Dan Nguyen[3]
[1]Kasraeian Urology, Jacksonville , Florida , USA, [2]Department of Urology, University of Montreal, Montreal, Quebec, Canada, [3]Department of Urology, McGill University , Montreal, Quebec, Canada
Presented By: Ali Kasraeian, MD, FACS

Poster #81 **ANNEXIN A1 INHIBITS NLRP3 MEDIATED INFLAMMATION DURING BLADDER OUTLET OBSTRUCTION**

Brent Nose, Shelby Harper, Francis M Hughes, Todd J Purves
Duke University Hospital
Presented By: Brent Denn Nose, MD

Poster #82 **BARRINGTONS'S REFLEXES REVISITED: PROXIMAL URETHRAL ELECTROSTIMULATION CAUSES REMARKABLE EXCITATORY BLADDER RESPONSE IN SPINAL CORD INTACT RATS**

Bradley Potts, M.D.[1], Matthew Fraser, Ph.D.[1,2]
[1]Duke Univesity Medical Center, Dept. of General Surgey, Division of Urology, [2]Durham VA Medical Center
Presented By: Bradley Potts, MD

Poster #83 **PROXIMAL URETHRAL ELECTRICAL STIMULATION PROFOUNDLY IMPROVES UNDERACTIVE BLADDER FUNCTION IN RATS AFTER UNILATERAL PELVIC NERVE TRANSECTION**

Bradley Potts, M.D.[1], Matthew Fraser, Ph.D.[1,2]
[1]Duke Univesity Medical Center, Dept. of General Surgey, Division of Urology, [2]Durham VA Medical Center
Presented By: Bradley Potts, MD

Poster #84 **INITIAL US EXPERIENCE WITH HOLEP USING THE OLYMPUS EMPOWER H100 WATT LASER**

Chandler Dora, MD
Mayo Clinic Florida Department of Urology
Presented By: Chandler David Dora, MD

Poster #85 **DOES PREOPERATIVE CATHETER DEPENDENCE AND PROSTATE SIZE PREDISPOSE TO CATHETER REINSERTION FOLLOWING HOLEP?**

Kevin Parikh, MD, Joseph Ivey, MD, Chandler Dora, MD
Mayo Clinic Florida Department of Urology
Presented By: Kevin Parikh, MD

Poster #86 **INTERMEDIATE TERM FOLLOW UP OF PROSTATIC URETHRAL LIFT FOR BENIGN PROSTATIC HYPERPLASIA: A META-ANALYSIS AND SYSTEMATIC REVIEW**

Karthik Tanneru, MD, Shiva Gautam, Phd, Daniel Norez, Jatinder Kumar, MD, Muhammad Umar Alam, MD, Balaji K.C, MD, Joseph Costa, DO
University of Florida, Jacksonville
Presented By: Karthik Of Tanneru

Poster #87 **THE PROSTATIC URETHRAL LIFT FOR SUBJECTS WITH PRIOR PROSTATE CANCER THERAPY**

Gregg Eure, MD[1], Steven Gange, MD[2], Manish Patel, MD[3], Douglas Grier, MD[4]
[1]Urology of Virginia, Virginia Beach, VA, [2]Summit Urology Group, Salt Lake City, UT, [3]Advanced Urology Women's Health Center, Elgin, SC, [4]Sound Urological Associates, Edmonds, WA
Presented By: Gregg R. Eure, MD

Poster #88 **EFFECTIVENESS OF THE PROSTATIC URETHRAL LIFT FOR A BROAD ARRAY OF SUBJECTS**

Gregg Eure, MD[1], Steven Gange, MD[2], Manish Patel, MD[3], Douglas Grier, MD[4]
[1]Urology of Virginia, Virginia Beach, VA, [2]Summit Urology Group, Salt Lake City, UT, [3]Advanced Urology Women's Health Center, Elgin, SC, [4]Sound Urological Associates, Edmonds, WA
Presented By: Gregg R. Eure, MD

Poster #89 **IMPLEMENTATION AND SHORT-TERM OUTCOMES OF PROSTATIC URETHRAL LIFT IN A VETERANS AFFAIRS POPULATION**
Heather Huelster, MD[1], Jacob Ark, MD[1], Kirk Keegan, MD[1], Kathryn Rogers, RN[2], Melissa Kaufman, MD[1], Kristen Scarpato, MD[1]
[1]Vanderbilt University Medical Center, [2]Tennessee Valley Healthcare System: Nashville Veterans Affairs Medical Center
Presented By: Heather L. Huelster, MD

Poster #90 **POSTOPERATIVE OUTCOMES AFTER ENDOSCOPIC UROLIFT REMOVAL**
Samantha Nealon, MD, Sarah Azari, MS4, Ross Simon, MD, Daniel Hoffman, MD
University of South Florida
Presented By: Samantha C. Nealon, MD

Poster #91 **COST ANALYSIS OF MINIMALLY INVASIVE BPH INTERVENTION: UROLIFT VERSUS REZUM**
Eric Wendel, MD[1], Bryan Savage[2], Michael Growcott, PhD[1], Eric Laborde, MD[1], Michael Maddox, MD[1]
[1]Ochsner Medical Center, [2]University of Queensland
Presented By: Eric Wendel, MD

Poster #92 **MODIFIED SIMPLE PROSTATECTOMY: AN APPROACH TO ADDRESS LARGE VOLUME BPH AND ASSOCIATED PROSTATE CANCERS**
Marcio Moschovas, Seetharam Bhat, Fikret Onol, Travis Rogers, Anamaria Parus, Vipul Patel
AdventHealth Global Robotics Institute
Presented By: Anamaria Parus

Concurrent Sessions End

5:00 p.m. - 5:10 p.m. **History of Urology in New Orleans**
Speaker: Harold A. Fuselier Jr., MD
New Orleans, LA

5:10 p.m. - 5:20 p.m. **History of Urology in Panama**
Speaker: Tristan Pinzon, MD
Colon, Panama

6:00 p.m. - 8:00 p.m. **Welcome Reception**
Location: Roosevelt Ballroom

FRIDAY, MARCH 20, 2020

OVERVIEW

6:30 a.m. - 2:00 p.m. **Registration/Information Desk Open**
Location: Roosevelt Pre-Function

6:30 a.m. - 2:00 p.m. **Speaker Ready Room Hours**
Location: Napoleon Room

7:00 a.m. - 11:00 a.m. **Exhibit Hall Open**
Location: Roosevelt Ballroom

7:30 a.m. - 10:30 a.m. **Spouse/Guest Hospitality Suite Open**
Location: Conti Room

7:00 p.m. - 10:00 p.m. **Residents' Night Out***
Location: Sazerac House
**This event is open to Residents, Residency Program Directors and Urology Chairpersons only.*

Concurrent Sessions Begin

Concurrent Session 1 of 4

7:00 a.m. - 8:00 a.m. **Bladder Cancer Poster Session**
Location: Chambers I&III
Moderators: Kelvin A. Moses, MD, PhD, FACS
Nashville, TN
Trushar Patel, MD
Tampa, FL

Poster #93 **ELECTROSTATIC COMPLEMENTARITY BETWEEN T-CELL RECEPTORS AND MACF1 MUTANTS REPRESENTS A SURVIVAL ADVANTAGE IN PATIENTS WITH MUSCLE INVASIVE BLADDER CANCER**
Kyle Michelson[1], Boris Chobrutskiy[2], Ross Simon[3], Jay Patel[3], Trushar Patel[3], George Blanck[2]
[1]SUNY Downstate Medical Center, Dept of Urology, [2]University of South Florida, Dept of Molecular Medicine, [3]University of South Florida, Dept of Urology
Presented By: Kyle Peter Michelson, BA

Poster #94 **INVESTIGATING THE SYNTHETIC LETHALITY OF EZH2 INHIBITION IN ARID1A MUTANT BLADDER CANCER**
James Ferguson[1], Hasib Rehman[1], Darshan Chandrashekar[2], George Netto[2], Soory Varambally[2]
[1]UAB Urology, [2]UAB Pathology
Presented By: James E. Ferguson, III, MD, PhD

Poster #95 **SHOULD UROTHELIAL CARCINOMA BE CONSIDERED PART OF BRCA1 AND BRCA2 CANCER SYNDROMES?**
Ankeet Shah, Dominic Grimberg, Hannah Berg, Wei Phin Tan, Brant Inman
Duke University Division of Urology
Presented By: Ankeet Shah, MD

Poster #96

INCREASED ACCUMULATION OF LOW MOLECULAR WEIGHT HYALURON IN BLADDER CANCER TISSUE

Elizabeth Kwenda, B.S[1,2], Paul Dominguez-Gutierrez, PhD[1], William Donelan, PhD[1], Padraic O'Malley, MD[1], Paul Crispen, MD[1], Sergei Kusmartsev, MD/PhD[1]
[1]University of Florida, Department of Urology, [2]University of Florida College of Medicine
Presented By: Elizabeth Kwenda, BS

Poster #97

EFFECT OF PRE-EXISTING CONDITIONS ON BLADDER CANCER DIAGNOSIS: A COHORT STUDY USING ELECTRONIC PRIMARY CARE RECORDS

Madeline Carney, BA[1], Sarah Price, PhD[2], Elizabeth Shephard, PhD[2], Luke Mounce, PhD[2], Myra Quiroga, BS, MS[1], Willie Hamilton, MD,PhD[2]
[1]USF Morsani College of Medicine, [2]University of Exeter Medical School
Presented By: Madeline Hope Carney, BA

Poster #98

COST-EFFECTIVENESS OF RADICAL CYSTECTOMY VS. TRIMODALITY FOR TREATMENT OF MUSCLE INVASIVE BLADDER CANCER

Nathan Suskovic, Medical Student[1], Ann Raldow, Radiation Oncology[2], Trevor Royce, Radiation Oncology[3], Angela Smith, Urology[4]
[1]University of North Carolina at Chapel Hill, School of Medicine, [2]University of California Los Angelos, Department of Radiation Oncology, [3]University of North Carolina at Chapel Hill, Department of Radiation Oncology, [4]University of North Carolina at Chapel Hill, Department of Urology
Presented By: Nathan Scott Suskovic, BA

Poster #99

PATIENT OUTCOMES FOLLOWING NEOADJUVANT CHEMOTHERAPY AND RADICAL CYSTECTOMY VERSUS RADICAL CYSTECTOMY ALONE IN PATIENTS WITH MUSCLE-INVASIVE UROTHELIAL CARCINOMA OF THE BLADDER

Patrick Houghton, MD, Katherine Cockerill, MD, Nikhita Yadlapalli, Paul Young, MD
Department of Urology, Mayo Clinic, FL
Presented By: Patrick Houghton

Poster #100

IMPACT OF SARCOPENIA IN THE ERA OF NEOADJUVANT CHEMOTHERAPY FOR MUSCLE-INVASIVE BLADDER CANCER

Goran Rac[1], Yu Zheng[1], Lara Hewett[2], Caitlin Shepherd[1], Harry Clarke[1], Thomas Keane[1], Theodore Gourdin[3], Robert Grubb[1]
[1]Medical University of South Carolina, Department of Urology, Charleston, SC, [2]Medical University of South Carolina, Department of Radiology, Charleston, SC, [3]Medical University of South Carolina, Department of Hematology/Oncology, Charleston, SC
Presented By: Goran Rac, MD

Poster #101 **RADICAL CYSTECTOMY AND ILEAL CONDUIT UNDER REGIONAL ANESTHESIA: SAFE, FEASIBLE, AND AN ACCELERATED POST-OPERATIVE COURSE IN THE AT RISK AND ELDERLY**

Michael Tonzi, Matthew Watson, Amanda Carter, Amar Singh

University of Tennessee Chattanooga College of Medicine

Presented By: Michael Sean Tonzi, MD

Poster #102 **INTRAVENOUS LIDOCAINE TO REDUCE OPIOID CONSUMPTION AND LENGTH OF STAY IN PATEINTS RECEIVING CYSTECTOMY: A RETROSPECTIVE STUDY**

Oliver Benton, MD[1], Paul Lesko, MD[1], Josh Earl, MD[1], James Bienvenu, MD[1], Jason Buehler, MD[1], Daniel Peters, MS3[1], John Pierce, MS3[1], Alexander Houck, MS3[2]

[1]UT Medical Center, [2]ETSU

Presented By: Oliver Benton, IV, MD

Poster #103 **COMPARISON OF SURGICAL AND FUNCTIONAL OUTCOMES OF INTRACORPOREAL AND EXTRACORPOREAL URINARY DIVERSION FOLLOWING ROBOT-ASSISTED RADICAL CYSTECTOMY**

Matt Ellis[1], Hamza Beano[1], Jiaxian He[2], Caitlin Hensel[2], William Worrilow[1], Kris Gaston[1], Peter Clark[1], Stephen Riggs[1]

[1]Department of Urology, Atrium Health, Charlotte, North Carolina, [2]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, North Carolina

Presented By: Matt Ellis

Poster #104 **A NOVEL SMALL MOLECULE FOR TREATMENT OF MUSCLE INVASIVE BLADDER CANCER**

Andrew Park, Kristy Nguyen, Jamie Messer, Ahmed Haddad, Murali Ankem

University of Louisville, Dept. of Urology, Louisville, KY

Presented By: Andrew Park

Concurrent Session 2 of 4

7:00 a.m. - 8:00 a.m. **Miscellaneous Urology Poster Session**

Location: Chambers II&IV

Moderators: John M. Lacy, MD
Knoxville, TN
Omer Raheem, MD
New Orleans, LA

Poster #105 **POTENTIAL USE OF AUTOLOGOUS RENAL CELLS FROM DISEASED KIDNEYS FOR THE TREATMENT OF RENAL FAILURE**

Sunil George[1], Mehran Abolbashari[2], John Jackson[1], Tamer Aboushwareb[1], Anthony Atala[1], James Yoo[1]

[1]Wake Forest School of Medicine, Winston Salem, NC, [2]sugeorge@wakehealth.edu

Presented By: John D. Jackson, PhD

Poster #106 **EFFECT OF HUMAN AMNIOTIC FLUID STEM CELLS ON KIDNEY FUNCTION IN A MODEL OF CHRONIC KIDNEY DISEASE**

Sunil George, Mehran Abolbashari, Tae-Hyoung Kim, Chao Zhang, Julie Allickson, John Jackson, Sang Jin Lee, In Kap Ko, James Yoo, Anthony Atala
Wake Forest School of Medicine, Winston Salem, NC
Presented By: John D. Jackson, PhD

Poster #107 **KIDNEY REGENERATION WITH BIOMIMETIC VASCULAR SCAFFOLDS BASED ON VASCULAR CORROSION CASTS**

Jennifer Huling, Sang-il Min, Doo Sang Kim, In Kap Ko, John Jackson, James Yoo, Anthony Atala
Wake Forest School of Medicine, Winston Salem, NC
Presented By: John D. Jackson, PhD

Poster #108 **CONSERVATIVE MANAGEMENT OF RENAL TRAUMA AT THE PUERTO RICO MEDICAL CENTER**

Vincent Rodríguez Bury, Resident Physician, Francois Soto Palou, Resident Physician, Kermith Ayala Muñiz, Resident Physician, Marcos Pérez Brayfield, Attending Physician, Timoteo Torres Santiago, Attending Physician, Antonio Puras Báez, Attending Physician
University of Puerto Rico School of Medicine
Presented By: Vincent Xavier Rodriguez Bury, MD

Poster #109 **PENETRATING SCROTAL TRAUMA AT A HIGH-VOLUME URBAN TRAUMA CENTER: DIAGNOSIS, MANAGEMENT, AND OUTCOMES**

Elizabeth Tourville, Patrick Probst, Christopher Ledbetter, Anthony Patterson, Robert Wake
University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN
Presented By: Elizabeth Tourville, MD

Poster #110 **GEOGRAPHIC DISPARITIES IN LITIGATION FOR URETERAL INJURY DURING PELVIC SURGERY**

Ajay Gopalakrishna, MD, MHS[1], Raevti Bole, MD[1], Ruby Kuang, BS[2], Brian Linder, MD[1], Boyd Viers, MD[1]
[1]Mayo Clinic Department of Urology, [2]University of California Los Angeles
Presented By: Ajay Gopalakrishna, MD, MHS

Poster #111 **IMPACT OF TRANSPLANT URETERAL STRICTURE LOCATION AND TYPE OF URETERAL REVISION ON LONG-TERM GRAFT SURVIVAL AND PATIENT OUTCOMES IN KIDNEY TRANSPLANTATION.**

Caitlin Shepherd, Christinia Holbrooks, Robert Cameron, Angello Lin, Satish Nadig, John McGillicuddy, Derek Dubay, David Taber, Prabhakar Baliga, Vinayak Rohan
Presented By: Caitlin W. Shepherd, MD

Poster #112 **MEDICAL MANAGEMENT OF PENILE AND URETHRAL LICHEN SCLEROSUS WITH TOPICAL CLOBETASOL IMPROVES LONG TERM VOIDING SYMPTOMS AND QUALITY OF LIFE**

William Boysen, MD, Andrew Peterson, MD
Duke University Medical Center
Presented By: William R. Boysen, MD

Poster #113 **PREVALENCE OF COITAL URINARY INCONTINENCE IN NULLIPAROUS WOMEN**

Siobhan Hartigan, MD[1], Sophia Goodridge, MD[2], Leah Chisholm[1], Jessica Heft, MD[3], Elizabeth Rourke, DO[1], Roger Dmochowski, MD[1], Melissa Kaufman, MD, PhD[1], W. Stuart Reynolds, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, Nashville, TN, [2]Urology, WellStar Medical Group, Roswell, GA, [3]Department of Obstetrics and Gynecology, University of Florida, Gainesville, FL
Presented By: Siobhan M. Hartigan, MD

Poster #114 **SIMULATION TRAINING FOR CORRECTION OF MALE STRESS URINARY INCONTINENCE: ASSESSMENT OF SURGICAL KNOWLEDGE AND CONFIDENCE FOLLOWING CADAVERIC LABORATORY TRAINING**

Jason Chandrapal[1], Leah Davis[2], Paul Perito[3], Gerard Henry[4], Leroy Jones[5], Rafael Carrion[6], Ricardo Munarriz[7], Aaron Lentz[1]
[1]Duke University School of Medicine, Division of Urology, [2]Duke Cancer Center, Center for Biostatistics, [3]Department of Urology, Coral Gables Hospital, [4]ArkLaTex Urology, [5]Urology San Antonio, [6]University of South Florida, Department of Urology, [7]Boston Medical Center, Department of Urology
Presented By: Jason Chandrapal, MD

Poster #115 **A 7-MINUTE CONTINUOUS BLADDER IRRIGATION INFORMATIONAL LECTURE SHOWS IMMEDIATE AND SUSTAINED IMPROVEMENT IN NURSING KNOWLEDGE**

Patrick Probst, Department of Urology, Kristen Marley, Department of Urology, Howard Hasen, Department of Urology, Christopher Ledbetter, Department of Urology, Anthony Patterson, Department of Urology, Robert Wake, Department of Urology
University of Tennessee Health Science Center - Memphis, TN
Presented By: Kristen Marley, MD

Poster #116 **EVALUATION OF PERIOPERATIVE OUTCOMES AND COMPLICATIONS OF PHEOCHROMOCYTOMA SURGERY: COMPARING ROBOTIC, LAPAROSCOPIC, AND OPEN APPROACHES TO ADRENALECTOMY**

Andrew Fang, MD[1], Jennifer Rosen, MD[1], Sejong Bae, MD[2,3], Fabio Tanno, MD[4], Jose Chambo, MD[4], Jonathan Bloom, MD[5], Jennifer Gordetsky, MD[1,6,7], Victor Srougi, MD[4], John Phillips, MD[5], Soroush Rais-Bahrami, MD[1,3,8]
[1]Department of Urology, University of Alabama at Birmingham, Birmingham, AL, USA, [2]Division of Preventative Medicine, Department of Medicine, University of Alabama at Birmingham, Birmingham, AL, USA, [3]O'Neal Comprehensive Cancer Center at UAB, University of Alabama at Birmingham, Birmingham, AL, USA, [4]Department of Urology, Hospital das Clínicas de São Paulo, University of São Paulo Medical School, São Paulo, Brazil, [5]Department of Urology, New York Medical College, Valhalla, NY, USA, [6]Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA, [7]7. Current Affiliation: Department of Pathology, Vanderbilt University, Nashville, TN, USA, [8]Department of Radiology, University of Alabama at Birmingham, Birmingham, AL, USA
Presented By: Andrew Fang, MD

Concurrent Session 3 of 4

7:00 a.m. - 8:00 a.m. **Video Session II**
Location: Waldorf Astoria Ballroom
Moderators: Scott E. Delacroix Jr., MD
New Orleans, LA
Mathew C. Raynor, MD
Chapel Hill, NC

Video #7 **VENTRAL ONLAY ORAL MUCOSA ROBOTIC-ASSISTED REDO PYELOPLASTY**

Benjamin Dropkin, MD, Nicholas Kavoussi, MD, Elizabeth Rourke, DO, MPH, Melissa Kaufman, MD, PhD, Ryan Hsi, MD
Vanderbilt University Medical Center, Department of Urology, Nashville, TN
Presented By: Benjamin M. Dropkin, MD

Video #8 **ROBOTIC RETROPERITONEAL LYMPH NODE DISSECTION IN AN ADOLESCENT PATIENT**

Ashley W. Johnston, MD, Rohit Tejwani, MD, Riyang Jiang, MD, Jonathan C. Routh, MD, MPH
Duke University
Presented By: Ashley W. Johnston, MD

Video #9 **RENAL OBSTRUCTION RESULTING FROM LEFT RETROCAVAL URETER**

Spencer Larkin[1], Shrujal Parikh[2], John Roger Bell[1]
[1]University of Kentucky, Dept of Urology, Lexington, KY, [2]University of Kentucky, College of Medicine, Lexington, KY
Presented By: Spencer Larkin

Video #10 **SIMULTANEOUS IMPLANTATION OF AN INFLATABLE PENILE PROSTHESIS AND AN ARTIFICIAL URINARY SPHINCTER**
Peter Tsambarlis[1], Christopher Koller[2], Gabriel Leinwand[2], Wayne Hellstrom[2]
[1]Rush University Department of Urology, [2]Tulane University Department of Urology
Presented By: Christopher Koller

Video #11 **ROBOTIC BLADDER DIVERTICULECTOMY: MANAGEMENT OF A CONGENITAL BLADDER DIVERTICULUM IN AN INFANT**
Amanda Raines, MD[1], Christopher Roth, MD[2]
[1]Tulane University, [2]Children's Hospital of New Orleans
Presented By: Amanda Raines, MD

Video #12 **SURGICAL CORRECTION OF OBSTRUCTED DEFECATION SYNDROME**
Tao Cui, Catherine Matthews
Wake Forest School of Medicine
Presented By: Tao Cui, MD

Concurrent Session 4 of 4

7:00 a.m. - 8:00 a.m. **Health Services Research Podium Session**
Location: Crescent City Ballroom
Moderators: Jason R. Bylund, MD, MPH
Lexington, KY
Christopher P. Filson, MD, MS
Atlanta, GA

7:00 a.m. **#76** **PREDICTING MEDICARE SURGICAL EPISODE SPENDING IN THE BUNDLED PAYMENTS FOR CARE IMPROVEMENT-ADVANCED ERA**
Daniel D. Joyce, MD[1], Pikki Lai, PhD[2], Alan Zhang[3], Diane N. Haddad, MD[4], Brittany L. Cunningham, MSN[5], Cary J. Stimson, MD, JD[1]
[1]Vanderbilt University Medical Center, Dept. of Urology, Nashville, TN, [2]Vanderbilt University Medical Center, Dept. of Health Policy, Nashville, TN, [3]Vanderbilt University Medical Center, Dept. of Biomedical Informatics, Nashville, TN, [4]Vanderbilt University Medical Center, Dept. of Surgical Sciences, Nashville, TN, [5]Vanderbilt University Medical Center, Office of Episodes of Care, Nashville, TN
Presented By: Daniel D. Joyce, MD

7:07 a.m. **#77** **POTENTIAL BENEFITS OF A DEDICATED DIFFICULT URINARY CATHETER (DUC) TEAM: THE 4-YEAR EXPERIENCE AT A SINGLE INSTITUTION**
Sam Fisher, Kevin Reed, Eric Riedinger, Nilay Patel, Ryan Pickens, John Lacy, Wesley White
University of Tennesee Medical Center, Knoxville, TN
Presented By: John Sam Fisher, MD

7:14 a.m. **#78** **CONTEMPORARY RACIAL DISPARITIES IN PSA SCREENING AND PROSTATE CANCER DIAGNOSIS IN A LARGE, INTEGRATED HEALTHCARE SYSTEM**
Caroline D Lu[1], Oluwaseun Adeyemi[2], William E Anderson[2], Timothy C Hetherington[2], Yhenneko J Taylor[2], James T Kearns[1,3]
[1]Atrium Health, Carolinas Medical Center, Department of Urology, Charlotte, NC, [2]Atrium Health, Center for Outcomes Research and Evaluation (CORE), Charlotte, NC, [3]Levine Cancer Institute, Charlotte, NC
Presented By: Caroline D. Lu, MD

7:21 a.m. **#79** **IMPACT OF MEDICARE REIMBURSEMENT CHANGES UPON RATES OF CONCOMITANT SURGICAL CORRECTION OF SEXUAL DYSFUNCTION AND MALE STRESS URINARY INCONTINENCE**
Ehtan Matz, Resident[1], Jyoti Chouhan[2], Ryan Terlecki, Associate Professor[1]
[1]Wake Forest Baptist Medical Center, [2]Oregon Health and Sciences University
Presented By: Ethan L. Matz, MD

7:28 a.m. **#80** **INVESTIGATION OF UROLOGY INTRAOPERATIVE EVENTS LEADING TO ROOT CAUSE ANALYSIS AT NATIONAL VA MEDICAL CENTERS**
Leslie Peard, MD[1], William Gunnar, MD[2], Peter Mills, PhD[2], Andrew Harris, MD[1]
[1]University of Kentucky, [2]US Department of Veterans Affairs
Presented By: Leslie M. Peard, MD

7:35 a.m. **#81** **THE IMPACT OF HOSPITAL VOLUME ON SHORT-TERM AND LONG-TERM OUTCOMES FOR PATIENTS UNDERGOING RADICAL NEPHROURETERECTOMY WITH UPPER TRACT UROTHELIAL CARCINOMA**
Wilson Sui, MD, Daniel A. Barocas, MD, Sam S. Chang, MD, MBA, David F. Penson, MD, MPH, Matthew J. Resnick, MD, MMHC, Aaron A. Laviana, MD
Department of Urology, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

7:42 a.m. **#82** **OVERLAPPING UROLOGICAL SURGERIES AT A TERTIARY ACADEMIC CENTER**
Reza Nabavizadeh, Dattatraya Patil, KC Biebighauser Bens, Elizabeth Traorè, Viraj Master, Kenneth Ogan
Emory University
Presented By: Reza Nabavizadeh, MD

7:49 a.m. **#83** **PATIENT PERCEPTIONS OF UROLOGIST'S INTERACTIONS WITH PHARMACEUTICAL COMPANIES**
Andrew Rabley, MD[1], Jack Curtis, BS[2], Suha Zaidi[3], Samantha Larson, MPH[4], Lawrence Yeung, MD[1], Vincent Bird, MD[1], M. Louis Moy, MD[1]
[1]Department of Urology, University of Florida, [2]College of Medicine, University of Florida, [3]University of Florida, [4]College of Public Health and Health Professions
Presented By: Andrew Rabley, MD

Concurrent Sessions End

8:00 a.m. - 9:30 a.m. **Gee-Dineen Health Policy Forum I**
Moderators: Christopher P. Filson, MD, MS
Atlanta, GA
Angela B. Smith, MD, MS, FACS
Chapel Hill, NC

8:00 a.m. - 8:30 a.m. **Ambrose Reed Lecture: May I Have This Dance? The Importance of Diversity and Inclusion in Urology**
Invited Speaker: Angela B. Smith, MD, MS, FACS
Chapel Hill, NC

8:30 a.m. - 9:00 a.m. **Financial Toxicity in Urologic Oncology**
Speaker: Christopher P. Filson, MD, MS
Atlanta, GA

9:00 a.m. - 9:30 a.m. **Quality Metrics for the Urologist**
Speaker: Timothy D. Averch, MD
Columbia, SC

Breakout Session Begins

Concurrent to the General Session

8:00 a.m. - 9:45 a.m. **Pediatric Sub-Plenary Session II**
Location: Waldorf Astoria Ballroom

8:00 a.m. - 8:45 a.m. **State-of-the-Art Lecture: Modern Surgical Indications for Vesicoureteral Reflux**
Guest Speaker: Craig A. Peters, MD
Dallas, TX

8:45 a.m. - 9:15 a.m. **Ask the Experts: Vesicoureteral Reflux**
Moderator: Craig A. Peters, MD
Dallas, TX
Panelists: Sherry S. Ross, MD
Chapel Hill, NC
Ali Ziada, MD
Lexington, KY

9:15 a.m. - 9:45 a.m. **Pediatric Poster Session**
Location: Chambers I&III
Moderators: Christopher C. Roth, MD
New Orleans, LA
Abby S. Taylor, MD
Nashville, TN

Poster #117 **A SURVEY EVALUATING THE FEASIBILITY AND SATISFACTION OF TELEMEDICINE IN PEDIATRIC UROLOGY**
Brendon Gros[1], Nikka Khorsandi[1], Yu-Wen Chiu, DrPH[2], Aaron Martin, MD MPH[1,2,3]
[1]LSU Health New Orleans School of Medicine, [2]LSU Health New Orleans School of Public Health, [3]Children's Hospital New Orleans
Presented By: Brendon J. Gros

Poster #118 **ASSOCIATIONS WITH ADVERSE OUTCOMES FROM PYELOPLASTY**

Thomas FitzGibbon, MD, MS[1], Samarpit Rai, MB BCh BAO[1], Huirong Hu, MS[2], Sudaraka Tholkage, MS[2], Eran Rosenberg, MD[3], Ahmad Mohamed, MD[1], Dennis Peppas, MD[3], Maiying Kong, PhD[2], Jeffrey White, MD, PhD[3]
[1]University of Louisville, Department of Urology, Louisville, KY, [2]University of Louisville, School of Public Health and Information Services, Department of Bioinformatics and Biostatistics, Louisville, KY, [3]Norton Children's Hospital, Norton Children's Urology, Louisville, KY
Presented By: Thomas Michael FitzGibbon, Jr., MD

Poster #119 **MITROFANOFF VS SUPRAPUBIC BUTTON CYSTOTOMY IN PEDIATRIC UROLOGY: A COST AND COMPLICATION ANALYSIS**

Colin Linke, DO[1], Carlos Sanchez, MD[1], Aaron Martin, MD MPH[1,2]
[1]LSU Health New Orleans, Dept of Urology, [2]Children's Hospital New Orleans
Presented By: Colin S. Linke, DO

Poster #120 **ASSOCIATION BETWEEN ETHNICITY AND SKIN COMPLICATIONS FOLLOWING HYPOSPADIAS REPAIR**

Hasan Jhaveri, University of Florida, Jeremy Bergamo, University of Florida, Christopher Bayne, University of Florida, Romano DeMarco, University of Florida
Department of Urology
Presented By: Hasan Jhaveri

Poster #121 **HOW RACE, DEMOGRAPHICS, AND SOCIOECONOMIC STATUS IMPACT TIME TO PRESENTION FOR TREATMENT OF GENITAL PAIN IN PEDIATRIC MALES**

Katherine Fratino[1], David Nelwan[1], Deepak Ayyala[1], Rabii Madi[1], Sherita King[1], Durwood Neal[1], Zachary Klaassen[1], Martha Terris[2], Bradley Morganstern[1]
[1]Medical College of Georgia, Augusta University, Augusta, GA, [2]Medical College of Georgia, Augusta. University, Augusta, GA
Presented By: Katherine Fratino, MD

Poster #122 **IMPACT OF HOSPITAL TRANSFER ON TESTICULAR TORSION OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS.**

Elizabeth Kwenda, B.S[1,2], Rachel Locke, B.S[2], Romano DeMarco, MD[1], Christopher Bayne, MD[1]
[1]University of Florida, Department of Urology, [2]University of Florida College of Medicine
Presented By: Elizabeth Kwenda, BS

Breakout Session Ends

9:30 a.m. - 9:45 a.m. **ABU Update**
Speaker: J. Brantley Thrasher, MD, FACS
Charlottesville, VA

9:45 a.m. - 10:15 a.m. **Break/Visit Exhibits**
Location: Roosevelt Ballroom

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. Ritenour, MD
Atlanta, GA
Kristen R. Scarpato, MD, MPH, FACS
Nashville, TN

11:30 a.m. - 11:45 a.m. **AUA Guidelines Update 2020**
Speaker: Peter E. Clark, MD
Charlotte, NC

11:45 a.m. - 12:45 p.m. **Industry Sponsored Lunch Symposium**
Location: Orpheum Room

11:45 a.m. - 12:45 p.m. **Industry Sponsored Lunch Symposium**
Location: Waldorf Astoria Ballroom

12:45 p.m. - 1:00 p.m. **AUA Update**
AUA President- Elect: Scott K. Swanson, MD
Phoenix, AZ

1:00 p.m. - 2:00 p.m. **T. Leon Howard Imaging Session**
Moderator: Wesley M. White, MD
Knoxville, TN

Case #1 **A MIDDLE-AGED FEMALE PRESENTS WITH FLANK PAIN**
Katherine Cockerill, Resident
Mayo Clinic Jacksonville
Presented By: Katherine Cockerill, MD

Case #2 **NINE YEAR OLD BOY WITH TESTICULAR ENLARGEMENT**
Julio Slongo[1], Diana Cardona-Grau[2], Hubert S. Swana[2], Mark A. Rich[3]
[1]University of South Florida, [2]Arnold Palmer Hospital for Children, [3]Arnold Palmer Hospital for Childre
Presented By: Julio Slongo, MD

Case #3 **RENAL VEIN THROMBOSIS EXTENDING TO THE HEART WITHOUT RENAL MASS**
Taylor Peak, Majid Mirzazadeh
Presented By: Taylor Carter Peak, MD

Case #4

TWO YEAR-OLD WITH FEBRILE UTI, ABNORMAL CONGENITAL FINDINGS ON CT

Ching Man Carmen Tong, D.O.[1], Belinda Li, M.D.[1], Joshua Calvert, M.D.[2], Rohan Bhalla, M.D.[2], Wallace Neblett, M.D.[3], John Thomas, M.D.[1]
[1]Division of Pediatric Urology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN, [2]Department of Urology, Vanderbilt University Medical Center, , Nashville, TN, [3]Department of General Surgery, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN
Presented By: Belinda Li

Case #5

FEMALE WITH RIGHT HYDRONEPHROSIS AND URETERAL FILLING DEFECT

Timothy Quinn, Resident Physician[1], Cara Cimmino, Assistant Professor[2]
[1]Emory University, Department of Urology, Atlanta, GA, [2]Emory University, Department of Urology, Atlanta, GA
Presented By: Timothy Powers Quinn, MD

Case #6

61-YEAR-OLD GENTLEMAN PRESENTING WITH SHORTNESS OF BREATH, COUGH, AND ABDOMINAL FULLNESS

Yu Zheng, zhengyu@musc.edu, Yu Zheng, rovnere@musc.edu
MUSC Dept of Urology
Presented By: Yu Zheng, MD

7:00 p.m. - 10:00 p.m.

Residents' Night Out*
Location: Sazerac House
**This event is open to Residents, Residency Program Directors and Urology Chairpersons only.*

SATURDAY, MARCH 21, 2020

OVERVIEW

6:30 a.m. - 5:00 p.m. **Registration/Information Desk Open**
Location: Crescent City Pre-Function

6:30 a.m. - 5:00 p.m. **Speaker Ready Room Hours**
Location: Napoleon Room

7:30 a.m. - 10:30 a.m. **Spouse/Guest Hospitality Suite Open**
Location: Conti Room

6:00 p.m. - 7:30 p.m. **Closing Reception**
Location: Roosevelt Promenade

Concurrent Sessions Begin

Concurrent Session 1 of 4

7:00 a.m. - 8:00 a.m. **Robotic and Reconstructive Surgery Poster Session**
Location: Chambers I&III
Moderators: Kenneth Ogan, MD
Atlanta, GA
Stephen B. Riggs, MD, FACS
Charlotte, NC

Poster #123 **COMPARISON OF ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY: SP VERSUS XI, A SINGLE SURGEON EXPERIENCE**
Matthew Watson[1], Robert J. Burns[2], Meredith Bernhard[3], Amar Singh[1]
[1]UT-Erlanger Department of Urology, [2]LSU-Health Science Center, [3]UT Health Science Center
Presented By: Matthew J. Watson, DO

Poster #124 **COMPARISON OF PERIOPERATIVE OUTCOMES BETWEEN SINGLE-PORT AND MULTI-PORT ROBOTIC ASSISTED RADICAL PROSTATECTOMY: A SINGLE INSTITUTIONAL EXPERIENCE**
Andrew Fang, MD[1], Ava Saidian, MD[1], Ornin Hakim[2,3], Cristina Magi-Galluzi, MD[4], Jeffrey Nix, MD[1,3], Soroush Rais-Bahrami, MD[1,3,5]
[1]Department of Urology, University of Alabama at Birmingham, Birmingham, AL, USA, [2]University of Alabama at Birmingham, Birmingham, AL, USA, [3]O'Neal Comprehensive Cancer Center at UAB, University of Alabama at Birmingham, Birmingham, AL, USA, [4]Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA, [5]Department of Radiology, University of Alabama at Birmingham, Birmingham, AL, USA
Presented By: Ava Saidian, MD

Poster #125 **OPIATE-FREE POST-OPERATIVE PATHWAY AFTER ROBOTIC RADICAL PROSTATECTOMY: FEASIBILITY IN A VETERANS AFFAIRS MEDICAL CENTER (VAMC)**
Rahul Dutta, Ashok Hemal, Gopal Badlani, Ram Pathak
Wake Forest School of Medicine
Presented By: Rahul Dutta, MD

Poster #126 **URETHRO-VESICAL ANASTOMOTIC DISRUPTION: STRATEGIES FOR MANAGING DELAYED HEALING OF URETHRO-VESICAL ANASTOMOSIS FOLLOWING RADICAL ROBOTIC PROSTATECTOMY**
Laith Alzweri, Eric Shaw, Raju Thomas
Department of Urology, Tulane University, New Orleans, Louisiana
Presented By: Laith Alzweri, MD, MRCS, FESCM

Poster #127 **ANALYZING THE ASSOCIATION BETWEEN RENAL TUMOR COMPLEXITY AND FUNCTIONAL VOLUME LOSS (FVL) IN ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)**
Essa Bajalia[1], Kevin Parikh[1], Daniela Haehn[1], Amanda Kahn[1], Colleen Ball[2], David Thiel[1]
[1]Department of Urology, Mayo Clinic, Jacksonville, FL, USA, [2]Division of Biomedical Statistics and Informatics, Mayo Clinic
Presented By: Essa Michael Bajalia

Poster #128 **RELATIONSHIP OF FUNCTIONAL VOLUME LOSS (FVL) TO POST-OPERATIVE RENAL FUNCTION FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)**
Essa Bajalia[1], Kevin Parikh[1], Daniela Haehn[1], Amanda Kahn[1], Colleen Ball[2], David Thiel[1]
[1]Department of Urology, Mayo Clinic, Jacksonville, FL, USA, [2]Division of Biomedical Statistics and Informatics, Mayo Clinic
Presented By: Essa Michael Bajalia

Poster #129 **EVALUATION OF ANGIOTENSIN CONVERTING ENZYMES INHIBITORS (ACEIs), ANGIOTENSIN RECEPTOR BLOCKERS (ARBs), AND STATINS ON POSTOPERATIVE ESTIMATE GLOMERULAR FILTRATION RATES (eGFR) FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)**
Daniela Haehn, MD[1], Ashley Shumate, MD[1], Essa Bajalia[2], Colleen Ball, BS[3], David Thiel[2]
[1]Department of Urology, Mayo Clinic FL, [2]Department of Urology, Mayo Clinic FL, [3]Division of Biomedical Statistics and Informatics, Mayo Clinic, FL
Presented By: Daniela Andrea Haehn, MD

Poster #130 **ASSOCIATION OF RADIOMICS AND PATIENT CHARACTERISTICS WITH FORMATION OF PSEUDOANEURYSM FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY**
Ashley Shumate, MD[1], Kevin Parikh, MD[1], Ricky Bateh[1], Amanda Kahn[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic Department of Urology, [2]Mayo Clinic Department of Health Sciences Research
Presented By: Ashley Shumate, MD

Poster #131 **USE OF INTRAOPERATIVE INDOCYANINE GREEN PERFUSION TESTING IN RADIATION-RELATED URINARY DIVERSION**
Kevin Heinsimer, MD, Samantha Nealon, MD, Lucas Wiegand, MD
University of South Florida
Presented By: Samantha C. Nealon, MD

Poster #132 **EFFICACY AND SAFETY OF ALVIMOPAN USE IN BENIGN URINARY TRACT RECONSTRUCTION**
Patrick Hensley[1], Margaret Higgins[1], Alison Rasper[1], Ali Ziada[1], Shubham Gupta[2]
[1]Department of Urology, University of Kentucky College of Medicine, [2]Department of Urology, University of Kentucky College of Medicine, Case Western Reserve University
Presented By: Patrick Hensley, MD

Poster #133 **ROBOTIC REVISION OF URETERO-ILEAL ANASTOMOTIC STRICTURE FOLLOWING ROBOTIC RADICAL CYSTECTOMY**
Rabii Madi, MD, MBA
Augusta University Health
Presented By: Rabii Madi, MD, MBA, FACS

Poster #134 **THE ROLE AND OUTCOMES OF ILEAL URETER INTERPOSITION IN CONTEMPORARY PRACTICE**
Margaret Higgins, MD[1], Patrick Hensley, MD[1], Shubham Gupta, MD[2]
[1]University of Kentucky, Dept. Urology, Lexington KY, [2]Case Western Reserve University, Dept. Urology, Cleveland OH
Presented By: Margaret M. Higgins, MD

Concurrent Session 2 of 4

7:00 a.m. - 8:00 a.m. **Sexual Health Poster Session**
Location: Chambers II&IV
Moderators: Gerard D. Henry, MD
Shreveport, LA
Sherita A. King, MD
Augusta, GA

Poster #135 **IMPACT OF PLACENTAL STEM CELLS DOSE ON ERECTILE FUNCTION RECOVERY IN A NEUROVASCULAR INJURY RAT MODEL**
Parth Thakker[1], Xin Gu[2], Ryan Terlecki[3], Yuanyuan Zhang[2], Anthony Atala[1], John Jackson[2]
[1]Wake Forest Baptist Medical Center, [2]Wake Forest Institute of Regenerative Medicine, [3]Wake Forest Baptist Medical Center
Presented By: Parth Thakker, MD

Poster #136 **BEYOND THE PILL: PRELIMINARY DATA LOOKING AT A COMBINATION OF PHOSPHODIESTERASE INHIBITORS WITH LOW DOSE BIMIX INTRA-URETHRAL GEL FOR THE MANAGEMENT OF ERECTILE DYSFUNCTION**

Daniel Martinez, MD[1], Yekutiel Sandman, MD[2], Robert Puig, MD[2], Cosme Gomez, MD[2], Chris Gomez, MD[3], Jorge Caso, MD[3], Murugesan Manoharan, MD[3]
[1]Urology Specialty Care/Miami Cancer Institute, [2]Urology Specialty Care, [3]Miami Cancer Institute
Presented By: Daniel R. Martinez, MD

Poster #137 **EVALUATING THE IMPORTANCE OF TIMELY SURGICAL INTERVENTION IN LONG-TERM ERECTILE AND URINARY FUNCTION AFTER TRAUMATIC PENILE FRACTURE**

Caleb Natale, Niklos Moring, Laith Alzweri, Amit Reddy, Jacob Greenberg, Ayad Yousif, Cooper Benson, Omer Raheem, Wayne Hellstrom
Tulane University School of Medicine
Presented By: Caleb Natale

Poster #138 **IMAGING IN TRAUMATIC PENILE INJURY: EVALUATING SONOGRAPHY AS AN OPTION AT THE UNIVERSITY OF PUERTO RICO**

Ramphis Morales-López, MD, Ariana López-García, MD, Beatriz Junqueira-Ibañez, MS, Kermith Ayala-Muñiz, MD, Antonio Puras-Baez, MD
Urology Section, University of Puerto Rico
Presented By: Ramphis A. Morales-Lopez, MD

Poster #139 **DOES DOPPLER CLASSIFICATION OF PEYRONIE'S DISEASE AFFECT SURGICAL INTERVENTION PURSUED BY PATIENT?**

Katherine Cockerill, Jordan Bullock, James Schnell, Andrew Hendrix, Gregory Broderick
Mayo Clinic Jacksonville
Presented By: Katherine Cockerill, MD

Poster #140 **UROLOGIC SURVEY OF PORNOGRAPHY ADVERTISEMENTS FOR ONLINE CONSUMERS**

Jennifer Kuo, MD, Troy Larson, MD, Jeremy Bergamo, MD, M. Louis Moy, MD
Presented By: Jennifer Kuo, MD

Poster #141 **SURVEYING THE EPIDEMIOLOGY, SYMPTOMATOLOGY AND TREATMENT OF A RARE ORGASM DISORDER: POST-ORGASMIC ILLNESS SYNDROME**

Caleb Natale, Andrew Gabrielson, Hoang Minh Tue Nguyen, Wayne Hellstrom
Tulane University School of Medicine, Dept of Urology, New Orleans, LA
Presented By: Caleb Natale

Poster #142 **ASSESSMENT OF TESTICULAR HEAVY METAL TOXICITY USING 2D CELL CULTURE AND 3D HUMAN TESTICULAR ORGANOIDS**
Adam Cohen, MD[1,2], Nima Pourhabibi Zarandi, MD[1], Anthony Atala, MD[1,2], Hooman Sadri-Ardekani, MD, PhD[1,2]
[1]Wake Forest Institute of Regenerative Medicine, [2]Department of Urology, Wake Forest School of Medicine, Winston-Salem, NC
Presented By: Adam Bret Cohen, MD, BS

Poster #143 **A SURVEY OF USAGE OF PENILE PROSTHESIS**
Paul Knoll, Resident, Shriharsha Talluri, Resident, Samarpit Rai, Resident, Ross Micciche, Resident, Andrew Park, Resident, Thomas Fitzgibbon, Resident, Ganesh Rao, Attending, Murali Ankem, Department Chair
Department of Urology University of Louisville School of Medicine
Presented By: Paul Brian Knoll, MD

Poster #144

GRANULAR ASSESSMENT OF DEVICE LENGTH CHANGES UPON REVISION
Evan Carlos, MD, Dominic Grimberg, MD, Brent Nosè, MD, Leah Davis, MS, Aaron Lentz, MD
Duke University Medical Center
Presented By: Evan C. Carlos, MD

Poster #145 **NOVEL TECHNIQUE FOR EXTRA-CORPORAL PLACEMENT OF PENILE PROSTHESIS IN CIS AND TRANSGENDER MALE: THE MODIFIED USE OF ADVANCE MALE SLING FOR PROXIMAL ANCHORING**
Laith Alzweri[1], Christopher Koller[1], Ayad Yousif[1], Scott Peterson[2], Wayne J. G. Hellstrom[1]
[1]Tulane University School of Medicine, Dept of Urology, New Orleans, LA, [2]Boston Scientific
Presented By: Laith Alzweri, MD, MRCS, FESCM

Poster #146 **SYSTEMATIC TRACKING OF OPIOID RECEIPT AFTER PLACEMENT OF PENILE IMPLANTS**
Ethan Matz, Resident[1], Jyoti Chouhan[2], Parth Thakker, Resident[1], Kara McAbee, Resident[1], Ryan Terlecki, Associate Professor[1]
[1]Wake Forest Baptist Medical Center, [2]Oregon Health and Sciences University
Presented By: Ethan L. Matz, MD

Concurrent Session 3 of 4

7:00 a.m. - 8:00 a.m. **Urologic Oncology Poster Session**
Location: Orpheum Room
Moderators: Paul L. Crispen, MD
Gainesville, FL
Jamie Messer, MD
Louisville, KY

Poster #147

IMPACT OF HISTOLOGIC SUBTYPE ON OVERALL SURVIVAL OF OBSERVED T(ONE)A KIDNEY CANCERS IMPLICATIONS FOR BIOPSY AS A RISK STRATIFICATION TOOL

Jamie Michael[1], Nermarie Velazquez, MD[2], Audrey Renson, PhD[3], Hung-Jui Tan, MD[4], Tracy L. Rose, MD, MPh[5], Matt Raynor, MD[4], Stella K. Kang, MD[6], William C. Huang, MD[2], Marc A. Bjurlin, DO, MSc, FACOS[4]
[1]UNC School of Medicine, Chapel Hill, NC, USA, [2]Dept of Urology, NYU Langone Health, New York City, NY, USA, [3]Dept of Population Health, NYU Langone Health, New York City, NY, USA, [4]Dept of Urology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [5]Dept of Hematology/Oncology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [6]Dept of Radiology, NYU Langone Health, New York City, NY, USA
Presented By: Jamie Michael

Poster #148

VARIATION IN ESTIMATED GFR VALUES PRIOR TO NEPHRECTOMY BASED ON CYSTATIN C, CKD-EPI, COCKCROFT-GAULT, AND MDRD FORMULAS

Gordon Hong, Mark Henry, Fangyi Lin, Ian Cooke, Farha Pirani, Dattatraya Patil, Kenneth Ogan, Michael Connor, Mehmet Bilen, Donald Harvey, Viraj Master
Presented By: Ian Cooke

Poster #149

SINGLE-INSTITUTION RETROSPECTIVE ANALYSIS OF PATIENTS UNDERGOING RADICAL NEPHROURETERECTOMY FOR ADVANCED UPPER TRACT UROTHELIAL CARCINOMA (UTUC)

Robert Wilson[1], Rahul Dutta, MD[1], Ashok Hemal, MD[1], Tim Craven[2], Ram Pathak, MD[1]
[1]Wake Forest University Baptist Medical Center Department of Urology, [2]Wake Forest University Baptist Medical Center Department of Biostatistics
Presented By: Robert Russell Alexander Wilson, BS

Poster #150

IMPACT OF VARIANT HISTOLOGY ON SURVIVAL AND RESPONSE TO CHEMOTHERAPY IN PATIENTS WITH UPPER TRACT UROTHELIAL CARCINOMA

Wilson Sui, MD, Daniel A. Barocas, MD, Sam S. Chang, MD, David F. Penson, MD, MPH, Matthew J. Resnick, MD, MMHC, Aaron A. Laviana, MD
Department of Urology, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Poster #151

MOVING AWAY FROM MANNITOL INFUSION FOR PARTIAL NEPHRECTOMY: HAS THERE BEEN ANY EFFECT ON RENAL FUNCTION?

Jeffrey Wei[1], George Wayne[2], Kennedy Okhawere[3], Vivian Wong[1], Elias Atri[1], Juan Cedeno[2], Amr Elbakry[3], Bheesham Dayal[3], Akshay Bhandari[2], Ketan Badani[3]
[1]Florida International University, College of Medicine, [2]Mount Sinai Medical Center, Miami Beach, FL, [3]Mount Sinai Hospital, New York
Presented By: George Wayne, MD

Poster #152 **CD8 T-CELL INFILTRATION PREDICTS PROGRESSION IN RENAL CELL CARCINOMA AND STRATIFIES LOW AND HIGH-RISK PATIENTS WITH STAGE III DISEASE**

Caroline Jansen[1], Nataliya Prokhnevska[1], Maria Cardenas[1], Viraj Master[1], Jennifer Carlisle[2], Asim Bilen[2], Scott Wilkinson[3], Ross Lake[3], Adam Sowalsky[3], Adeboye Osunkoya[4], Patrick Mullane[4], Carla Ellis[3], Adriana Reyes[1], Yuan Liu[5], Haydn Kissick[1]

[1]Dept of Urology, Emory University, [2]Dept of Hematology and Oncology, Emory University, [3]Laboratory of Genitourinary Cancer Pathogenesis, National Cancer Institute, [4]Dept of Pathology, Emory University, [5]Rollins School of Public Health, Emory University

Presented By: Caroline Stewart Jansen, BS

Poster #153 **COMBINATION THERAPY FOR METASTATIC RENAL CELL CARCINOMA: A SYSTEMATIC REVIEW AND NETWORK METANALYSIS**

Muhammad Umar Alam, MD[1], Mark Bandyk, MD[1], Gautam Shiva[2], Daniel Norez[2], Jatinder Kumar, MD[2], karthik Taneru, MD[2], Hariharan Ganapathi, MD[2], Shahriar Koochekpour[3], Soroush Bazargani, MD[4], Seyedbehzad Jazayeri, MD[2], Kethandapatti Balaji, MD[2]

[1]University of Florida Jacksonville, [2]University of Florida, Jacksonville, [3]University of Florida, [4]University of FLorida, Jacksonville

Presented By: Muhammad Umar Alam, MD

Poster #154 **COMPARISON OF WIDE LOCAL EXCISION VERSUS MOHS MICROGRAPHIC SURGERY FOR THE MANAGEMENT OF GENITOPERINEAL EXTRAMAMMARY PAGET DISEASE: A SINGLE CENTER CASE SERIES**

Judy Hamad[1], Mark Fowler[2], Sagar Patel[1], Paul Googe[3], Brad Figler[4]

[1]University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC, [2]Department of Pathology, University of North Carolina, Chapel Hill, NC, [3]Department of Dermatology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Department of Urology, University of North Carolina at Chapel Hill, Chapel Hill, NC

Presented By: Judy Hamad, BS

Poster #155 **PROGNOSIS AND SURVIVAL OUTCOME FOR PRIMARY URETHRAL MELANOMA IN A LARGE POPULATION DATABASE**

Sagar Patel, BS[1,2], Matthew Johnson, MD[3], Robinson Myra, MSPH[4], Caitlin Hensel, BS[4], Asim Amin, MD, PhD[5], Peter Clark, MD[1], Stephen Riggs, MD[1]

[1]Atrium Health, Charlotte, NC, [2]University of North Carolina, Chapel Hill, NC, [3]Carolinas Pathology Group, Charlotte, North Carolina, [4]Department of Biostatistics, Levine Cancer Institute, Atrium Health, Charlotte, North Carolina, [5]Levine Cancer Institute, Atrium Health, Charlotte, North Carolina

Presented By: Sagar Patel

Poster #156 **EPIDEMIOLOGY AND SURVIVAL OUTCOMES OF ADULT KIDNEY, BLADDER, PROSTATE RHABDOMYOSARCOMA: A SEER DATABASE ANALYSIS**

Sagar Patel, BS[1,2], Caitlin Hensel, BS[3], Jiaxian He, MS[3], Matt Ellis, BS[1,2], William Worrilow, BA[3], James Kearns, MD[4], Kris Gaston, MD[4], Peter Clark, MD[4], Stephen Riggs, MD[4]
[1]Atrium Health, Charlotte, NC, [2]University of North Carolina, Chapel Hill, NC, [3]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, NC, [4]Department of Urology, Levine Cancer Institute/Atrium Health, Charlotte, NC
Presented By: Sagar Patel

Poster #157 **ROBOTIC RETROPERITONEAL LYMPH NODE DISSECTION CAN BE SAFETELY APPLIED IN A COMMUNITY-BASED, TERTIARY HOSPITAL SETTING**

Hamza Beano, William Blair Townsend, Jared Brown, Caroline LU, Peter Clark, Stephen Riggs
Department of Urology, Carolinas Medical Center/Atrium Health
Presented By: Hamza Mustafa Beano, MD

Poster #158 **DELAYED RADICAL ORCHIECTOMY FOLLOWING PRIMARY CHEMOTHERAPY FOR ADVANCED TESTICULAR GERM CELL TUMORS**

Arvind Krishnan, MD[1,2], Michael Dineen, MD[1,2], Ali Khan[2], Wade Sexton, MD[2]
[1]Morsani College of Medicine, University of South Florida, 12901 Bruce B. Downs Blvd, Tampa, FL, [2]Department of Genitourinary Oncology, Moffitt Cancer Center, 12902 Magnolia Drive, Tampa, FL
Presented By: Arvind Ramiah Krishnan, MD

Concurrent Session 4 of 4

7:00 a.m. - 8:00 a.m. **Prostate Cancer II Poster Session**
Location: Waldorf Astoria Ballroom
Moderators: Thomas A. Longo, MD
Raleigh, NC
Jonathan Silberstein, MD, MBA, FACS
New Orleans, LA

Poster #159 **PROSTATE CANCER IN ELDERLY – NATURAL HISTORY AND PROSTATE CANCER-SPECIFIC MORTALITY**

Muhammad Umar Alam, MD[1], Daniel Norez[2], Gautam Shiva[3], Jatinder Kumar, MD[2], Karthik Tanneru, MD[2], Mark Bandyk, MD[4], Kethanapatti Balaji, MD[4]
[1]University of Florida Jacksonville, [2]University of Florida, Jacksonville, [3]University of Florida, Jacksonville, [4]University of Florida, Jacksonville
Presented By: Mark G. Bandyk, MD, MPH

Poster #160 **STRATIFICATION OF POTENCY OUTCOMES FOLLOWING ROBOT ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY BASED ON AGE, PREOPERATIVE POTENCY AND NERVE SPARING (NS) APPROACH- A SINGLE SURGEON SERIES.**

Seetharam Bhat Kulthe Ramesh, Fellow, Marcio Moschovas, Fellow, Fikret Onol, Fellow, Travis Rogers, Fellow, Cathy Jenson, Coordinator, Vipul Patel, Director
Global Robotics Institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

Poster #161 **DOES OBESITY AFFECT PELVIC LYMPH NODE DISSECTION YIELD IN HIGH RISK PROSTATE CANCER?**

Kevin Parikh, MD[1], Ricky Bateh[1], Giovanni Gonzalez, MD[1], Amanda Myers, MD[1], Colleen Ball, MS[2], Raymond Pak, MD, MBA[1]
[1]Mayo Clinic, Department of Urology, Jacksonville, FL, [2]Mayo Clinic, Division of Biomedical Statistics and Informatics, Jacksonville, FL
Presented By: Kevin Parikh, MD

Poster #162 **HOW QUICKLY DOES THE LEARNING CURVE IMPROVE USING MP MRI US FUSION PROSTATE BIOPSY? A COMPARISON BETWEEN PATIENTS IN TWO CONSECUTIVE YEARS**

Daniel Zapata, Urology Resident, Patrick Probst, Urology Resident, Stephen Legg, Urology Resident, Marley Kristen, Urology Resident, Daniel Peters, Medical Student, Raymond Xu, Medical Student, Zachary Sherman, Medical Student, Anthony Patterson, Asociate Professor, Christopher Ledbetter, Assistant Professor, Robert Wake, Chairman
University of Tennessee
Presented By: Daniel Zapata, MD

Poster #163 **DIAGNOSTIC ACCURACY OF MULTIPARAMETRIC PROSTATE MRI DETECTING EXTRAPROSTATIC EXTENSION IN MEN WITH INTERMEDIATE AND HIGH-RISK PROSTATE CANCER**

Fernando Arroyo, MD, Ricardo Sanchez-Ortiz, MD
Robotic Urology and Oncology Institute and Division of Urology, University of Puerto Rico School of Medicine
Presented By: Fernando Arroyo

Poster #164 **PREDICTORS OF UPGRADING ON RADICAL PROSTATECTOMY SPECIMENS: ANALYSIS FROM THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE**

Rashid Sayyid, MD[1], John Benton[2], Atul Lodh[2], Katherine Miller, MD[1], Hanan Goldberg, MD[3], Rabii Madi, MD[1], Martha Terris, MD[1], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[1]
[1]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [2]School of Medicine, Medical College of Georgia-Augusta University, Augusta, GA, [3]Department of Urology, Upstate University Hospital, Syracuse, NY, [4]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN
Presented By: Atul Lodh

Poster #165 **PERFORMANCE CHARACTERISTICS AND IMPACT OF 18F FLUCICLOVINE PET CT ON THE MANAGEMENT OF MEN WITH RECURRENT PROSTATE CANCER**

Jamie Michael[1], Amir Khandani, MD[2], Hung-Jui Tan, MD[3], Eric Wallen, MD, FACS[3], Trevor Royce, MD, MPh[4], Young Whang, MD, PHD[3], Marc A. Bjurlin, DO, MSc, FACOS[3]
[1]UNC School of Medicine, Chapel Hill, NC, USA, [2]UNC Department of Radiology, Chapel Hill, NC, USA, [3]UNC Department of Urology, Chapel Hill, NC, USA, [4]UNC Department of Radiation Oncology, Chapel Hill, NC, USA
Presented By: Jamie Michael

Poster #166 **LONG-TERM OUTCOMES OF TWO-STEP PRE-BRACHYTHERAPY TRANSURETHRAL SURGERY IN PATIENTS WITH BLADDER OUTLET OBSTRUCTION AND LOW-TO-INTERMEDIATE RISK PROSTATE CANCER**

Obafunbi Abimbola[1], Allie Walsh, P.A.C[1], Dereck McHaffie, MD[2], Michael Haake, MD[2], Chris Teigland, MD[1], James Kearns, MD[1]
[1]Atrium Health Department of Urology, [2]Atrium Health Department of Radiation Oncology
Presented By: Obafunbi Abimbola

Poster #167 **INITIAL RESULTS OF MRI BASED PROSTATE BRACHYTHERAPY: EXPLORING VIABLE, COST-EFFECTIVE, AND SUPERIOR ALTERNATIVE TO TRUS BASED SURGERY**

Eric Wendel, MD, Raj Mitra, PhD, Jacob Anderson, MD, Troy Scroggins, MD
Ochsner Medical Center
Presented By: Eric Wendel, MD

Poster #168 **HOW TUMOR SPECIFIC CD8 T CELL ACTIVATION IN DRAINING LYMPH NODES SUPPORTS THE ANTI-TUMOR CD8 T CELL RESPONSE**

Nataliya Prokhnevska, Rajesh Valanparambil, Caroline Jansen, Viraj Master, Martin Sanda, Haydn Kissick
Emory University
Presented By: Nataliya Prokhnevska

Poster #169 **LATE DOSING OF LUTEINIZING HORMONE-RELEASING HORMONE AGONISTS AND TESTOSTERONE LEVELS >20NG/DL IN PROSTATE CANCER**

Vahan Kassabian, Director[1], Stuart Atkinson, VP Medical Affairs[2], Deborah Boldt-Houle, Director of Medical Affairs[2], Lucio Gordan, President[3]
[1]Atlanta Prostate Center and Advanced Therapeutics, [2]Tolmar Pharmaceuticals, Inc, [3]Florida Cancer Specialists Research Institute
Presented By: Vahan S. Kassabian, MD

Poster #170 **WHOLE GLAND CRYOABLATION OF THE PROSTATE: SIXTEEN YEAR EXPERIENCE AT A SINGLE INSTITUTION**
Elizabeth Tourville, Daniel Zapata, Monica O'Hanlon, Brad Houston, Chrissy Callaway, Anthony Patterson, Robert Wake
University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN
Presented By: Elizabeth Tourville, MD

Concurrent Sessions End

8:00 a.m. - 8:30 a.m. **Montague Boyd Essay Contest**
Moderator: S. Duke Herrell III, MD, FACS
Nashville, TN

Describing and Determining the Clinical Value of Early Post-Radical Cystectomy Urinary Flora
Presenter: Hamza M. Beano, MD
Charlotte, NC

A National Cross-Sectional Survey of Financial Toxicity Among Bladder Cancer Patients
Presenter: Mark Ehlers, MD
Chapel Hill, NC

Barrington's Reflexes Revisited: Proximal Urethral Electrical Stimulation as a Treatment for Underactive Bladder in Rats
Presenter: Bradley Potts, MD
Durham, NC

8:30 a.m. - 10:30 a.m. **Gee-Dineen Health Policy Forum II: The Urologic Physician Workforce from Training to Retirement**
Moderator: Chad W. Ritenour, MD
Atlanta, GA

8:30 a.m. - 8:50 a.m. **Preparing Trainees for Practice**
Panelist: Chad W. Ritenour, MD
Atlanta, GA

8:50 a.m. - 9:10 a.m. **Onboarding Into a New Practice**
Panelist: John P. Selph, MD
Birmingham, AL

9:10 a.m. - 9:30 a.m. **Sustaining a Practice and Finding New Opportunities**
Panelist: Angela B. Smith, MD, MS, FACS
Chapel Hill, NC

9:30 a.m. - 9:50 a.m. **Transitioning Roles and Preparing for Retirement**
Panelist: J. Brantley Thrasher, MD, FACS
Charlottesville, VA

9:50 a.m. - 10:30 a.m. **Discussion/Q&A**

10:30 a.m. - 10:45 a.m. **Break**
Location: Crescent City Pre-Function

10:45 a.m. - 11:00 a.m. **International Volunteerism Program: Resident Reports**
Moderators: Martin K. Dineen, MD, FACS
Daytona Beach, FL
Lorie G. Fleck, MD FACS
Mobile, AL
Presenter: Meghan A. Cooper, Do
Tampa, FL
William B. Townsend,MD, MBA
Charlotte, NC
Elizabeth J. Traore, MD
Atlanta, GA

11:00 a.m. - 11:45 a.m. **State-of-the-Art Lecture: What Does the Urologist Need to Know About Infertility?**
Moderator: Wayne J. G. Hellstrom, MD, FACS
New Orleans, LA
Guest Speaker: Peter N. Schlegel, MD, FACS
New York, NY

11:45 a.m. - 11:55 a.m. **Best Video Viewing and Award Presentation**
Moderator: Thomas J. Polascik, MD, FACS
Durham, NC

11:55 a.m. - 1:10 p.m. **Industry Sponsored Lunch Symposium**
Location: Waldorf Astoria Ballroom

1:10 p.m. - 1:40 p.m. **State-of-the-Art Lecture: Therapeutic Alternatives During BCG Shortage**
Speaker: Wade J. Sexton, MD
Tampa, FL

1:40 p.m. - 2:20 p.m. **Presidential Lecture: Testosterone Therapy: A 2020 Perspective**
Introducer: Glenn M. Preminger, MD
Durham, NC
Presidential
Guest Speaker: Peter N. Schlegel, MD, FACS
New York, NY

2:20 p.m. - 2:50 p.m. **Break**
Location: Crescent City Pre-Function

2:50 p.m. - 3:45 p.m. **Panel Discussion: Vaginal Prolapse: What a "Mesh": Following the FDA Mesh Actions, Who Should Get What?**
Moderator: Eric S. Rovner, MD
Charleston, SC

Vaginal Repair
Panelist: J. Christian Winters, MD, FACS
New Orleans, LA

Colpocleisis
Panelist: W. Stuart Reynolds, MD, MPH, FACS
Nashville, TN

Robotics
Panelist: Katie N. Ballert, MD
Lexington, KY

Pessary
Panelist: M. Louis Moy, MD
Gainesville, FL

3:30 p.m. - 3:45 p.m. **Discussion / Q&A**

3:45 p.m. - 4:00 p.m. **Hector Henry Memorial Lecture: Genitourinary Damage Control: Lessons From Military Action in the 21st Century**
Speaker: Andrew C. Peterson, MD, MPH, FACS
Durham, NC

4:00 p.m. - 4:45 p.m. **Panel Discussion: New Robotic Technologies**
Moderator: Li-Ming Su, MD
Gainesville, FL

Novel Robotic Microsurgical Platforms
Panelist: Sijo J. Parekattil, MD
Clermont, FL

New Lap Platforms
Panelist: Craig A. Peters, MD
Dallas, TX

Future Devices and Technology
Panelist: Nicholas Kavoussi, MD
Nashville, TN

6:00 p.m. - 7:30 p.m. **2020 SESAUA Closing Reception**
Location: Roosevelt Promenade

Participant Index

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

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Podiums

Podium #1

REPEAT TURBT FOR HIGH GRADE T1 UROTHELIAL CARCINOMA: CONTEMPORARY FINDINGS AND PREDICTORS OF UPSTAGING

Michael Massari, Michael Blute, Michael Dennis, Ardalan Ahmad, Padraic O'Malley, Paul Crispen
University of Florida
Presented By: Michael Massari, BS, BA

Introduction: Repeat TURBT upon initial diagnosis of high grade T1 urothelial carcinoma of the bladder is recommended for several reasons including the need to assess for muscle invasive disease. Here we evaluate the incidence and predictors of pathologic upstaging during repeat TURBT for high grade T1 bladder cancer in a contemporary cohort.
Methods: A retrospective review of the electronic medical record was performed for patients initially diagnosed with high grade T1 bladder cancer between June 2013 to March 2019 at our institution. Initial resections were evaluated based on presence of muscularis propria and setting of initial resection (outside urology practice vs our institution). All patients underwent a repeat TURBT, pathology from these procedures were used to assess upstaging rates and predictors of upstaging.
Results: 104 patients with high grade T1 bladder who underwent a repeat TURBT at our institution were identified. Average age was 70 years and the majority of patients were male, 69% (72/104). 38% (39/104) of patients had detrusor muscle present in their initial resection, with detrusor present in 35% (18/51) at our institution vs 41% (21/53) from outside practices ($p = 0.492$). T0 disease was noted in 35% (36/104) of patients overall, 41% (21/51) at our institution vs 28% (15/53) from outside practices ($p = 0.168$). Overall, 16.3% (17/104) where upstaged to T2 or greater disease. 5% (2/39) of patients who had detrusor muscle in the initial specimen were upstaged vs 23% (15/65) who did not have muscle present in their initial resection ($p = 0.017$). 25% (13/53) patients who were referred from outside providers were upstaged vs 8% (4/51) who were initially resected at our institution ($p = 0.021$). Patient age, patient gender, prior history of non-muscle invasive bladder cancer, history of BCG therapy, and time interval between TURBTs were not significantly associated with pathologic upstaging, $p > 0.05$ for all.
Conclusion: Upstaging to muscle invasive disease during repeat TURBT for high grade T1 bladder cancer remains prevalent in contemporary series. Predictors of upstaging may reflect quality of initial resection.
Funding: N/A

Podium #2

SEPARATE DEEP MARGIN SPECIMENS CAN IMPROVE THE RATE OF MUSCULARIS PROPRIA ON TURBT PATHOLOGY: A RESIDENT-DRIVEN QUALITY IMPROVEMENT INITIATIVE

Solomon Hayon, MD[1], Megan Gurjar, BSPH[2], Nathan Suskovic, BA[2], Mark Ehlers, MD[1], Pauline Filippou, MD[1], Kathryn Gessner, MD[1], Eric Wallen, MD[1], Matthew Nielsen, MD, MS[1], Hung-Jui Tan, MD, MSHPM[1]
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Presented By: Solomon Hayon, M.D.

Introduction: The presence of muscularis propria (MP) on transurethral resection of bladder tumor (TURBT) pathology is crucial to clinical staging but is absent in approximately 33% of specimens. A separate deep margin has been described as a technique to improve diagnostic yield of TURBT. We sought to determine whether resident-driven implementation of sending a separate deep margin improves the rate of MP on TURBT pathology.
Methods: We initiated a resident-driven quality improvement project where residents reviewed existing literature and developed a standardized protocol for sending TURBT pathology. Then, with assistance from faculty advocates, we asked faculty to send two separate pathologic specimens during TURBT – one superficial tumor specimen and one

deep margin specimen from the tumor base. Providers were not asked to change their resection strategy, but simply to send their usual specimen in two pathology containers. The practice change was instituted in January 2019, and primary analysis compared TURBTs from January-June 2018 (pre-intervention) to January-June 2019 (post-intervention). Cohorts were chosen to minimize confounding due to differences in resident trainee experience.
Results: Prior to the intervention only 4% of TURBTs sent a separate deep margin. Post-intervention this increased to 37%, with 80% of deep margin specimens containing MP **(Table 1).** 74% of 2019 post-intervention cases contained MP on pathology, compared to 64% of 2018 pre-intervention cases (p=0.09). Pathologic outcomes (Benign, CIS, Ta, T1, T2) were similar between the pre and post-intervention cohorts (p=0.11-1.0). In a sub analysis of the 2019 group, cases with a deep margin were significantly more likely to contain MP compared to cases without a deep margin (85% vs. 68%, p=0.04). Although not statistically significant, evaluation of the entire cohort showed cases with a separate deep margin more often demonstrated muscle-invasive disease compared to cases without a deep margin specimen (22% vs 12%, p=0.10).
Conclusion: Resident implementation of sending a deep margin specimen during TURBT increases the rate of MP on pathology and potentially increases diagnosis of muscle-invasive bladder cancer. This may be due to a more focused pathology review of deep specimens or a more concentrated resection strategy by the surgeon. Ongoing quality improvement efforts will focus on greater implementation, potentially generating greater benefit to patients.

	2018 Pre Intervention (n=129)		2019 Post Intervention (n=123)		
	n	%	n	%	p value
Separate deep specimen	5	4%	46	37%	<0.01
Muscle in any specimen	82	64%	91	74%	0.09
T2 muscle invasive disease	15	12%	21	17%	0.26
	2019 w/o Deep Margin (n=77)		2019 w/ Deep Margin (n=46)		
	n	%	n	%	p value
Muscle in deep specimen			37	80%	-
Muscle in any specimen	52	68%	39	85%	0.04
T2 muscle invasive disease	11	14%	10	22%	0.25
	All w/o Deep Margin (n=201)		All w/ Deep Margin (n=51)		
	n	%	n	%	p value
Muscle in any specimen	131	65%	42	82%	0.02
T2 muscle invasive disease	26	13%	11	22%	0.10

Funding: N/A

Podium #3
IS COLD CUP BIOPSY FROM RESECTION BED AFTER TRANSURETHRAL RESECTION OF BLADDER TUMOR (TURBT) HELPFUL?
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Presented By: Majid Mirzazadeh, MD

Introduction: Despite critical importance for staging, a significant percent of TURBT pathology samples do not have muscle fibers in the specimen. Absence of muscle fibers usually ends up with redo TURBT. In our practice, we obtain rigid cold cup biopsies (RCCB) from TURBT bed after completion of resection, which are labeled, and sent to pathology separately. In this study we evaluate results of this procedure.
Methods: We retrospectively reviewed the charts of all patients undergoing TURBT by author from 2012 to 2019. All patients with separate pathology results from both TURBT and RCCB of tumor bed were included in the study. We evaluated the presence or absence of muscle fibers, the involvement of muscle fibers by the tumor, and presence of cautery artifact in both sets of the specimen. We used Chi-Square test to compare the results between two groups.

Results: 43 of 104 patients with history of TURBT had biopsy results available for both resected tumor and RCCB. We evaluated the presence or absence of muscle fibers, the involvement of muscle by tumor and also cautery artifact in pathology specimens in both groups. 19 of 42 patients (45%) in TUR group had muscle fibers in their pathology specimen, compared to 32 of 42 (76%) of RCCB (P=0.004). Involvement of muscle fibers with tumor was reported in 11 of 42 (26%) of the specimen in TURBT group and 8 of 42 (19%) patients in RCCB groups (P=0.53).In both groups, two specimen of 42 reported with cautery artifact. There were four patients (9.5%) who had positive muscle fibers involvement in TUR without muscle involvement in cold cup biopsy. More importantly, there was one patient of 42 (2.4%) who had muscle involvement in the cold cup biopsy sample, but not in the resected tumor, which is critically important.
Conclusion: Cold cup biopsy from base of tumor after TURBT, significantly increase detection of muscle fibers in specimen (P= 0.004) and prevents unnecessary redo TURBT in patients. Cold cup biopsies occasionally detect muscle involvement by tumor when TURBT does not show tumor (2.5% of our series) which has a major impact in patient treatment and survival.
Funding: N/A

Podium #4
THE EFFECT OF CONDUCTIVE HYPERTHERMIA ON MITOMYCIN C ABSORPTION DURING INTRAVESICAL CHEMOTHERAPY
Wei Phin Tan, Andrew Chang, Wiguins Etienne, Brant Inman
Duke University Medical Center, Division of Urology, Durham, NC
Presented By: Wei Phin Tan, MD

Introduction: Hyperthermia (heating to 43°C) activates the innate immune system and improves bladder cancer (BC) chemosensitivity. We evaluated the impact of convective hyperthermia on intravesical mitomycin C (MMC) pharmacokinetics in live porcine bladder models.
Methods: Forty 60kg female swine were anesthetized and catheterized with a 3-way, 16-F catheter. The Combat BRS device was used to heat the porcine bladders to a target temperature of 43°C with recirculating intravesical MMC (2 mg/mL) at doses of 40mg, 80mg and 120mg. Dwell-heat time ranged from 30 to 120 min, after which rapid necropsy with immediate flash freezing of tissues (bladder, lymph nodes, liver, kidney, spleen, heart and lung) occurred. Blood and urine were collected longitudinally. Serum and tissue MMC concentrations were measured by liquid chromatography tandem-mass spectrometry.
Results: As shown in the **Table**, 3 factors increased MMC absorption into the bladder: dwell time, drug concentration, and the presence of heat. Bladder MMC concentrations were, in general, significantly higher in pigs that underwent convective hyperthermia than in those that did not (it is uncertain why this relationship was not present at the 120 mg dose with 1-hour dwell time). The relationship between bladder penetration of drug and heating showed a weak linear relationship with dose (Kendall's tau = 0.35). In the hyperthermia arm, drug penetration saturated at 80 mg dose, suggesting that with heating, drug absorption may saturate and not require higher doses to achieve the maximal biological effect. Convective hyperthermia did not increase the MMC concentration in the liver, heart, kidney, spleen, lung, and lymph node tissue and is therefore not expected to result in excess toxicity in humans, even at the 120 mg dose.
Conclusion: We present the largest series to date showing convective bladder hyperthermia using the Combat BRS device increases MMC penetration into the bladder wall but does not result in an increase of MMC levels in the liver, heart, kidney, spleen, lung, and lymph node tissue. The use of hyperthermia may saturate drug delivery and allow lower doses. These data support the use of the Combat BRS device to improve MMC penetration into the bladder wall.

MMC dose & dwell time	Bladder wall mitomycin C concentration (ng/mL)			
	Room Temperature		Hyperthermia	
	Median	IQR	Median	IQR
40mg (1 hour)	329	91-424	470	260-1029
80mg (1 hour)	617	311-785	7135	3604-9107
120mg (30mins)	3970	2401-13040	6822	5901-7048
120mg (1 hour)	6836	5860-13490	2286	1166-5794

Funding: National Cancer Institute T32 CA093245

Podium #5

OBJECTIVE RISK SCORE RELIABLY PREDICTS 30-DAY MORTALITY AFTER RADICAL CYSTECTOMY

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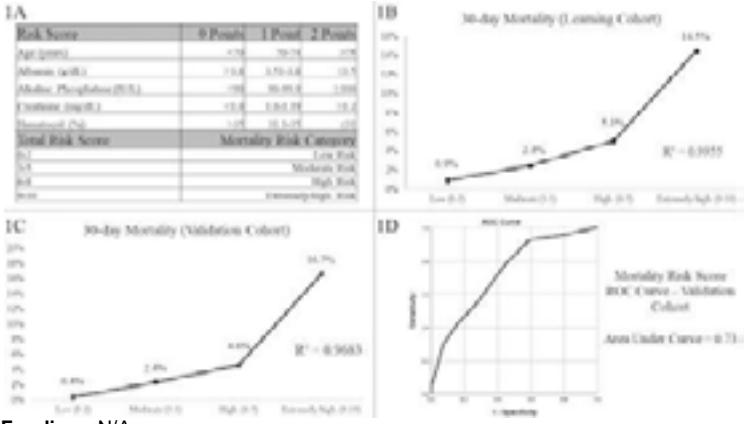
University of Tennessee Health Science Center
Presented By: Kristen Marley, MD

Introduction: Radical cystectomy (RC) is associated with significant perioperative mortality (2-5%); however, there is no reliable means to predict an individual patient's mortality risk. We hypothesized that objective, routine preoperative metrics can reliably stratify patients undergoing radical cystectomy into mortality risk categories.
Methods: The National Surgical Quality Improvement Program (NSQIP) Participant Use Files (PUF) were queried to identify patients undergoing RC between 2013-2017. Using a "learning" cohort of patients (2015-2017), multivariate analysis was used to identify risk factors associated with 30-day mortality after RC. Risk factors significantly associated with 30-day mortality were used to develop a proposed mortality risk score that was tested for accuracy against a "validation" cohort of patients (2013-2014). Youden's index was utilized to identify optimal cutoff points of continuous data. Area under the receiver operating characteristic curve (AUC) was calculated to quantify the discriminatory ability of the risk calculator to predict 30-day mortality. P values < 0.05 were accepted as statistically significant.
Results: A total of 10,759 patients underwent RC between 2013-2017. Overall 30-day mortality was 2.4% (n = 258). Using multivariate analysis, the learning cohort (2015-2017, n = 7,377) identified significant differences in the mean age, creatinine, albumin, alkaline phosphatase, and hematocrit between patients with and without 30-day mortality. The mortality risk score with corresponding mortality risk categories is shown in Figure 1A. In the learning cohort, mortality increased exponentially with increasing risk category, Figure 1B. When tested against the validation cohort (2013-2014, n = 1,947), mortality increased exponentially with increasing risk category, Figure 1C. The proposed risk score reliably predicted mortality in the validation cohort with an AUC of 0.73, Figure 1D.
Conclusion: Perioperative mortality risk can be reliably estimated using routine, objective preoperative metrics in patients undergoing radical cystectomy. This mortality risk score may identify those patients that benefit from more intensive medical optimization, in addition to assisting in preoperative counseling and shared decision-making discussions.



Funding: N/A

Podium #6

ANXIETY, DEPRESSION, AND PSYCHOLOGICAL DISTRESS IN PATIENTS UNDERGOING RADICAL CYSTECTOMY FOR BLADDER CANCER

Blake Johnson, MSc[1], William Worrilow, BA[2], Patrick Meadors, PhD, LMFT[3], Stephen Riggs, MD[2]

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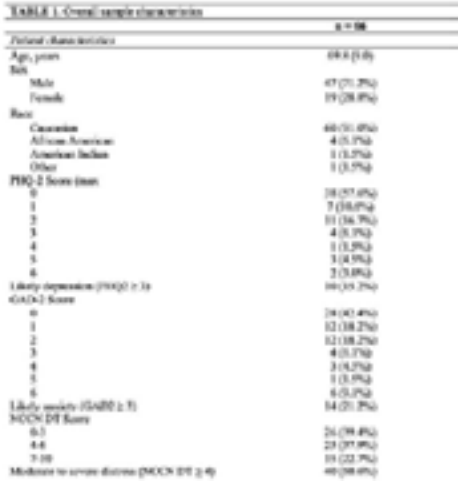
Presented By: Blake Elliot Johnson, MSc

Introduction: Depression and other psychological factors significantly impact cancer patients, lower treatment adherence and extend length of hospital stays. Despite studies across disciplines demonstrating that pre-operative distress and depression is associated with worse post-operative pain control, increased post-operative morphine use and poorer surgical outcomes, little research has been conducted to characterize psychological distress, depression, and anxiety in patients with bladder cancer undergoing cystectomy.

Methods: 68 patients with bladder cancer were prospectively surveyed prior to radical cystectomy using a comprehensive questionnaire that contained the Patient Health Questionnaire-2 (PHQ-2), the Generalized Anxiety Disorder-2 item (GAD-2), and the National Comprehensive Cancer Network Distress Thermometer (NCCN DT). These three validated instruments are used to screen for the risk of depression, anxiety, and psychological distress, respectively. A threshold of 3 or greater on the PHQ-2 and the GAD-2 was used to identify patients that likely have depression or anxiety. A score of 4 or greater on the NCCN DT was used to identify patients likely experiencing a moderate to high level of distress.

Results: The pre-operative prevalence of depression and anxiety among patients diagnosed with bladder cancer undergoing radical cystectomy was 16% and 22%, respectively. The prevalence of psychological distress among patients surveyed was 60%. The prevalence of depression, anxiety or psychological distress was not significantly different among race groups or by sex. Age was not predictive of depression, anxiety, or psychological distress in our study population.

Conclusion: Our study demonstrates that a significant number of patients with bladder cancer undergoing cystectomy experience distress, anxiety, or depression prior to surgery. Future efforts will focus on clarifying the relationship of psychological factors to clinically significant outcomes in the post-operative period and on identifying the value of mitigation strategies to address these factors prior to surgery.



Funding: N/A

Podium #7
SARCOPENIA IS AN UN-MODIFIABLE OUTCOMES PREDICTOR FOR BLADDER CANCER PATIENTS

Gregory Barton, MD[1], Jeannette Wang[1], Andrew Chang, MD[1], Wei Phin Tan, MD[1], Joseph Fantony, MD[1], Paul Wischmeyer, MD[2], Rajan Gupta, MD[3], Brant Inman, MD[1]
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Presented By: Gregory John Barton, MD

Introduction: Sarcopenia, a severe loss of skeletal muscle mass, predicts poor outcomes in bladder cancer (BC). However, why sarcopenia occurs in BC is presently unknown. Our objective was to determine if diet and physical activity were the primary factors causing sarcopenia, and thereby determine if sarcopenia could be addressed by lifestyle interventions
Methods: 286 patients filled out the International Physical Activity Questionnaire Long Form (IPAQ-L) and the Diet History Questionnaire II (DHQ2), and had a CT abdomen/pelvis within 6 months of questionnaire administration and met inclusion criteria. The DHQ2 was converted into Healthy Eating Index 2010 scores (HEI2010). Skeletal muscle area (SM, cm2) area was measured at the L3 level using Slice-O-Matic software and divided by height (m2) to arrive at skeletal muscle index (SMI). Sarcopenia was defined as SMI <52.4 in men and <38.5 in women. Three raters read the images and inter-rater reliability was measured by the intra-class correlation coefficient (ICC). Associations between patient demographics, tumor characteristics, physical activity, diet quality, and body composition were examined by stratified analyses and regression models with R 3.2.3.
Results: Reliability was very high with ICC of 0.97. Sarcopenia was present in 71% of males and 55% of females. Key predictors of decreasing SMI included increasing age ($p<0.001$), female gender ($p<0.001$), and white race ($p<0.001$). When adjusted for these unmodifiable patient factors, there was no association between SMI and medical variables such as Elixhauser comorbidity score, AJCC stage, tumor grade, and procedure type. With respect to modifiable lifestyle factors, there was no association between SMI and average weekly MET-min of physical activity level ($p=0.99$) nor the daily consumption of calories ($p=0.69$), protein ($p=0.28$), fat ($p=0.19$), or carbohydrate ($p=0.77$). Also the HEI2010 diet quality score was not associated with SMI ($p=0.66$).

Conclusion: The three strongest predictors of decreasing muscle mass (i.e. sarcopenia) in BC patients are age, gender, and race. Modifiable risk factors, such as diet and physical activity levels, did not affect sarcopenia. Therefore, we would not expect that targeted lifestyle inteventions would affect sarcopenia and improve BC outcomes.
Funding: N/A

Podium #8
CLINICAL UTILITY OF POST-NEOADJUVANT CHEMOTHERAPY COMPUTED TOMOGRAPHY FOR MUSCLE-INVASIVE UROTHELIAL BLADDER CANCER
Sagar Patel, BS[1,2], Caitlin Hensel, BS[1], Jiaxian He, PhD[1], William Worrilow, BA[1], James Kearns, MD[1], Kris Gaston, MD[1], Peter E Clark, MD[1], Stephen Riggs, MD[1]
[1]Atrium Health, Charlotte, NC, [2]University of North Carolina, Chapel Hill, NC
Presented By: Sagar Patel

Introduction: For muscle-invasive urothelial bladder cancer, restaging computed tomography (CT) scans are often used prior to cystectomy to optimize surgical decision planning. However, the clinical utility of post-neoadjuvant chemotherapy (NAC) CT remains unclear. The aim of this study is to evaluate the clinical value of post-NAC CT scans in patients with localized bladder cancer prior to cystectomy.
Methods: All T2-3N0 urothelial bladder cancer patients from 2014-2019 who completed cisplatin-based NAC were retrospectively analyzed. On post-NAC CTs, patients with tumor progression, nodal involvement, metastatic disease, and non-cancer related findings were determined and subsequent surgical decision making was evaluated. For these new radiographic findings, false positive rates were calculated along with overall survival via Kaplan-Meier method, upstaging from clinical to pathologic staging via Fisher's exact test, and impact of time to cystectomy via cox hazard model.
Results: At our tertiary community institute, 79 patients completed NAC with pre- and post-scans. Approximately 21.5% of our patients had a new finding on post-NAC scan of which false positive rates for nodal and metastatic disease were both 100%. The frequency of novel findings on post neoadjuvant CT scans were 4 (5.1%) with tumor progression, 6 (7.6%) newly discovered enlarged nodes, 8 (10.1%) new lesions suspicious for distant metastases, and 3 (3.8%) non-cancer related conditions. Of the 79 patients, only 3.8% (3) had alterations in original cystectomy plans exclusively due to tumor progression; 100% of cohort underwent cystectomy. Overall survival (OS) was not associated with new findings on post-NAC scans (3-year OS 77.4% versus 74%; $P = 0.473$). New radiographic findings on scans were associated with higher pathologic staging following cystectomy ($P < 0.001$). Median time between post-NAC scan to cystectomy was statistically delayed for patient with new radiographic findings compared to these with consistent pre-NAC scans (29.5 (21.5-40) versus 51 (36-64) months $P = 0.014$).
Conclusion: Compared to the pre-NAC scans, our data suggests that post-NAC CTs discover new findings in approximately 21.5% of cases, but this rarely changes pre-operative plans, is not associated with overall survival, and is frequently associated with false positive results. Multidisciplinary evaluation is warranted to determine the cost-effectiveness of MIBC treatment following NAC.
Funding: N/A

Podium #9
PALLIATIVE CARE USE AMONG BLADDER CANCER PATIENTS TREATED WITH RADICAL CYSTECTOMY
Nourhan Ismaeel, Dattatraya Patil, Mehrdad Alemozaffar, Christopher Filson, Viraj Master, Aaron Lay
Emory University
Presented By: Nourhan Ismaeel, MD

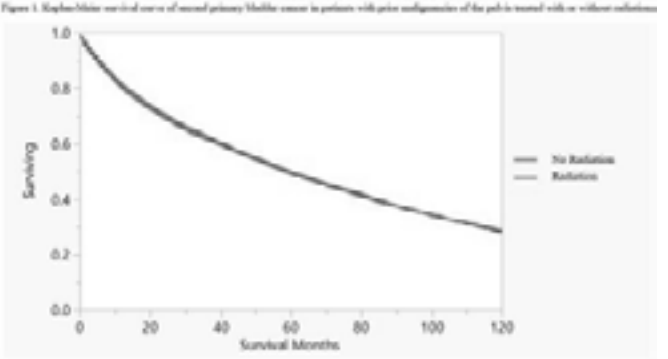
Introduction: Practice guidelines recommend early consideration for palliative care for patients with advanced malignancies, and there has been limited research regarding the use of palliative care for patients with advanced bladder cancer. This patient population may particularly benefit the most from a number of aspects of palliative care, including

symptom management, clarification of treatment goals, and coordination with nursing and care providers. Our aim is to describe the rate and determinants of the use of palliative care consultation for patients treated with radical cystectomy at our institution.
Methods: A retrospective review was performed to identify patients who underwent cystectomy between September 2014 and June 2019 at our institution. Our primary outcome was receipt of palliative dare, defined as receiving a palliative care consult. We tested for associations between factors and our outcome of interest, and then estimated the impact of various determinants of palliative care use by fitting a multivariable logistic regression model.
Results: Over the study period, 294 patients underwent radical cystectomy. Of those patients, 29 (9.9%) received palliative care. Mean time from surgery to palliative care consult was 11.4 months. Palliative care consults were initiated by urologists in only 32.1% of cases. On multivariable analysis, patients were more likely to receive palliative care if they had pT3+ disease ($P < 0.001$), had moderate to severe chronic kidney disease ($P = 0.019$), were readmitted after surgery ($P = 0.03$), and had any major complication after surgery ($P = 0.031$).
Conclusion: Rates of palliative care consults in patients with advanced bladder cancer at our institution are higher than other population-based estimates at the national level. The majority of palliative care consults were requested by medical oncologists, highlighting an opportunity for educational initiatives for urologic oncologists to promote earlier consideration of palliative care referrals.
Funding: N/A

Podium #10
CHARACTERIZING THE BEHAVIOR OF SECONDARY BLADDER CANCER AFTER PELVIC RADIATION
Caleb Natale, BA, Gabriel Leinwand, MD, Farid Zeineddine, BS, Jonathan Silberstein, MD, Louis Krane, MD
Tulane University School of Medicine, Department of Urology, New Orleans, LA
Presented By: Caleb Natale

Introduction: Although emerging evidence demonstrates increased risk of secondary malignancy including bladder cancer following pelvic radiotherapy, the aggressiveness of these is not well-characterized. This study compares bladder cancer specific survival outcomes for patients with a history of primary pelvic malignancy treated with or without radiotherapy and subsequent bladder cancer diagnosis.
Methods: The Surveillance, Epidemiology, and End Results (SEER) 18 Database was queried to identify 25,734 patients diagnosed with bladder cancer following definitive therapy for a previously diagnosed pelvic malignancy. Data was analyzed using JMP Statistical Discover 14.1 (SAS Institute Inc., Cary, NC). Kaplan-Meier curve analysis were utilized to determine overall survival at 1,2,5 and 10 years for the second cancer. Statistical significance was set at $p<0.05$.
Results: Of the 25,734 patients, 11,376 (44.2%) received radiation treatment for their first cancer. Cancers of the anus and cervix were the most likely to be treated with radiation, at 71.2% and 69.7%, respectively. The most common first primary cancer was prostate (86.2%), followed by rectum (5.0%). Overall survival of second bladder cancer was found to be 80%, 69.5%, and 49.2% at 1,2 and 5 years, respectively. There was no significant survival difference between groups whose treatment for first cancer was radiation vs no radiation ($p=0.755$). (Figure 1) When looking at individual sites of first cancer, a survival advantage was seen for the bladder cancer patients who had not received radiation for cervical ($p=0.0042$), uterine ($p=0.0006$), and vaginal cancers ($p<0.0001$), while prostate cancer patients showed survival benefit to receiving radiation treatment ($p=0.0021$). The average time to second cancer diagnosis was 6.5±6.1 years. When considering all cases, patients who received radiation treatment for the first cancer showed a longer time to second cancer at 7.2±6.0 years compared to 5.9±6.0 years for those treated without radiation for the first cancer ($p<0.01$).
Conclusion: Patients with prior history of female cancers treated without radiation demonstrated significant survival advantage in second primary bladder cancer. A small, statistically significant survival advantage was seen in bladder cancer patients previously

treated for prostate cancer with radiation. This data suggests that bladder cancer as a secondary malignancy following pelvic radiotherapy has similar biologic aggressiveness to urothelial carcinoma developing without a history of radiotherapy.



Funding: N/A

Podium #11

2019 BLADDER CANCER PATIENT SURVEY NETWORK RESULTS

Judy Hamad[1], John Gore[2], Stephanie Chisolm[3], Robert Lipman[3], Angela Smith[4]
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Presented By: Judy Hamad, BS

Introduction: Incorporating patients in the research process and including patient-centered outcomes has become an important standard in research, as it leads to meaningful results that help patients make better healthcare decisions. The Bladder Cancer Advocacy Network's (BCAN) Patient Survey Network (PSN) established a diverse and engaged bladder cancer patient population who contribute to the prioritization of bladder cancer research topics through annual surveys and summits.
Methods: Through the PSN, patient participants reported their age, gender, race, highest level of education, household income, histology, disease stage, treatments received, and date of last treatment. Caregiver participants reported on these measures on behalf of their loved ones. Respondents then prioritized a series of stakeholder-identified research questions within their own disease stage category with the option to include their own prioritized question via free-text.
Results: By year three of the PSN, the network enrolled over 1300 patients and caregivers. 405 patients and caregivers responded to the 2019 research prioritization survey. The average age of respondents was 67 years. The majority of respondents were male (62.5%) with non-muscle invasive bladder cancer (62.6%) diagnosed in the past five to ten years. 80.5% of respondents reported receiving greater than one form of treatment, most commonly transurethral resection of bladder tumor (TURBT) and intravesical therapy. Prioritization rankings of research questions were stratified by bladder cancer stage (Figure 1). For NMIBC, the highest-ranked question involved the study of biomarkers to predict cancer recurrence (average rank of 1.82 on a scale of 1-5). Respondents with MIBC, metastatic bladder cancer, and upper tract urothelial cancer prioritized a similar research question regarding strategies to help patients understand their cancer prognosis (mean ranking 1.95 on a scale of 1-5 for MIBC; mean ranking 1.85 and 1.94 on a scale of 1-4, respectively, for metastatic and upper tract urothelial cancer). Free-text questions submitted by respondents were similar to those included in previous PSN iterations.
Conclusion: The 2019 PSN highlights patient-prioritized research questions for a large group of bladder cancer patients and caregivers. These high-priority research questions will be distributed to funding agencies and will serve to guide future studies incorporating patient-centered outcomes.

Funding: N/A

Podium #12
PREDICTING INTRACAVERNOSAL INJECTION THERAPY FAILURE BY EVALUATING MEDICAL RISK FACTORS IN MEN WITH ERECTILE DYSFUNCTION
Steven Lomax, MD[1], Patrick Houghton, MD[1], Joseph Ivey, MD[1], Kevin Parikh, MD[1], Grace Edwards[1], Peter Cannizzo[1], Colleen Ball, MS[2], Gregory Broderick, MD[1]
[1]Mayo Clinic Florida, Department of Urology, [2]Mayo Clinic Florida, Departmentof Health Sciences Research
Presented By: Steven Lomax, MD

Introduction: The treatment of erectile dysfunction (ED) is affected by a substantial number of organic disease processes. Our primary aim was to identify medical risk factors associated with intracavernosal injection therapy (ICI) failure resulting in progression to intrapenile prosthesis (IPP).
Methods: We included 339 patients with erectile dysfunction who were initiated on ICI in our practice from 2013 through 2018. We assessed each patient's medical risk factors which included body mass index (BMI)

study, a clinical scoring system could be formulated to help predict which patients are at greatest risk for failing ICI.
Funding: N/A

Podium #13
UTILIZING GRIP AND PINCH STRENGTH PRIOR TO THREE-PIECE IPP PLACEMENTS AS A PREDICTOR OF POST-OPERATIVE PATIENT SATISFACTION. CURRENT PRE- AND POST-OPERATIVE DATA.
Hayden Jahn, MD, John M. Williams, MD, Jacob Anderson, MD, Bryan Savage, Maria Latsis, Eric Laborde, MD
Ochsner Clinic Foundation
Presented By: Hayden E. Jahn, MD, BS

Introduction: Frailty has been shown to be an independent predictor of post-operative complications and hospital length of stay. We sought to investigate whether frailty as measured by pinch strength could predict perioperative outcomes and post-operative satisfaction in patients undergoing insertion of an inflatable penile prosthesis (IPP) for refractory erectile dysfunction (ED).
Methods: This is an IRB-approved prospective observational study which started accruing in July 2017. Patients scheduled to undergo placement of a three-piece IPP had pre-operative grip and pinch strengths recorded in a standardized fashion with a dynamometer. Both erectile function and satisfaction were measured pre and post operatively with IIEF and PGI-I questionnaires. Follow-up surveys were conducted at three, six, nine, 12, 18, and 24 months after surgery. All peri-operative complications were also noted.
Results: Eighty-three patients have enrolled in the study and 78 have undergone surgery. Mean age and body mass index of the study cohort is 65 years (36-81 years) and 29.9 kg/m² (18.5-44.6 kg/m²), respectively. Mean grip and pinch strengths were matched with age related normative data. Those below the mean for their age were classified as frail. Thirty-four (40.9%) and fifty (60.2%) patients were classified as frail when measured by pre-op pinch strength and grip strength, respectively. There was no significant difference in pre-op IIEF scores between frail and not-frail patients. There were no significant differences between frail and not frail patients measured by IIEF or PGI-I scores at any subsequent follow up ($p>0.05$ at all intervals). Two (2.4%) patients classified as not-frail developed post op infections. No other significant complication was recorded. No frail patients developed infection. There was no difference in post op complications between the groups ($p=0.51$).
Conclusion: Currently, our study shows a wide range of grip and pinch strengths. At this time, post-operative data is complete with two year data obtained for six patients. Our data does not appear to show a difference in patient satisfaction between frail and non-frail patients with regards to erectile function or satisfaction after IPP placement. This information is important for implant surgeons as even frail patients can benefit from IPP.
Funding: Boston Scientific

Podium #14
MICROBIOME OF THE PRIMARY PENILE IMPLANT: A COMPARISON PILOT STUDY WITH WORRISOME RESULTS AT THE PUMP SPACE
Gerard Henry, MD
Ark La Tex Urology
Presented By: Gerard D. Henry, MD

Introduction: Recent advances in high-throughput DNA sequencing technologies have made it possible to characterize microbial communities (i.e. microbiomes) in anatomical sites previously assumed to be sterile. Previous studies have suggested infections originating from the nasal / oral cavity and urine tract. Orthopedic literature shows DNA positivemicrobiome in the native arthritic hip and knee joint using 16S ribosomal RNA next generation sequencing (NGS). We used this approach to explore the composition within the penile corpora, scrotal pump space, and at the inguinal ring in primary patients.

Materials: A pilot study is being performed on primary (virgin) inflatable penile implant (IPP) patients. Urine specimen obtained at the time of catheter placement in the OR withswabs of the oral cavity, penile corpora, inguinal ring, pump space on exposure were obtained at the time of surgery and shipped to a centralized laboratory for testing (MicrogenDx, TX). Following DNA extraction, microbial 16S ribosomal RNA next generation sequencing (NGS) was performed. Bioinformatics analyses were conducted to generate taxonomic units for quantitative and comparative statistical analyses.
Results: Ten patients entered into our pilot study are presented. All oral swabs were positive with all inguinal ring and penile corpora being negative and 1urine specimen positive. 2 pump space samples came back positive: patient A had 5 bacteria at low levels with Staph Aureus being predominant (63% of the load) and patient B had the fungus Saccharomyces cerevisiae with 98% of the DNA load.
Conclusion: These results, similar to orthopedics, demonstrate positive microbiomes at previously thought to be sterile surgical locations. To our knowledge, this is the first report of a microbiome in the native IPP patient. Baseline characterization of the NGS signal in these spaces may help establish a context for the interpretation of sequencing diagnostics in suspected IPP infection.
Funding: N/A

Podium #15
SAFETY OF INFLATABLE PENILE PROSTHESIS IN SOLID ORGAN TRANSPLANT RECIPIENTS
Brian Dick[1], Amit Reddy[1], Jacob Greenberg[1], Meredith Freeman[1], Nicholas Ottaiano[1], Laith Alzweri[1], Anil Paramesh[2], Wayne J. G. Hellstrom[1], Omer Raheem[1]
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Presented By: Brian Dick

Introduction: Current literature reports increased rates of erectile dysfunction (ED) in solid organ transplant (SOT) patients compared to non-SOT patients, likely owing to extensive comorbidities. Inflatable penile prosthesis (IPP) is a safe, effective ED treatment in non-SOT patients; however, there is a paucity of contemporary data in evaluating the long-term complication rates of IPP in SOT vs. non-SOT patients. We aimed to evaluate the short- and long-term complication rates of IPP in SOT recipients utilizing a large transplant database.
Methods: A retrospective chart review of a large SOT database (n=916) at an academic institution between 2006 and 2016 was performed. All patients receiving a virgin IPP post-transplant were identified. Patients' demographics, clinical characteristics and comorbidities were recorded. Each patient was evaluated for short-term (0-90 days) complication rates as defined by Clavien-Dindo classification 2 or greater. Long-term (>90 days) outcomes were observed, and all patients requiring IPP revision and/or replacement were noted.
Results: We identified 15 SOT recipients who underwent IPP. 130 non-SOT recipients who underwent IPP were used as controls. The mean follow up was 81 months. Mean age of the SOT recipient group was 54 (SD +/- 12.6) vs control 62 (SD +/- 9.4) p=0.006. There were no significant differences between SOT recipient and control groups in terms of body mass index 28.4 (SD +/- 4) vs 31 (SD +/- 6) p=0.13, as well as history of coronary artery disease (33% vs 21%, p=0.32), hypertension (67% vs 74%, p=0.55), diabetes (47% vs 42%, p=0.79), and hyperlipidemia (27% vs 35%, p=0.58). SOT recipients did not experience any complications or infections in the first 90 days. Long-term outcomes involving IPP replacement and/or revision were comparable between the SOT recipient and control group (27% vs 12%, p=0.11).
Conclusion: In this matched cohort, the short-term post-operative complication rates of IPP placement in SOT recipients were low. Surgical indications for replacement or revision of IPP were comparable between the two groups. While larger studies are

warranted, this study suggests that SOT recipients are suitable candidates for IPP

	SOT Recipients (N=15)	Controls (N=130)
Infection	0	7
Device Malfunction	2	5
Device Migration	2	1
Device Causing Pain	0	2

Table 1. Surgical indication for IPP replacement/revision procedures
Funding: n/a

Podium #16
INITIAL EXPERIENCE WITH THE BOSTON SCIENTIFIC TACTRA SEMI-RIGID PENILE PROSTHESIS: A MULTI-INSTITUTIONAL CASE SERIES
Samantha Nealon, MD[1], Adam Baumgarten, MD[2], Premal Patel, MD[3], Ranjith Ramasamy, MD[3], Gerard Henry, MD[4], Rafael Carrion, MD[1]
[1]University of South Florida, [2]University of Texas Southwestern Medical Center, [3]University of Miami Health System, [4]Willis-Knighton Physician Network
Presented By: Samantha C. Nealon, MD

Introduction: The semi-rigid penile prosthesis (SRPP) is a treatment for end-stage erectile dysfunction (ED). SRPPs are typically placed for either conservative therapy failure or to provide a permanent ED solution. In May 2019, Boston Scientific released its newest SRPP, the Tactra, constructed around a Nitinol core with dual-layer silicone construction. We highlight the initial experience with the Tactra from three high-volume implanting institutions.
Objective: To present the initial experience of eleven patients with the Tactra. Herein patient characteristics, surgical methods, intraoperative surgeon experience, postoperative follow-up and implant characteristics are described.
Methods: Eleven patients underwent placement of the Tactra during June 2019 at three institutions. Indications for SRPP included: (1) initial implant placement for ED, ease of use, (2) current/previous IPP infection, mechanical malfunction or distal erosion. Patient characteristics, perioperative parameters, and follow-up were reviewed.
Results: The patient population was diverse. 55% had at least one prior implant surgery. Each implant girth, 9.5mm, 11mm and 13mm was used, with length range 14.5cm - 22.0cm. Corporotomies were extended to at least 4cm for implant accommodation in 64% of patients. Ease of insertion was comparable to Spectra/Genesis with larger corporotomy. In 36%, the original furlough measured implant length required shortening by ³1cm for proper fit. This was attributed to the blunted end of this implant not passing as far distally into the glans. At follow-up, 55% (11mm and 13mm implants) reported difficulty concealing the implant. Patients reported good flexibility and concealability with 9.5mm rods. On initial follow-up, “S” deformity was noted in 27%. These providers found a uniformly more natural glans contour on all Tactra patients compared to Spectra/Genesis, likely due to the flatter curve of the implant tip (**FIGURE 1 A&B**). Patients denied significant postoperative pain or issues urinating.
Conclusion: The Boston Scientific Tactra is the newest innovation in SRPPs in fifteen years in the USA market with overall patient satisfaction in the early stages for penile aesthetics, glans contour and postoperative pain. Three patients had some “S” deformity, and implant concealability decreases with increased girth size. Future studies will focus on quality of life, long-term satisfaction, and comparison between Tactra and Spectra/Genesis.
FIGURE 1

A & B – Representative patients who received a Tactra
Funding: N/A

Podium #17

MANAGEMENT OF PEYRONIE'S DISEASE IN THE PRE- VS POST XIAFLEX ERA

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Emory University, Department of Urology, Atlanta, GA
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 pain and emotional distress. Although many oral and intralesional therapies have been used for the treatment of PD, Xiaflex (collagenase clostridium histolyticum) was introduced in 2014 as the first FDA-approved intralesional treatment for PD. Xiaflex represents a minimally invasive treatment alternative compared to more complex reconstructive operations.
Methods: We analyzed 2009-2017 Marketscan Commercial Claims data to identify all men who underwent evaluation and/or treatment for diagnosis of PD using ICD 9/ICD 10 and CPT code queries. Information on age, medical comorbidities, treatment types, geographic region, and clinical care setting were abstracted from the database. We used the Cochran-Armitage test of trend to compare the frequency of use of intralesional (interferon, verapamil, Xiaflex) and surgical therapies (plaque incision/excision/graft/penile prosthetic placement) for PD before and after 1/1/2014. SASv.4 was used for all analyses. Significance was set at $p<0.05$.
Results: A total of 75602 men were evaluated during the study period. Overall, mean age was 52 ± 10 yrs. 50% of men had concomitant erectile dysfunction (ED), with 38% having diagnosis of ED prior to PD therapy. Diabetes mellitus and prostate cancer affected 16.2% and 7.7% of men respectively. 11.8% of men underwent penile duplex ultrasound. 13,792 of men (18%) underwent one or more treatment(s) for PD. Table 1 summarizes treatment utilized before and after 1/1/2014.

Conclusion: In this large cohort of men with PD, 18% of men underwent treatment. Treatment rates with Xiaflex increased while other specific intralesional therapy (interferon and verapamil) rates as well surgical correction of PD slightly decreased. The availability of Xiaflex is associated with decreased use of more invasive treatment options.

TABLE 1

Treatment Type	Pre Xiaflex Era (n=49,351)	Post Xiaflex Era (n=26,451)
Intralesional Therapy	4302 (13.8%)	4071 (15.4%)
Verapamil	4248 (8.6%)	1935 (7.2%)
Interferon Alpha 2-b	58 (0.1%)	18 (0.06%)
Collagenase Clostridium Histolyticum (Xiaflex)	308 (0.62%)	1328 (4.2%)
Surgical Therapy	3876 (7.9%)	1720 (6.5%)
Penile Plication	1448 (2.9%)	588 (2.2%)
Plaque Excision +/- Graft	1020 (2.0%)	387 (1.5%)
Penile prosthetic placement	1954 (3.4%)	834 (3.1%)

Funding: N/A

Podium #18

FORMALIN VERSUS BOUIN SOLUTION FOR TESTIS BIOPSIES: WHICH IS THE BETTER FIXATIVE?

James Ellenburg, MD[1], Peter Kolettis, MD[1], Joseph Drwiega, MD[2], Anna Posey[2], Matthew Goldberg, PhD[2], Jennifer Gordetsky, MD[3]

[1]University of Alabama at Birmingham Department of Urology, [2]University of Alabama at Birmingham Department of Pathology, [3]Vanderbilt University Department of Pathology

Presented By: James L. Ellenburg, MD

Introduction: Bouin solution is currently recommended over formalin for optimal fixation of testis biopsy specimens. We compare the use of buffered formalin and Bouin solution for fixation of rat testes**.**

Methods: A prospective evaluation compared the histologic quality of rat testicular tissue fixed in Bouin solution versus formalin. Testicular tissue was harvested post-mortem from six rats. Each testis was removed and sectioned in half; one half was fixed in formalin and one half in Bouin solution. Specimens were graded as high quality or low quality based on microscopic appearance: nuclear membrane detail, nuclear granularity, cytoplasmic granularity, cytoplasmic membrane detail, and basement membrane detail.

Results: The Bouin solution fixed tissue had high quality cytoplasmic granularity in 12/12 (100%) slides and high quality basement membrane detail in 12/12 (100%) slides. However, the nuclear membrane detail was low quality in 7/12 (58.3%) slides, nuclear granularity was low quality in 11/12 (91.7%) slides, and cytoplasmic membrane detail was low quality in 5/12 (41.7%) in Bouin solution fixed tissue. Formalin fixed tissue was found to be of high quality with regard to nuclear membrane detail and basement membrane detail in 12/12 (100%) of slides. Both nuclear and cytoplasmic granularity and cytoplasmic membrane detail were found to be high quality in 10/12 slides (83.3%) of formalin fixed tissue.

Conclusion: Formalin fixation of rat testicular tissue produced superior histology to Bouin solution. Therefore, we recommend formalin as an alternative to Bouin solution for testis biopsy specimens.

Funding: N/A

Podium #19

WHOLE TESTES CRYOPRESERVATION FOR FUTURE AUTO-TRANSPLANTATION: COMPARISON OF DIFFERENT FREEZING METHODS

Robert Wilson[1], Oludamilola Ademoyero, Msc[1], Elizabeth Greene, LATG[2], Zhen Chen, Msc[2], Anthony Atala, MD[1,3], Kelvin Brockbank, PhD[2], Hooman Sadri-Ardekani, MD, PhD[1,3]

[1]Wake Forest Institute for Regenerative Medicine, [2]Tissue Testing Technologies LLC, [3]Department of Urology, Wake Forest School of Medicine

Presented By: Robert Russell Alexander Wilson, BS

Introduction: In the past three decades, survival rates of cancer patients has increased significantly, though infertility remains a common long-term complication of cancer therapy. Whole testis cryopreservation for successive transplantation is a potential fertility-sparing strategy in childhood cancer patients.

Methods: As a model mimicking human pediatric testes, eight sexually immature male rats were sacrificed and submitted to orchiectomy. Whole testis organs from each rat were randomly assigned to four groups: Group A, fresh tissue (control); Group B, slow freezing with 10% DMSO and rewarmed at 37°C; Group C, slow freezing with 10% DMSO and rewarmed on ice, and Group D, vitrified using VS55 consisting of an 8.4M solution containing 3.10M DMSO, 3.10M formamide and 2.21M 1,2-propanediol in EuroCollins solution at 4°C. Diluted VS55 (4°C) was added sequentially to achieve full strength VS55. The samples were rapidly cooled to -100°C in 2-methylbutane then transferred to vapor phase nitrogen for slower cooling and storage below -135°C for >24 h before testing (vitrification). Vitrified testes were slowly warmed to -100°C followed by rapid warming to melting. Each group had two replicates from different rats. All groups were compared histologically. Each testicle was measured metrically and with an orchidometer. Cellular morphology of seminiferous tubules, epididymis, vas deferens and

vessels from each testicle was assessed with H&E stains for nucleus and cytoplasm staining and Masson's trichrome stain for nuclei, collagen, and cytoplasm staining. PGP 9.5 immunohistochemical (IHC) staining was used to mark undifferentiated spermatogonia.
Results: Slight morphological alterations were observed in the experimental groups compared to the control, including testicle tubule tissue shrinkage in vitrified samples. Frozen tissue demonstrated greater tubule tissue shrinkage, minor disruption of the epididymal tissues and greater disruption of the endothelial layers of the blood vessels in the vascular pedicle. Arterial vasospasm present in all 4 groups. Undifferentiated spermatogonial cells were identified by PGP 9.5 IHC. 1-way ANOVA test showed statistically significantly lower number of cells in the three experimental groups compared to the control.
Conclusion: Each cryopreservation protocol tested adequately preserved the morphological integrity of whole testis organ in the rat model, but decreased PGP 9.5 expression among all cryopreserved groups indicates spermatogonial stress.

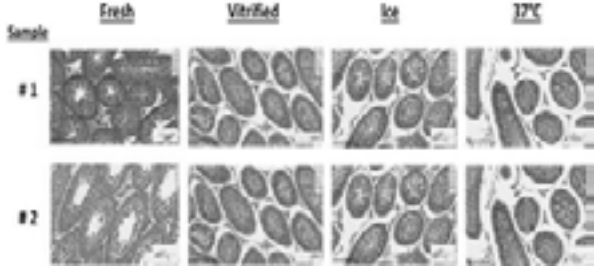
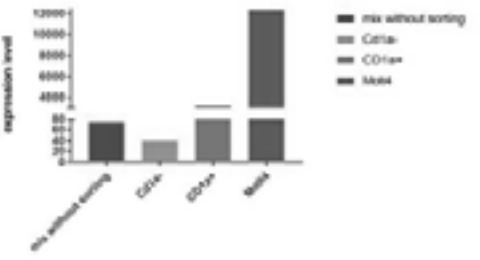


Figure. Seminiferous tubule H&E Staining
Funding: Institutional Internal Funding

Podium #20
PURGING OF MALIGNANT CELLS PRIOR TO SPEMRTAOGONIAL STEM CELL (SSC) AUTO TRANSPLANTATION TO RESTORE FERTILITY
Omar Abdelaal[1,2], Darren Hickerson[1], Julie Allickson[1], Anthony Atala[3,4], Hooman Sadri-Ardekani[3,4]
[1]Wake Forest Institute for Regenerative Medicine, [2]Department of Urology, Faculty of Medicine, Zagazig University, [3]Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, [4]Department of Urology, Wake Forest School of Medicine
Presented By: Hooman Sadri-Ardekani, MD, PhD

Introduction: The success in treating childhood cancer has dramatically increased over the past few decades. This leads to increase needs to figure out a method for fertility preservation for pediatric cancer patients, as many of the cancer therapies are gonadotoxic. Spermatogonial Stem Cell (SSC) cryopreservation before starting chemotherapy and transplant them later has been proposed as a method that has a promise for restoring fertility in childhood cancer survivors. One of the major concerns is the possibility of malignant cell contamination in testicular tissue biopsies, which could re-introduce cancer to the patient after complete cure. It is important to have a reliable detection and an effective purging system before applying for autologous SSC transplantation.
Methods: We have performed a study to co-culture human SSCs and human acute lymphoblastic leukemia cells (MOLT4 cells) in Stempro complete medium (specific medium for human SSCs) for multiple passages using different concentrations (0.05%, 0.5%, 5% and 50%) of MOLT4 cells. As testicular cells are adherent and MOLT4 cells are suspension, the culture was handled by discarding the old medium and washing the flasks with PBS and using fresh medium every other day to get rid of floating MOLT4 cells. Initially the sensitivity of digital PCR was tested by performing the different concentrations of MOLT4 mixed with testicular cells using CD1a primer as a specific

leukemia marker. Later, validated digital PCR was used to detect the presence of MOLT4 cells in each passage. This experiment was repeated with addition of a clinically acceptable **Fluorescence-Activated cell sorting** (FACS) before putting the cells in culture to add more purity. FACS was done by negative sorting for CD1a- cells.
Results: After three passages the presence of CD1a in digital PCR was very minimal (<0.05%) with no significant decrease in SSC presence in culture. When FACS was added, purity check after sorting showed 0.3% CD1a+ in the negatively sorted fraction. After putting these cells in culture, they started growing and level of CD1a expression by dPCR dropped to zero in 2 passages only.
Conclusion: The preliminary data of our purging technique showed successful purging of malignant contamination, either individually or combined with other methods i.e. FACS.
Funding: N/A



Podium #21
A CLINICALLY VALIDATED METHOD FOR DETECTING SPERMATOGONIAL STEM CELLS IN TESE NEGATIVE KLINEFELTER SYNDROME PATIENTS: A STEP TOWARD BIOLOGICAL PATERNITY
Nicholas Deebel, MD[1], Haleh Soltangoraee, MD[2], Karl Reynolds[3], Kimberly Stogner-Underwood, MD[4], Mohamad Sadeghi, Ph.D[2], Anthony Atala, MD[1], Hooman Sadri-Ardekani, MD, Ph.D[1]
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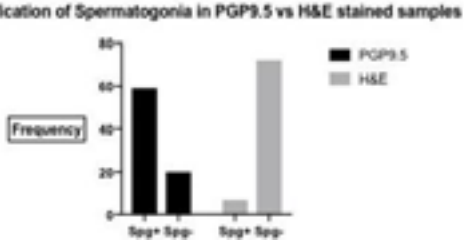
Presented By: Nicholas Deebel, MD

Introduction: Klinefelter Syndrome (KS) is defined by chromosomal aneuploidy (typically 47 XXY). The onset of puberty in KS patients is associated with progressive testicular fibrosis, loss of spermatogonial stem cells (SSC), and impaired fertility. More than 50% of KS patients will be negative for spermatozoa when they undergo testicular sperm extraction (TESE). Therefore, therapies utilizing SSCs have been explored. However, in order to assess the practicality of these therapies, developing a clinically validated method to detect SSCs and defining their prevalence in adult KS patients is first needed.
Methods: Klinefelter syndrome patients (n=79) underwent bilateral testicular biopsy as an initial effort to recover spermatozoa for IVF/ICSI. Control samples (n=12) were obtained from brain dead, non-Klinefelter Syndrome patients. The institution's IRB approved for a portion of the testicular tissue to be saved and paraffinized for future study. A dedicated genitourinary pathologist examined the H&E stained tissue for the presence of spermatozoa and spermatogonia. Additionally, an extra slide from each patient was stained in an automated, clinically validated system with PGP9.5 (UCHL1) antibody, a specific marker for undifferentiated spermatogonia in seminiferous tubules. The stained slides were scanned and analyzed with virtual microscopy software. In addition, clinical information such as age, karyotype, height, weight, average testicle size, and hormonal panel (LH, FSH, Testosterone) were collected.

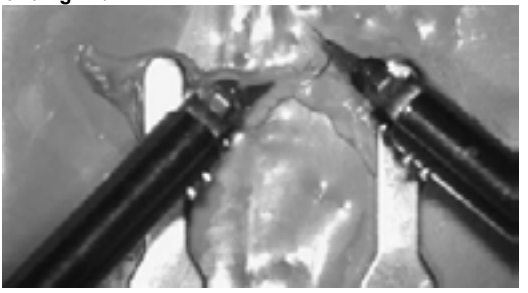
Results: PGP9.5 staining showed that 74.7% (n= 59) of the KS patients were positive for undifferentiated SSCs compared to 100% (n=12) in the control patients ($p<0.05$). When the same patients were analyzed with H&E and microscopic analysis by a dedicated pathologist, only 8.9% (n=7) of the patients were positive for spermatogonia ($p<0.0001$). Additionally, PGP 9.5 staining showed that 72.2% of the spermatozoa negative patients still had spermatogonia (n=52). Multivariate with linear regression showed no significant correlation between clinical variables and number of PGP9.5 positive tubules found on biopsy.
Conclusion: PGP9.5 immunostaining appears to be an effective way of identifying undifferentiated spermatogonia in KS patients. Despite the deterioration of testicular architecture, many patients remain positive for SSCs which could be harvested and used for future infertility therapy.
Funding: N/A



Podium #22
PROSPECTIVE CONTROL TRIAL OF VASOVASOSTOMY UTILIZING A NOVEL MICROSURGERY ROBOTIC PLATFORM VERSUS STANDARD MICROSURGERY
Sijo Parekattil, Associate Professor[1,2], George De Boccard, Professor[3], Ahmet Gudeloglu, Assistant Professor[4], Nahomy Calixte, Assistant Professor[1,2], Mohammed Etafy, Fellow[1], Richard Mendelson, Director of Research[5], Jamin Brahmbhatt, Assistant Professor[6,2]
[1]PUR Clinic, [2]University of Central Florida, Clermont, FL, [3]Clinique Générale Beaulieu, Geneva, Switzerland, [4]Hacettepe University, Ankara, Turkey, [5]Keiser University Graduate School, Fort Lauderdale, FL, [6]UR Clinic
Presented By: Sijo J. Parekattil, MD

Introduction: Current robotic-assisted platforms present some limitations in terms of the ability to perform microsurgical and super microsurgical tasks (reconstructive surgery on structures in the 0.3-0.8mm range). This study assesses the efficacy of performing vasal anastomosis utilizing a novel microsurgical robotic platform.
Methods: A prospective control study using three fellowship-trained microsurgeons on nine ovis aries (sheep)vas segments comparing standard manual microsurgery to robotic-assisted microsurgery using a novel teleoperated microsurgical robot(MMI SpA., Pisa, Italy) was performed. The ovis 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 surgeons performed 5 robotic and 4 manual microsurgical vasovasostomies. The surgeons received brief training on the robot to become familiarized with its functional features before carrying out the anastomoses. A double-layer anastomosis was performed using 9-0 nylon and 10-0 nylon sutures in each case. The net time (in seconds) for each suture placement and knot tie was measured. The number of suture breaks were recorded. The quality of the anastomosis was measured using a patency dye test and graded from 0 (no leak) to 5 (large extravasation).
Results: Five anastomoses were performed using the robotic system and four using manual microsurgery. All the anastomoses were successfully completed. The mean duration of micro-instrument suture ties using the robotic system was slower (p 0.03) than manual microsurgery. However, the learning curve with the robot indicated that

surgeons' robotic anastomosis times decreased rapidly and may be able to approach similar times to manual microsurgery if subject to a formal training program. There were no suture breaks using the robotic system, compared to five suture breaks using the microscope (p 0.02), indicating that the robotic micro-instruments provide good force control. There was no significant difference in the quality of the anastomosis between both techniques.
Conclusion: This study suggests that vasal reconstructive surgery may be a potential application for this novel microsurgical robotic platform with comparable outcomes and less suture breakage. Further evaluation and studies are warranted.
Funding: N/A



Podium #23
IMPACT OF EXPOSURE TO -ADRENERGIC RECEPTOR ANTAGONISTS ON PROSTATE CANCER INCIDENCE IN VETERANS
Jeff Goodwin, MD[1], David Preston, MD[2,1], Pedro Vera, PhD[2,3]
[1]University of Kentucky Department of Urology, [2]Department of Veteran's Affairs, [3]University Of Kentucky
Presented By: Jeff D. Goodwin, MD

Introduction: Chemoprevention of prostate cancer remains an elusive, but attractive -adrenoceptor antagonists induce apoptotic effects on prostate cancer cells, but conclusive large scale clinical confirmation of prostate cancer prevention is lacking. A single center study previously from our group demonstrated a reduced risk of prostate cancer (RR = 0.683) in the Veteran population treated with quinazoline-based -adrenoceptor antagonists. We queried the Department of Veterans Affairs Informative and Computing Infrastructure (VINCI) Database to further explore this relationship.
Methods: The VINCI Database was queried for male veterans aged 18-90 who received pre -adrenoceptor antagonists from 1999- - reductase inhibitors or testosterone replacement, long term steroid use, or with a diagnosis of hypogonadism or low testosterone, or who had prostate cancer within 1 year of study drug prescription were excluded. Veterans receiving alpha blockers were subdivided into two groups; a quinazoline group (i.e. terazosin/doxazosin) and a sulfonamide group (tamsulosin/silodosin) and matched 1:1 to Veterans of same age and race who never received these drugs and the incidence of prostate cancer was measured and compared in both groups.
Results: There were 289,651 Veterans in the quinazoline group and 119,907 in the sulfonamide group. There were no significant differences in age, race, prescription fills, or follow-up time. The quinazoline group demonstrated an increased incidence of prostate cancer (OR 1.35, 95% CI 1.311-1.381) and the sulfonamide group demonstrated a decreased incidence of prostate cancer (OR 0.797, 95% CI 0.761-0.836) when compared non-exposed Veterans. Differences in prostate cancer incidence between groups was statistically significant $p<0.00001$.
Conclusion: Veterans treated with quinazoline based alpha blockers demonstrated an increased incidence of prostate cancer compared to non-exposed Veterans. Veterans treated with sulfonamide based alpha blockers demonstrated a decreased incidence of

prostate cancer compared to non-exposed Veterans. Further prospective clinical research is indicated to verify these findings.
Funding: N/A

	Age	Follow-up	# of Prescription Refills	# Prostate Cancer Diagnosis	# No Prostate Cancer Diagnosis	Odds Ratio
Quinazoline Exposed	57.6 +/- 12.6 yr	14.1 +/- 4.6 yr	10.4 +/- 11.9	13,617	276,154	1.35 (95% CI 1.211-1.581)
Non-Exposed Cohort	59.4 +/- 12.8 yr	11.1 +/- 5.7 yr	NA	10,167	279,494	NA
Sulfonamide Exposed	58 +/- 10.3 yr	14.5 +/- 4.5 yr	13.8 +/- 12.7	3,251	116,650	0.797 (95% CI 0.761-0.836)
Non-Exposed Cohort	58.5 +/- 10.2 yr	11.5 +/- 5.6 yr	NA	4,049	115,858	NA

Podium #24
PUERTO RICAN MEN WITH NEWLY DIAGNOSED PROSTATE CANCER EXHIBIT A HIGH PREVALENCE OF HYPOGONADISM
Fernando Arroyo, MD, Ricardo Sanchez-Ortiz, MD
Robotic Urology and Oncology Institute and Division of Urology, University of Puerto Rico School of Medicine
Presented By: Fernando Arroyo

Introduction: Despite early detection practices comparable to the mainland United States and a similar prostate cancer (PCa) incidence, Puerto Rican men exhibit a higher PCa mortality which remains unexplained. Given the known association between aggressive prostate cancer and hypogonadism, we prospectively evaluated serum testosterone (T) levels in Puerto Rican men with newly diagnosed PCa.
Methods: Out of 161 consecutive patients who underwent radical prostatectomy between 5/14/18 and 3/18/2019, 113 men were identified with serum T levels. Patients who had received 5-alpha reductase inhibitors or androgen deprivation were excluded. Serum total T was compared to clinical and pathological parameters. SPSS was used for statistical analysis.
Results: Clinical and pathological characteristics included mean age: 59.9 years, mean serum PSA: 6.9 ng/ml, prostate volume: 47.9 cc, clinical stage: (51.3% T1c), biopsy grade groups: 1 (22.1%), 2 (41.6%), 3 (31%), 4 (4.4%), and 5 (0.9%), and pathologic stage (17.7% pT3a or T3b). Hypogonadism (T < 300 ng/ml) was present in 40% (44/113) of patients and 68% (77/113) of men had a T below 400 ng/ml. Mean and median preoperative serum T levels were 350 ng/ml and 339 ng/ml, respectively, with the following percentiles: 10th: 203.7 ng/ml, 25th: 254.3 ng/ml, 75th: 429.3 ng/ml, and 90th: 522.5 ng/ml. Patients with biopsy grade groups 4 or 5 exhibited lower T levels (299.5 ng/ml) compared with grade groups 1-3 (353.1 ng/ml) and men with locally advanced disease (pT3a or pT3b) also had a tendency for lower T levels (315.2 ng/ml) versus those with pT2 disease (357 ng/ml), but this did not reach statistical significance (p=0.16).
Conclusion: Puerto Rican men with newly diagnosed PCa exhibited a 40% of prevalence of hypogonadism (T < 300) (68% with a mean T < 400 ng/ml) with a trend towards high grade disease and extraprostatic extension. Whether earlier stages and grades of disease can be diagnosed by adjusting PSA for serum T levels in this population deserves further study.
Funding: N/A

Podium #25

MRI-TARGETED, SYSTEMATIC, OR COMBINED BIOPSY FOR PROSTATE CANCER DIAGNOSIS

Michael Ahdoot[1], Andrew Wilbur[2], Sarah Reese[3], Amir Lebastchi[1], Sherif Mehralivand[4], Patrick Gomella[1], Sandeep Gurram[1], Paul Pinsky[5], Howard Parnes[5], W. Marston Linehan[6], Maria Merino[7], Peter Choyke[8], Joanna Shih[8], Baris Turkbey[9], Bradford Wood[10], Peter Pinto[11]

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Presented By: Michael A. Ahdoot, MD

Introduction: Systematic prostate biopsy is associated with substantial diagnostic inaccuracy contributing to both over and under-diagnosis. The addition of MRI-targeted biopsy may reduce cancer misclassification among men with MRI-visible prostate lesions. However, consensus regarding the optimal prostate biopsy strategy has not been reached.

Methods: Men with MRI-visible prostate lesions underwent both systematic and targeted prostate biopsies. Cancer detection rates by each method and in combination were assessed. Among men who proceeded to prostatectomy, rates of upgrading and down-grading on whole-mount histopathology by each biopsy method were compared.

Results: A total of 2103 men underwent MRI-targeted and systematic biopsies of whom 1312 (62.4%) were diagnosed with cancer. Of these men, 404 (19.2%) underwent prostatectomy. Standard biopsy diagnosed 1104 (52.5%) cases. Addition of the MRI-targeted to systematic biopsy led to 208 (10.8%) more cancer diagnoses and 458 (21.8%) men being reclassified to a higher risk group. Among the 466 men diagnosed with GG 3 on combined biopsy, if only MRI-target biopsy was performed, 8.8% of GG 3 cancers would be misclassified as GG 2. Among the men who underwent prostatectomy, the lowest rate of upgrading on whole-mount histopathology from GG 1-2 to GG 3 was seen using combined biopsy compared to MRI-targeted or systematic alone (3.5%, 8.7%, 16.8%, respectively).

Conclusion: Among patients with MRI-visible lesions, combined biopsy led to an increase in prostate cancer diagnoses and the detection of more clinically significant cancer. However, the use of MRI-targeted biopsy in isolation underestimated some patient's histologic grade. Following prostatectomy, the rate of upgrading to GG 3 on whole-mount histopathology was substantially lower following combined biopsy.

Intramural NIH funding

Podium #26

WHEN CAN WE SKIP SYSTEMATIC PROSTATE BIOPSIES?

Andrew Wilbur[1], Michael Ahdoot[2], Amir Lebastchi[2], Sherif Mehralivand[3], Patrick Gomella[2], Baris Turkbey[4], Bradford Wood[5], Peter Pinto[6]

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Presented By: Michael A. Ahdoot, MD

Introduction: Multiple recent studies have suggested combined MRI-targeted fusion and 12-core systematic biopsies improve prostate cancer detection. However, increasing the number of biopsy cores increases rates of urinary and infectious complications. In this

study, we sought to determine if patients with high-risk prostate MRI lesions (PIRADS 5) can safely forego the systematic biopsy in favor of the MRI-targeted biopsy alone.
Methods: Between 2015 and 2019, patients enrolled in a prospective trial evaluating the use of MRI-targeted fusion biopsy. All patients with MRI visible lesions underwent MRI-targeted and systematic biopsies during the same setting for prostate cancer diagnosis. The highest Gleason Grade(GG) cancer detected by each modality was recorded and stratified by MRI PIRADS v2 score.
Results: In total, 723 men with PIRADS 2 lesions underwent prostate biopsy. A total of 51(7.1%), 87(12.0%), 346(47.9%), and 239(33.1%) biopsied men had a lesion with a greatest PIRADS score of 2, 3, 4, and 5, respectively. Of these men, 185(25.6%) were biopsy naïve. Among patients whose greatest lesion was PIRADS 5(n=239), 226(94.6%) cancer diagnoses were made. Of these, 217(96.0%) were made by MRI-targeted biopsy, as opposed to 194(85.8%) by systematic biopsy. Of the 9 cancers missed by MRI-targeted biopsy, zero were clinically significant(GG 3). Additionally, MRI-targeted biopsy upgraded 39(16.3%) clinically significant cancers which were either missed or graded as clinically insignificant by systematic biopsy. Conversely, systematic biopsy was responsible for upgrading 2(0.8%) patients, both of which were upgrades from GG=2 on MRI-targeted biopsy to GG=3 on systematic biopsy. Men with PIRADS scores of 2, 3, and 4 had greater rates of clinically significant cancer misses by MRI-targeted biopsy alone. Of these groups, 1(2.0%), 3(3.5%), and 12(3.5%) cases of clinically significant cancer were missed by MRI-targeted biopsy, respectively, and 1(2.0%), 2(2.3%), and 26(7.5%) cases were missed by systematic biopsy, respectively. Combination biopsy of these patients had a greater likelihood of detecting clinically significant cancer than either targeted or systematic biopsy alone.
Conclusion: For men with PIRADS 5 lesions, omission of systematic biopsies in favor of MRI-targeted biopsy alone leads to a marginal (<1%) decline in cancer diagnosis. However, for PIRADS 2-4 lesions, systematic biopsy adds significant diagnostic value and should be considered in combination with MRI-targeted biopsy.
Intramural NIH funding

Podium #27
GENOMIC HETEROGENEITY IN TISSUE-BASED PROGNOSTIC SIGNATURES FROM PROSTATE BIOPSIES; RESULTS FROM TWO PROSPECTIVE TRIALS
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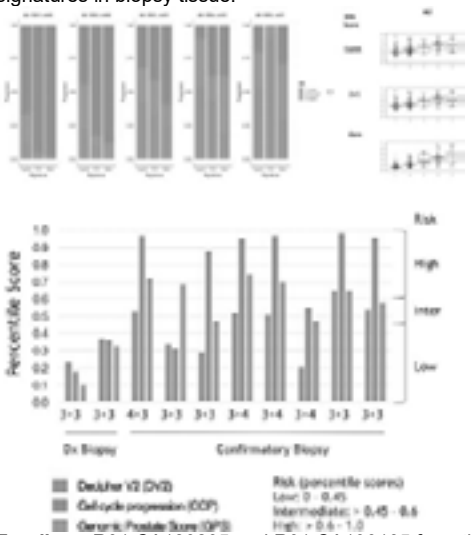
Presented By: Nachiketh Soodana-Prakash, MD, MS

Introduction: Tissue based prognostic signatures have been used in various stages of prostate cancer, including biopsy tissue from men who are deciding between active surveillance versus treatment. We evaluated the performance of tissue based prognostic signatures on biopsy tissue from two ongoing prospective trials in men with prostate cancer at the University of Miami.
Methods: The Miami Active Surveillance Trial (MAST) enrolls low–intermediate risk men who undergo an MRI and annual biopsy for three years and the BlastEM trial includes intermediate-high-risk men who undergo targeted biopsy at the time of fiducial marker placement to assess for dose escalation during radiotherapy. This study reports on preliminary results from both trials on men whose biopsy cores were sequenced at GenomeDx, and evaluated for three commercially available gene signatures (GenomeDx Decipher Genomic classifier, Oncotype Dx Genomic Prostate Score, and Myriad Prolaris Cell Cycle Progression Score). The biopsy cores from both trials represent either the diagnostic biopsy or a subsequent biopsy done within 12 months of diagnosis.
Results: From 78 men (MAST n=46 and BlastEM n=32), 231 biopsy cores were sent to GenomeDX for genomic sequencing. Among them, 40 had Grade Group 1, 15 had grade Group 2, 10 had Grade Group 3 and 13 had Grade group 4 and 5 prostate cancer. We found that for each signature there was a trend toward higher scores with higher grade

groups, however each signature displayed a significant degree of variation within each grade group ($p<0.001$)(Figure 1). When assessing genomic scores from different cores we found significant variability (figure 1)with the level of genomic risk within each biopsy session changing by 25-62% depending on which core was sequenced and which signature was used. When restricting to MAST, which includes active surveillance patients whose biopsy tissue these tests are currently being used, we found that level of genomic risk changed in 10-57% of cases depending on which core was sequenced and which signature was used.

Conclusion: We assessed the performance of three commercially available genomic prognostic markers and found a significant degree of genomic heterogeneity between biopsy cores This may have implications when considering the reliability of these signatures in biopsy tissue.



Funding: R01 CA189295 and R01 CA190105 from the National Cancer Institute to A.P. and the Stanley J Glaser Award (UM SJG 2017-28) to S.P

Podium #28

WHOLE TRANSCRIPTOME RNA INTERROGATION OF POST-DRE URINE TO ENHANCE PROSTATE CANCER DETECTION

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Emory University
Presented By: Martin G. Sanda, MD

Introduction: Prostate cancer detection is hampered by limited specificity, of serum PSA testing, in predicting aggressive cancers (ie Gleason Grade Group 2 or higher) at high sensitivity. Numerous prior studies have shown that the specificity of PSA in predicting aggressive cancers is below 25%, and addition of related serum biomarkers (eg free PSA, proPSA, or KLK2) and combination with clinical factors (eg the Prostate Cancer Risk Calculator) has not increased specificity beyond 40%. Having recently shown the feasibility of analyzing whole-genome RNA panels in urinary microvesicles, we sought to determine if interrogating the genome-wide RNA in urinary microvesicles would identify a multiplex RNA panel to enhance specificity of detecting aggressive prostate cancer.

Methods: Post-DRE urine from 213 patients was processed to isolate RNA from prostate-derived microvesicles, and whole transcriptome expression was analyzed using

a clinical Affymetrix chip. Tissue-urine paired analyses in a pilot subset showed over 4800 RNA transcripts from prostate cancer as detectable in post-DRE urine. Machine-learning software interrogated association of RNA expression in post-DRE urine with no cancer, Grade Group 1 cancer, and aggressive cancer (Grade Group 2 or higher) in a training set. Multivariable models were constructed to predict aggressive prostate cancer based on multiplex RNA expression. Impact of the RNA models on prostate cancer detection was evaluated by inspecting changes in specificity at high sensitivity in predicting aggressive cancer.
Results: Participating subjects had a median age of 62 years and median BMI of 28. Cohort demographics included 63% Caucasian, 30% African-American and 7% of other racial background. Clinical diagnoses included 14% screen-negative normal controls, 12% men with no cancer on prostate biopsy, 36% with cancer on biopsy, and 38% with aggressive cancer at prostatectomy. Median PSA prior to biopsy was 5.5 (Range: 0-167). In the training cohort, at 95% sensitivity, PSA with the prostate cancer risk calculator led to 39% specificity; the addition of whole transcriptome-derived urinary RNA models that were normalized (n=34 genes) or not normalized (n=599 genes) enhanced specificity to 56% and 52%, respectively.
Conclusion: Our findings demonstrate feasibility of whole transcriptome RNA measurement in post-DRE urine, and (pending validation) suggest that this technique has the potential for improving prostate cancer detection.
Funding: NIH U01 113913

Podium #29
CHOICE OF RADICAL PROSTATECTOMY VERSUS RADIATION THERAPY FOR ACTIVE SURVEILLANCE PATIENTS: RESULTS FROM THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE
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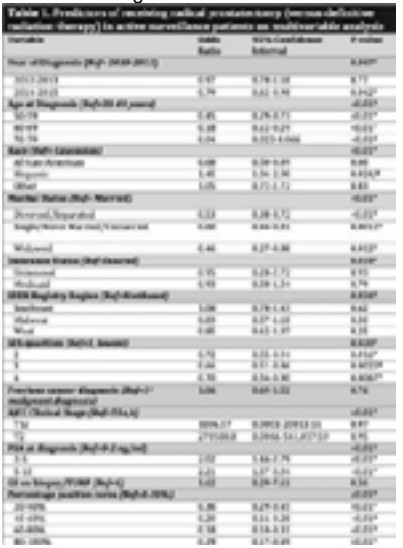
Presented By: Rashid Sayyid, MD, MSc

Introduction: A significant proportion of prostate cancer (PCa) patients on active surveillance (AS) will ultimately undergo treatment for their disease. Factors that influence patients' decision-making process with regards to choice of treatment remain unclear. Our objective was to determine predictors of undergoing radical prostatectomy (RP) versus definitive radiation therapy (XRT) in AS patients deciding to undergo therapy.
Materials: The Surveillance, Epidemiology, and End Results (SEER) Prostate Active Surveillance/Watchful Waiting database was used to identify patients diagnosed with very low- or low-risk PCa, between 2010 and 2015, initially managed with AS subsequently underwent RP or definitive XRT. Our primary outcome was undergoing RP versus definitive XRT. Univariable and multivariable logistic regression analyses were used to evaluate demographic, socioeconomic, and oncologic factors as potential predictors of treatment modality chosen. $p<0.05$ denoted statistical significance.
Results: Our study included 21,278 patients. Median patient age was 63.0 years (Interquartile Range 58.0-68.0). 16.6% of patients were African-American and 9.1% were Hispanic. 69.0% were married at time of diagnosis. 5.9% of patients had a known previous, distinct cancer diagnosis at time of PCa diagnosis. Median prostate-specific antigen (PSA) level was 5.6 ng/ml (IQR 4.5-7.0). 99.6% had a Gleason Score 6 on prostate biopsy, with the remaining Gleason Score 5 or less. 3,873 (18.2%) and 17,405 (81.8%) underwent RP and definitive XRT, respectively. On multivariable regression analysis (Table 1), patients opting for RP were more likely to be diagnosed in 2010-2011 (OR 1.27 versus 2014-2015, p 0.04), younger (OR 25.0 for age 30-49 versus 70-79, $p<0.01$), Hispanic (OR 1.45, p 0.02), married (OR 1.89 versus divorced/separated,

p<0.01), lower socioeconomic status (OR 1.44 for lowest versus highest quartile, p<0.01), have higher PSA level at diagnosis (OR 2.21 for PSA 5-10 versus 0-2 ng/ml, p<0.01), and lower core involvement (OR 3.44 for 0-20% versus 80-100%, p<0.01). A previous, distinct cancer diagnosis did not influence treatment decision (p 0.76).
Conclusion: The majority of AS patients eventually receiving treatment opt for XRT, with multiple demographic, socioeconomic and oncologic factors influencing patients' decision-making process. These results highlight the importance of patient education regarding the efficacy and side effect profile of these procedures to ensure informed decision-making.



Funding: N/A

Podium #30
ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY WITH MINIMAL APICAL DISSECTION AND LATERAL PROSTATIC FASCIA PRESERVATION IMPROVES EARLY POSTOPERATIVE FUNCTIONAL RECOVERY
Fikret Onol, Marcio Moschovas, Seetharam Bhat, Travis Rogers, Shannon Roof, Vipul Patel
AdventHealth Global Robotics Institute, Celebration, FL
Presented By: Fikret Fatih Onol, MD, FEBU

Introduction: Achieving early continence and potency after robotic-assisted laparoscopic prostatectomy (RALP) remains a challenge. In this study, we compared the outcomes of our new minimal apical dissection and lateral prostatic fascia preservation (MAD/LPFP) technique with our conventional RALP technique in early functional recovery.
Methods: Between April 2017 and March 2019, a total of 2,168 patients underwent RALP by a single surgeon with >10,000 case experience. One hundred and four of them received MAD/LPFP which maximized preservation of periurethral tissue around the urethral stump and avoided classic incision of the endopelvic fascia that exposes levator ani fibers. A control group was identified with propensity score (PS)-matching based on age, body mass index, Charlson comorbidity index, preoperative SHIM and AUA symptom scores, gland size, preoperative PSA, Gleason score, clinical stage, and D'Amico risk group. The two groups were compared for clinical and functional outcomes at postoperative 1 and 6 weeks, and at 3 and 6 months. Kaplan-Meier curves and regression models were used to identify survival estimations and their predictors.

Results: One hundred patients were matched in each group. The MAD/LPFP technique resulted in shorter operative times and higher rates of bilateral full nerve sparing (Table 1). Postoperative complication rates were comparable between the two groups. Pathological outcomes including positive surgical margin (PSM) rate and locations were not significantly different between MAD/LPFP and conventional RALP groups (Table 1). Apical PSM rates were 6% and 11%, respectively (p>0.05). Postoperative continence (no pads/day) rates were significantly higher in the MAD/LPFP group at all time points except postoperative 6 months (Table 1). Mean time to achieve continence was 32 days in the MAD/LPFP vs. 87 days in the c-RALP group (p<0.001). Potency recovery rates were significantly higher in the MAD/LPFP group at all postoperative time points. The mean time to potency was 40 days in the MAD/LPFP and 148 days in the c-RALP group (p<0.001). Multivariable analyses revealed surgical technique and patient age as the most important factors predicting early functional recovery.
Conclusion: The present data regarding modification of our conventional technique after 10,000 RALP cases suggests that apical anatomy and lateral prostatic fascia preservation are crucial factors related to earlier continence and potency recovery.
Funding: N/A

Podium #31
COMPARATIVE ANALYSIS OF OUTCOMES FOLLOWING ROBOT-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP) OUTCOMES BEFORE AND AFTER THE USPSTF RECOMMENDATION IN 2012 ON PSA SCREENING
Seetharam Bhat Bhat, Fellow, Fikret Onol, Fellow, Marcio Moschovas, Fellow, Travis Rogers, Fellow, Cathy Jenson, Fellow, Vipul Patel, Fellow
Global Robotics Institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

Introduction: US Preventive Services Task Force (USPSTF)'s recommendation against PSA-based screening has resulted in a change in practice pattern of patients receiving

robot assisted radical prostatectomy (RALP). We evaluated the possible influence of these changes on surgicaL technique, trifecta and pentafecta outcomes following RALP.
Methods: We retrospectively analyzed all men that underwent RALP between 2002 to 2018 with minimum 6 months followup from a prospectively collected IRB approved database. Patients were sub grouped based on degree of nerve sparing. Subgroups were analyzed for differences in clinical parameters, trifecta and pentafecta rates before and after USPSTF's recommendation by using Chi square test.
Results: 7268 patients were available for analysis. Mean preoperative PSA increased from 6.0 to 7.41 ng/ml between the two subgroups. After the USPSTF recommendation, pT3 disease undergoing Partial Nerve Sparing (PNS) and full nerve sparing (FNS) increased by 16% and 6%. respectively. In patients with FNS, potency rate decreased from 79.7% to 73.7% without significant change in trifecta rates before and after 2012 (70.6% vs. 67.7%, p=0.074, Table 1). There was a small but statistically significant decrease in pentafecta rates from 61.8% to 57.5% (p=0.012, Table 1). In patients with PNS, PSM, potency and continence rates decreased significantly after USPSFT's recommendation (Table 1). This resulted in a significant decrease in trifecta rate from 46.8% to 33 %, and in pentafecta rate from 40% to 26.2%.
Conclusion: After USPSTF recommendation, our practice has an increase in high grade and high risk disease. There has been a trend towards decreased amount of Full NS and an increase in PNS. In patients undergoing FNS, there was no significant change in outcomes, signifying equivalent quality of NS. However, in patient with PNS , potency, trifecta and pentafecta became worse due to likely increase in volume of disease and more aggressive PNS.
Funding: N/A

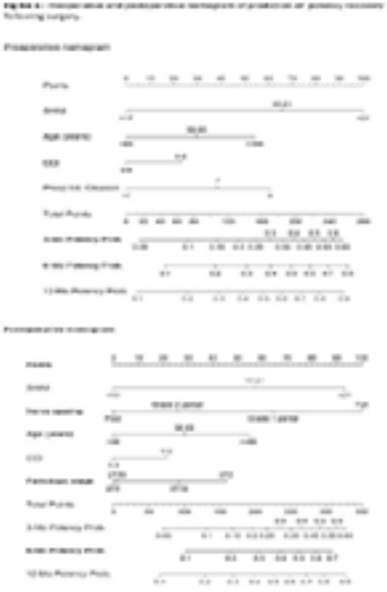
Table No 1: - Comparison of patient outcomes with respect to nerve sparing before and after 2012

Parameters	Till Dec. 2012 (n= 3617)		From January 2013 (n=3651)		P value	
	PNS	FNS	PNS	FNS	PNS	FNS
PSM	365(10)	233(13.5)	443(21.5)	190(13.5)	< 0.01	0.147
Potency	861(58.8)	1587(79.7)	836(60.7)	1838(75.7)	< 0.01	< 001
Continence	1541(94)	1908(95.8)	1754(85.4)	2319(94)	<.001	0.004
BCR	246(7.7)	154 (7.7)	214(16.3)	56(4)	<.001	<.001
PSA persistence	87(5.3)	28(1)	135(6.6)	12(1)		
Trifecta	766(46.8)	1405(70.6)	626(33)	947(67.7)	< 0.01	0.004
Pentafecta	654(40)	1231(61.8)	538(26.2)	805(57.5)	< 0.01	0.012
Total	1639	1991	2050	1399		

Podium #32
A PREDICTIVE PRE AND POST-OPERATIVE NOMOGRAM FOR POST-OPERATIVE POTENCY RECOVERY
Seetharam Bhat Kulthe Ramesh, Fellow, Fikret Onol, Fellow, Marcio Moschovas, Fellow, Travis Rogers, Fellow, Cathy Jenson, Coordinator, Marco Sandri, Statistician, Vipul Patel, Director
Global Robotics Institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

Introduction: Potency rates reported in the literature vary from 54% to 90% at 12 months and 63% to 94% at 24 months respectively. Age, preoperative erectile function (EF), and the amount of nerves spared and these have consistently been associated with potency outcomes following RALP(1–3). Patient comorbidities, especially diabetes, cancer burden, and prostate size have also been listed as factors that can influence potency. (4) Risk stratified approaches have been described for the selection of candidates for nerve-sparing. (1,5).In this study, we proposed a preoperative and post-operative nomogram to predict post-operative potency recovery following RALP.

Methods: Data from 9208 patients with minimum of 12 months follow up from 2008 to 2018 from an IRB approved database were available for analysis, and patients undergoing salvage radical prostatectomy were further excluded from this study. Predictive covariables for preoperative and post-operative nomograms were selected using the survival random forest plot. Cox- regression model was used to identify covariates that significantly affect potency. C- index was used to measure the goodness of fit for survival outcomes in the cox regression model. This was then used to develop a preoperative and post-operative predictive nomogram for potency recovery at 3,6 and 12 months. ROC curves were used to analyze the performance of the predictive model.
Results: Overall 9208 patients entered the analysis. 4994(54.2%) were potent post-operatively irrespective of SHIM, age and nerve-sparing technique used. The mean days to potency is 183.36(SD – 239.42). Cox regression analysis of preoperative and postoperative factors is given in Table No 1. Fig 1& 2 show the pre-operative and post-operative nomogram respectively. The AUC for ROC in the preoperative model at 3,6 and 12 months were .747,.751 and .765 respectively. The AUC for ROC in the Post-operative model at 3,6 and 12 months were .764,.769 and .785 respectively.
Conclusion: The above nomograms help us to predict with good accuracy the probability of potency recovery at 3, 6- and 12-months following surgery taking into consideration preoperative and postoperative factors. This is a novel tool for the caregiver to predict realistic expectation of potency outcomes to the patients, while preoperative and immediate post-operative counseling.
Funding: N/A



Podium #33

RADIOTHERAPY AFTER RADICAL PROSTATECTOMY: EFFECT OF TIMING OF POST-PROSTATECTOMY RADIATION ON FUNCTIONAL OUTCOMES

Heather Huelster, MD[1], Aaron Laviana, MD[1], Tatsuki Koyama, PhD[1], Zhiguo Zhao, PhD[1], Li-Ching Huang, PhD[1], Karen Hoffman, MD, MHSc[2], Ralph Conwill, BS[3], David Penson, MD, MPH[1], Daniel Barocas, MD, MPH[1]
[1]Vanderbilt University Medical Center, [2]University of Texas MD Anderson Cancer Center, [3]Vanderbilt Ingram Cancer Center
Presented By: Heather L. Huelster, MD

Introduction: The effect of timing of post-prostatectomy adjuvant or salvage radiotherapy on patient-reported sexual-, urinary-, and bowel-related functional outcomes is controversial. This study seeks to compare functional outcomes after radical prostatectomy (RP) and post-prostatectomy radiation as well as elucidate the timing of radiation to allow optimal recovery of function after prostatectomy.
Methods: The Comparative Effectiveness Analysis of Surgery and Radiation (CEASAR) study is a prospective, population-based, observational study of men with localized prostate cancer. Patient-reported functional outcomes were measured using the 26-item Expanded Prostate Index Composite (EPIC-26) at baseline and at 6, 12, 36, and 60 months after enrollment. Functional domain scores and changes in outcomes from baseline compared by timing of radiation after prostatectomy were evaluated using continuous and comparative multivariable and linear regression models.
Results: Among 1482 CEASAR participants initially treated with radical prostatectomy for clinically localized prostate cancer, 11.5% (*N*=170) went on to receive adjuvant (*N*=57) or salvage (*N*=113) external beam radiotherapy. Compared to men treated with RP alone in an adjusted linear model, salvage radiation was associated with significantly worse domain scores for sexual function (-11.1, 95%CI 5.3-17.0, p<0.001), incontinence (-7.6, 95%CI 1.6-13.6, p=0.014), urinary irritation (-6.1, 95%CI 2.4-9.7, p=0.001), bowel irritation (-4.5, 95%CI 1.7-7.4, p=0.002), and hormonal function (-3.3, 95%CI 0.6-6.0, p=0.017). Adjuvant radiation was associated with worse incontinence (-11.9, 95%CI 3.1-20.7, p=0.008), urinary irritation (-5.9, 95%CI 0.6-11.2, p=0.030), and hormonal function (-7.3, 95%CI 1.0-13.6, p=0.023) domain scores compared to RP alone at 5 years of follow up. On multivariable regression analysis, time from surgery to radiation was associated with a significant effect on change in sexual domain score from post-RP baseline (-5.3, 95%CI -9.5 to 20.0, p=0.016) with this effect most mitigated for radiation administered 24 months after RP.
Conclusion: Post-prostatectomy radiation has a significant effect on EPIC-26 sexual, urinary, and bowel function domain scores.

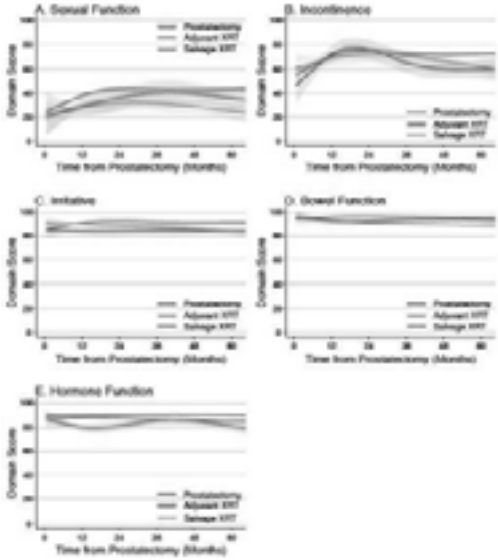


Figure 1. Unadjusted trajectory plot of EPIC-26 scores for a) sexual function, b) incontinence, c) urinary irritative, d) bowel function, e) hormonal function domains for men undergoing RP, RP with adjuvant radiation, and RP with salvage radiation over time. (Median time from RP to adjuvant radiation 7.3 months; from RP to salvage radiation 28.5 months).

Funding: N/A

Podium #34

THE ROLE OF BMI ON HOSPITAL READMISSION AFTER ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP)

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Presented By: Ethan L. Matz, MD

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 Southeastern United States. Patient factors such as increased BMI can affect quality metrics like hospital readmission. Utilizing the National Surgical Quality Improvement Program Database (NSQIP), we sought to determine the relationship of BMI and readmission after Robot-assisted Laparoscopic Prostatectomy (RALP).
Materials: Center for Disease Control (CDC) classified obesity in a three-tiered manner based on Body Mass Index (BMI): I (30-34.9), II (34-39.9) and III (>40). Data for surgery years 2007-2017 were downloaded from the NSQIP website and all records with Current Procedural Terminology (CPT) code 55866 (laparoscopic prostatectomy) were selected for inclusion. Association between BMI class and year of surgery was assessed using chi-square tests. Association between BMI (as a continuous measure) and readmission within 30 days was examined using logistic regression.
Results: A total of 49,238 patients over 10 years (2007-2017) were included in the final analysis. Mean BMI for all years ranged from 28.5 to 29.2. From 2007 to 2017 the proportion of patients with BMI 30 kg/m2who underwent RALP increased from 32% in 2007 to 38% (P <0.0001). Risk of hospital readmission also increased as BMI increased (OR 1.16 per standard deviation increase in BMI; 95% CI 1.11 - 1.21; P<0.0001).

Increasing severity of BMI (Class I, II and III) corresponded to an increase in the odds ratio for readmission (Table 1).
Conclusion: Over a span of 10 years, an increasing number of patients undergoing RALP have a BMI > 30. Moreover, an increasing number of patients with a greater degree of obesity (Class II and III) was found. The consequence of this increasing proportion of patients with BMI > 30 is the effect on patient outcomes, namely hospital readmission. Patients who are obese have a higher risk of hospital readmission and urologists are increasingly operating on more obese patients.
Funding: NA

Effect	Estimate	95% Confidence Limits	
Class I vs. BMI <30	1.112	1.045	1.184
Class II vs. BMI <30	1.257	1.142	1.384
Class III vs. BMI <30	1.731	1.486	2.015

Podium #35
MICRORNA AND MRNA EXPRESSION PROFILES DIFFERENTIATE INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME PATIENT SUBGROUPS BASED ON ANESTHETIC BLADDER CAPACITY AND HUNNERS LESION
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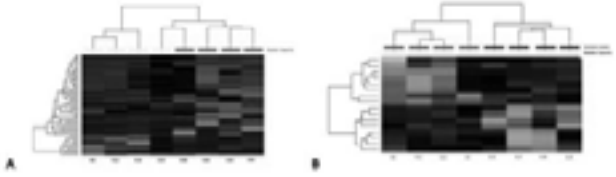
Presented By: Tyler Lynne Overholt, MD

Introduction: Interstitial cystitis/bladder pain syndrome (IC/BPS) is a chronic, heterogeneous pain condition of unknown etiology. Identifying IC/BPS patient subgroups would be clinically useful for addressing management challenges.
Methods: Using anesthetic bladder capacity (BC) as the clinical delineator, we previously investigated gene expression differences in bladder tissue from IC/BPS patients. We found samples from low BC (400cc) patients had significantly different expression profiles than non-low BC (>400cc) samples. Herein, we extend these findings to include microRNA analysis. Bladder samples were selected from our repository of 18-80 y/o IC/BPS patient tissues representing three clinical subgroups: **Group 1:**low BC; **Group 2:**low BC, with Hunners lesion (HL+); **Group 3**: non-low BC. Tissues were obtained during hydrodistention via cystoscopically-guided biopsy. Total RNA was isolated via standard protocols and assayed on whole genome *and* miRNA expression arrays. Comparisons of differential mRNA and miRNA expression were made between low vs non-low BC, and HL+ vs HL- groups.
Results: Low vs non-low BC comparison identified 744 differentially expressed transcripts (DETs; $p<0.01$) and 54 differentially expressed miRNAs ($p<0.05$). 11 miRNAs mapped to 40 genes with experimentally demonstrated function (EDF). Hierarchical clustering of miRNA revealed two primary clusters (Figure 1A). *Cluster A* consisted entirely of low BC patients. *Cluster B* contained all 4 non-low BC patients and 1 low BC patient. The HL+ vs HL- comparison identified 917 DETs ($p<0.01$) and 16 miRNAs ($p<0.05$); 4 miRNAs mapped to 13 genes with EDF. Hierarchical clustering of differentially expressed miRNAs also revealed two primary clusters (Figure 1B) which provided a clear separation of the samples based on Hunners lesion status.
Conclusion: When comparing low vs non-low BC groups, upregulated genes were significantly over-represented in cell proliferation and inflammation, suggesting these may be underlying factors for the low BC phenotype. In addition to over-representation of these pathways in the HL+ to HL- comparison, upregulated genes were also over-represented in oxidation-reduction reactions, suggesting that in addition to inflammation and abnormal cell proliferation, oxidative stress may underlie the HL+ phenotype. The

present study has identified significant molecular differences in IC/BPS associated with the low vs non-low BC IC/BPS phenotype, and additional molecular findings that further define the HL+ phenotype.

Figure 1. Hierarchical clustering of miRNA expression profiles in IC/BPS patient bladder biopsy samples. **A:** Low vs non-low bladder capacity comparison. **B:** Hunners lesion positive vs Hunners lesion negative comparison. Within the heatmap: Red = higher gene expression, Green = lower gene expression. Across the top: Yellow = low (≤400cc) BC, Red = non-low (>400cc) BC, Blue = Hunners lesion negative, Purple = Hunners lesion positive.



Funding: NIH R21 DK106554-01 (SJW)

Podium #36
SEVERITY OF LOWER URINARY TRACT SYMPTOMS ASSOCIATED WITH DIABETES DURATION

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Presented By: Aman Sarihyan Bali, BA

Introduction: Lower urinary tract symptoms (LUTS) are a prominent manifestation of diabetic bladder dysfunction (DBD). However, existing data regarding the impact of diabetes mellitus (DM) duration on voiding symptoms is sparse, outdated, and conflicting. Using the most current, nationally-representative data, we examined the association between duration of DM and the prevalence and severity of LUTS in the United States.
Methods: We used the 2011 to 2016 cycles of the National Health and Nutrition Exam Survey to perform a cross-sectional analysis of diabetic adults between 40 and 79 years of age. Patient-reported questionnaire responses were used to identify duration of DM and LUTS including general incontinence, stress urinary incontinence, urge urinary incontinence (UUI), and nocturia. Symptom severity was categorized by self-reported frequency. Adjusted multivariable logistic regression with survey weighting was used to test the hypothesis that duration of DM is associated with 4 outcomes: overall LUTS, severe irritative LUTS (UUI or nocturia), severe nocturia, and severe UUI.
Results: Of 1,476 diabetic individuals included in the study cohort, 981 met criteria for LUTS. Those with LUTS were on average older (mean age [95% CI] 61.3 [60.6, 62] vs 58.0 [56.9, 59.2]; $p<0.0001$), had higher body mass index (mean [95% CI] 34.0 [33.3, 34.6] vs 32.0 [31.2, 32.8]; $p=0.0002$), and had a higher proportion with more than 5 doctor visits per year (16.4% [12.4, 20.4] vs 6.4%[3.4, 9.3]; $p<0.0001$) than those without LUTS. On multivariable regression analysis, among the subgroup of diabetic females, the odds of severe UUI increased by 6% (OR=1.06 [1.02, 1.1], $p=0.008$) for each additional year of DM duration. Smoking was associated with increased risk of severe UUI in both male and female diabetics (OR = 5.27 [1.73, 16.04], $p=0.004$ and OR = 2.89 [1.41, 5.95], $p=0.005$, respectively).
Conclusion: In this exploratory analysis, females with diabetes were at an increased risk of severe UUI, with a 6% increased risk per additional year of DM. Although this finding is limited to females, the impact of DBD may extend to males as well in more subtle ways. Given an aging population and rising prevalence of DM, more work is needed to address the underlying mechanisms of DBD.
Funding: N/A

Podium #37

CONGENITAL UROLOGY IN ADULTHOOD: A SINGLE-INSTITUTION EXPERIENCE OF 128 PATIENTS

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Presented By: Charlotte Wu, MD

Introduction*:* The full scope of clinical and surgical problems faced by adult patients with congenital urological conditions remains poorly defined. There is little evidence to guide clinical decision-making, and this poses a challenge for patients and practitioners alike. We examined adult patients with spina bifida (SB), bladder exstrophy (BE), and posterior urethral valves (PUV) and describe clinical and surgical problems that prevail during adult urologic follow-up stratified by underlying diagnosis and by primary pediatric bladder management method.

Methods: We identified patients by ICD codes for SB, PUV, and BE seen between 2008-2019 at our tertiary referral academic center and performed retrospective review. Descriptive statistics were used to characterize patients, their referral reasons, and the clinical and surgical problems they faced in adulthood.

Results*:* We identified 128 patients with average follow up of 112 months and performed retrospective review. Patients were 48% male. Average age at referral was 27.6 (17-76) years. Referral chief complaints are summarized in Table 1. Pediatric bladder management could be categorized into non-continent diversion (17.7%), continent diversion (49.2%), or native bladder with catheterization (33.1%). 23% of patients required major urologic surgery during adult follow up, which altered bladder management. Other surgical procedures were for kidney (14.1%) and bladder stones (18.8%), incontinence (30.4%) and retention (27.3%), or kidney transplant (13.7%). Patients underwent a mean of 1.9 surgeries during follow up. 27.3% of patients needed 3 or more surgeries. Silent hydronephrosis/ renal failure (p= 0.02) or transplant (p< 0.01) were more common among patients with BE or PUV. Patients managed more conservatively as children were more likely to require major bladder surgery during adult care (p =0.01). Surveillance of patients with renal-bladder ultrasound every 1-2 years demonstrated new hydronephrosis in 7%.

Conclusion*:* Our findings highlight the diversity and complexity of clinical and surgical needs in this patient population and helps clarify the standards for patients and clinicians. The study attests to the high prevalence of renal failure in these patients in adulthood, and demonstrates that an upper tract surveillance protocol such as implemented at our institution can be very effective at capturing new incidences of hydronephrosis.

Funding: NA

Table 1. Chief complaint(s) of long-term care patients to tertiary adult urology clinic by primary diagnosis

Chief Complaint	Overall (n=128)	Spina Bifida (n= 98)	PUV (n= 6)	Exstrophy (n= 24)	P
Average # CC / Pt	1.44	1.47	1.33	1.33	0.83*
Recurrent UTI	52 (40.6%)	42 (42.8%)	0	10 (41.7%)	0.11
Kidney Stone	18 (14.1%)	14 (14.3%)	0	4 (16.7%)	0.57
Bladder Stone	24 (18.8%)	21 (21.4%)	0	3 (12.5%)	0.29
Retention	35 (27.3%)	26 (26.5%)	3 (50%)	6 (25.0%)	0.43
Incontinence	39 (30.4%)	34 (34.7%)	0	5 (20.8%)	0.10
Silent HN or RF	21 (16.4%)	11 (11.2%)	2 (33.3%)	8 (33.3%)	0.02
Transplant Evaluation	13 (10.2%)	5 (5.1%)	5 (83.3%)	3 (12.5%)	< 0.01
Neoplasm Workup	4 (3.1%)	3 (3.1%)	0	1 (4.2%)	0.87

Podium #38
IMPACT OF RACE AND IN-HOSPITAL OUTCOMES IN INDIVIDUALS WITH SPINA BIFIDA FOLLOWING INPATIENT UROLOGIC SURGERY
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Presented By: Jason Chandrapal, MD

Introduction: Due to their medical complexity, individuals with spina bifida (SB) are high risk for post-operative complications and readmission following urologic surgery. Studies have found that surgical complication rates can vary among racial and/or ethnic groups in other patient populations. A better understanding of differences in surgical outcomes associated with race among patients with SB is critically important. Our primary aim was to compare in-hospital complication frequencies of patients with SB following urologic surgery by race with secondary outcomes to compare inflation-adjusted cost and length of stay (LOS).
Materials: We analyzed the 1998–2014 Nationwide Inpatient Sample (NIS), identifying patients with SB who underwent inpatient urologic procedures. We assessed two cohorts: 1.) All encounters with SB and a urological surgery (including adults and pediatrics) and 2.) pediatric encounters with SB and a urological surgery. All analyses report weighted descriptive statistics and outcomes; Wald-Chi square test was used for differences in proportions and unadjusted weighted ANOVA was used to test for differences in means. When adjusting for age, gender and primary payer, a weighted logistic regression model was employed for post-operative complications.
Results: We identified 8,062 SB encounters, of which 6,445 (80%) were pediatric (<=18 years old). The overall cohort consisted of 4,953 (61%) white, 2,009 (25%) Hispanic, 663 (8%) black, and 438 (5%) “other” patient encounters. Unadjusted analysis of all encounters had no differences between racial/ethnic groups in terms of post-operative complications, mean inpatient length of stay, or mean inflation-adjusted cost. However, after adjusting for covariates, there was a 15% (95% CI: 2-31%, p=0.02) increase in inflation-adjusted cost in the all ages cohort when Hispanics were compared to white SB encounters. Among pediatric SB encounters, Hispanic ethnicity were associated with a 20% (95% CI: 4%, 40%) increase in length of stay and 18% (95% CI: 2-35%, p=0.02) increase in inflation-adjusted cost compared to their white counterparts.
Conclusion: Hispanic ethnicity was associated with higher mean inflation-adjusted costs among all ages and longer LOS in pediatric SB encounters. While other studies have found racial/ethnic differences in post-operative complications, we did not find significant evidence of this in the SB population undergoing urologic surgery.
Funding: N/A

Podium #39
INITIAL EXPERIENCE WITH DEVELOPING A GENDER AFFIRMING SURGERY PROGRAM IN KENTUCKY
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Presented By: Margaret M. Higgins, MD

Introduction: Increased awareness, public acceptance, and insurance coverage of transgender medical care have led to a rise in the number of patients seeking gender-affirming interventions. We aim to identify the medical and surgical goals of transgender patients at new gender-affirming surgery program in an academic hospital serving a large rural population.
Methods: An IRB-approved, retrospective database was queried to identify all new adult transgender patients who presented to the urology clinic seeking information on gender-affirming surgery from July 1, 2018 to June 30, 2019. Data on demographics, medical

and psychiatric comorbidities, and timeline of major events pertaining to gender identity were reviewed. Descriptive statistics were used for data analysis.

Results: 32 patients met study inclusion criteria, 21 of these patients were male-to-female (MtF) and 11 were female-to-male (FtM). All patients had socially and hormonally transitioned before presenting to our clinic. The mean age of presentation was 36.5yrs, slightly older for MtF (37.9yrs) than FtM (33.8yrs). The majority (N=23) reported memories of gender incongruence before age 10, with 11 of those patients reporting back to their earliest memories. The median time from gender incongruence to transition was 18 years (range: 1-53yrs). The majority of patients had federally subsidized insurance (Medicare N=8, Medicaid N=8, Government employee N=2), twelve had private insurance policies, and two were uninsured. In terms of overall health status, the median BMI was 26.3 kg/m2 (range 18.6-48.2), 15/32 were current or former tobacco smokers, and 10/32 had diagnoses of hypertension or diabetes. A minority of patients expressed interest in fertility preservation (24%, 5/21), but few had been counseled on the resources prior to hormonal transition. Treatment goals varied widely. Only 4/32 patients were undecided on surgical direction, while the rest had specific surgical procedures in mind including orchiectomy only (N=6), vaginoplasty (N=13), metoidioplasty (N=2); and phalloplasty (N=7). Table 1 displays additional characteristics of the cohort, comparing FtM and MtF patients.

Conclusion: In a newly established gender affirming surgery clinic catering to a large Medicaid and rural population, wide variation in patient demographics, education and goals was observed. Patients often present well-informed and eager to engage with the health care system, providing opportunities for research, risk reduction, and outcome optimization.

Funding: N/A

Table 1. A summary of patient self-reported characteristics comparing MtF and MtF transgender patients.

	Female to Male	Male to Female
Avg age of gender dysphoria (yrs)	12.8 N=9	10.9 N=19
Years from dysphoria onset to transition (socially or hormonally)	Range 1-47 Median 14 N=30	Range 2-51 Median =13 N=19
Body part causing most dysphoria (N)	Top = 2 Bottom = 5 Missing data = 4	Face = 6 Top = 1 Bottom = 8 All =3 Missing data = 3
Previous gender affirming surgery? (N)	Yes = 9 No = 2	Yes = 5 No = 16
Interested in fertility preservation? (N)	Yes/Maybe = 3 No = 4 Missing data = 4	Yes = 2 No = 12 Missing data = 7
History of anxiety or depression? (N)	Yes = 8 No = 2 Missing data = 1	Yes = 2 No = 12 Missing data = 7
History of suicide attempts? (N)	Yes = 4 No = 4 Missing data = 1	Yes = 9 No = 2 Missing data = 5

Podium #40

ASSOCIATION BETWEEN GAIT AND PELVIC FLOOR SYMPTOMS: A PILOT STUDY

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Presented By: Kevin N. Morgan, MD

Introduction: Women with pelvic floor disorders, such as incontinence, prolapse, and pelvic pain, often present with concomitant lower back and hip pain, suggesting a possible association with ambulation and gait disorders. We aim to determine if ambulatory gait characteristics have an association with pelvic disorders. As normative values for these variables are largely absent, this pilot study aims to establish baseline gait parameters in healthy women.

Methods: Female volunteers were recruited from the Schools of Medicine and Allied Health. Inclusion criteria were: age >18, nulliparity, and ambulation without assistive devices. Exclusion criteria were: currently pregnant, within 3 months post-partum, and any surgery within the last 6 months. Subjects completed a baseline questionnaire regarding pelvic floor and musculoskeletal symptoms. Standing leg length and anthropometric measurement of joint centers of both knees and ankles was performed. Gait testing is performed on a platform with force plates and images captured on 12-infrared cameras. Walking speed, step length, stride length, cadence, and step width were recorded.
Results: Twenty-three women (mean age, 23.5 years; mean BMI, 23.6) completed the questionnaire. Urinary urgency, urgency incontinence, and stress incontinence were reported by 17%, 9%, and 4%, respectively. None had fecal incontinence, and only 4% reported pelvic pain or pelvic surgery. Thirty-five percent reported seeing a physician for lower extremity or back problems, but only 4% underwent surgery to address said problem. Eighteen women had complete data sets for the extremity measurements and gait parameters (Table)

Conclusion: This pilot study has allowed us to establish baseline gait parameters, extremity and joint measurements in a relatively pure cohort of healthy, female volunteers. The next phase will be to recruit women with pelvic floor disorders and map out changes in gait and joint measurements. The ultimate intent is to isolate potential deficits that may be amenable to improvement with various facets of physical therapy.

	Mean (R)	SD (R)	Mean (L)	SD (L)
Walking Speed (m/s)	1.15	0.14	1.15	0.13
Step Length (m)	0.60	0.06	0.61	0.05
Stride Length (m)	1.21	0.11	1.22	0.10
Cadence (step/min)	114.28	13.13	113.36	11.96
Step Width (m)	0.17	0.04	0.16	0.03
Leg Length (m)	0.85	0.04	0.85	0.04

Funding: N/A

Podium #41
CORRELATION OF URODYNAMIC PARAMETERS WITH POST-OPERATIVE URINARY RETENTION AFTER ADVANCE SLING PLACEMENT FOR STRESS URINARY INCONTINENCE
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[1]MUSC Dept of Urology, [2]MUSC Dept Of Urology
Presented By: Hailey Silverii

Introduction: Although urinary retention is a known risk of AdVance® Sling placement, predictors of urinary retention are poorly delineated within the current literature. We aim to identify risk factors for urinary retention following AdVance® Sling placement for post-prostatectomy SUI using urodynamic parameters.
Methods: Following IRB approval, a retrospective review of MUSC patients who underwent AdVance® Sling placement for post-prostatectomy urinary incontinence from 2009-2019 was performed. Post-operative urinary retention was defined as a complete inability to void or elevated PVR leading to Foley placement or CIC. Detrusor underactivity was defined as a bladder contractility index (BCI) of less than 100 or an acontractile bladder.
Results: Of the 81 patients who underwent AdVance® Sling placement for post-prostatectomy SUI, 21 (25.9%) had urinary retention at their first post-operative visit, while at the final post-operative visit, only 4 patients (4.9%) had persistent urinary retention with a median follow up of 416 days. Of the 81 patients, 54 had urodynamics completed prior to sling placement. Of these patients, 13 (24.1%) experienced acute urinary retention. When comparing those with post-operative urinary retention to those who did not, there was no significant difference in Pdet (29.6 cmH20 vs 32.6cmH20, p=0.69), Q max (13.8 ml/s vs 16.3 ml/s, p 0.50), or presence of detrusor underactivity

(DU) (53.8% vs 42.1%, p=0.46). However, patients with urinary retention had higher PVR on urodynamics (184 mL vs 45 mL, p 0.003) and were more likely to report incomplete emptying or needing to strain to void based on the 1st and 6th question on the AUA symptom score. Univariate analysis also showed that elevated PVR on urodynamics (OR 1.006, CI 1.00-1.01, p=0.04) correlated with post-operative urinary retention while Pdet, Qmax, and presence of DU did not. The data was then re-examined to exclude all patients who reported that the urodynamic study did not represent their voiding pattern at home (N=11). While excluding these patients, PVR on urodynamics remained the only predictive parameter for post-operative urinary retention.
Conclusion: The rate of post-operative urinary retention after AdVance® Sling placement for post-prostatectomy incontinence was 25.9% but long-term rate of urinary retention was 4.9%. PVR during urodynamics was the only predictive parameter for post-operative urinary retention.
Funding: N/A

Podium #42
ARTIFICIAL URINARY SPHINCTER INSERTION IN THE ERA OF ANTIBIOTIC STEWARDSHIP: ARE POSTOPERATIVE ANTIBIOTICS NECESSARY?
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Presented By: Benjamin M. Dropkin, MD

Introduction: The majority of patients undergoing insertion of an artificial urinary sphincter (AUS) are discharged with a course of oral antibiotics postoperatively. This practice is not supported by the literature and may be unwise in the context of increasing antibiotic resistance worldwide. We sought to determine if patients discharged without antibiotics after AUS insertion were more likely to require device explantation for infection or erosion compared to patients discharged with antibiotics at our institution and compared to patients in other large, contemporary series.
Methods: Electronic medical records of patients who underwent AUS insertion between 2013 and 2017 were retrospectively reviewed to determine demographics, comorbidities, and perioperative and medium-term outcomes. Patients were grouped based on known risk factors for infectious complications or erosion (diabetes, prostate radiation, prior AUS explant, chronic steroid use, 3.5 cm cuff size, the presence of a penile prosthesis at time of AUS insertion, prior urethral stent placement, and prior urethroplasty) and postoperative antibiotic prescription status. Patients were placed in Group 1 if they did not demonstrate risk factors and did not receive postoperative antibiotics, Group 2 if they did possess risk factors but did not receive postoperative antibiotics, and Group 3 if they had risk factors and received postoperative antibiotics.
Results: Of the 155 men who met inclusion criteria, 44, 47, and 64 were categorized in Groups 1, 2, and 3, respectively. Median (IQR) follow up was similar across Groups 1, 2, and 3 (12.7 [4.6 - 25.1] vs. 10.7 [4.5 - 31.3] vs. 8.3 [4.4 - 26.4] months, p = 0.808)). Rates of explantation due to device infection (0 vs. 2 vs. 6%, p = 0.172) or cuff erosion (2 vs. 2 vs. 8%, p = 0.253) did not vary significantly between Groups 1-3.
Conclusion: Patients undergoing AUS insertion, particularly index patients with minimal comorbidities, may be unlikely to benefit from the routine administration of postoperative antibiotics. In the current era of antibiotic stewardship these findings have the potential for substantial individual and population health benefits and cost savings.

Group	Group 1 LR, Abx (-) (n = 44)	Group 2 HR, Abx (-) (n = 47)	Group 3 HR, Abx (+) (n = 64)	p-value	p-value Group 2 vs. 3 only
Age (years), mean ± SD	68.8 ± 7.5	68.6 ± 7.5	70.4 ± 8.6	0.456	0.347
Risk Factors for Infection, mean ± STD	0 ± 0	1.2 ± 0.8	1.7 ± 0.8	**< 0.001**	**0.002**
Total Length of Follow Up (months), med (IQR)	12.7 (4.6 - 25.1)	10.7 (4.5 - 31.3)	8.3 (4.4 - 26.4)	0.808	0.567
Device Explant for Any Cause, count (%)	4 (9)	5 (6)	12 (19)	0.109	0.060
Device Explant for Infection, count (%)	0 (0)	1 (2)	4 (6)	0.172	0.301
Device Explant for Cuff Erosion, count (%)	1 (2)	1 (2)	5 (8)	0.253	0.191
Device Explant for Mechanical Failure, count (%)	3 (7)	0 (0)	1 (2)	0.099	0.369

Low Risk (LR): no history of risk factors for infection or erosion; Higher Risk (HR): history of ≥ 1 risk factors for infection or erosion; Abx (-): no postoperative antibiotics prescribed; Abx (+) postoperative antibiotics prescribed

Funding: N/A

Podium #43

INCREASING COMORBIDITY AND FRAILTY DO NOT IMPACT POSTOPERATIVE COMPLICATIONS AMONG MEN UNDERGOING ARTIFICIAL URINARY SPHINCTER IMPLANTATION

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Duke University
Presented By: Brian M. Inouye, MD

Introduction: Urologists may hesitate to offer surgical treatment for urinary incontinence in the genitourinary cancer survivor with significant comorbidities. We used the age-adjusted Charlson Comorbidity Index (CCI) and Frailty Index (FI) to investigate the relationship between preoperative comorbidity and intraoperative and immediate outcomes after artificial urinary sphincter (AUS) implantation.
Methods: Using the National Surgical Quality Improvement Program (NSQIP), patients with CPT codes for AUS implantation were identified between 2007 and 2015. The patient's CCI was calculated based on International Classification of Diseases (ICD)-9 codes. We calculated a FI score for each patient by adding the number of FI conditions the patient had, based on ICD-9 diagnoses. The primary outcomes included overall intraoperative and postoperative complications (at least one complication) and Clavien-Dindo Classification Grade I - V. The association between CCI and each primary outcome were investigated using logistic regression models while controlling for anesthesia and race. The same models were used for FI with age as an additional covariate.
Results: A total of 1,370 records with AUS implantation were queried from NSQIP. The mean age was 70 ± 9.6 years old (median age 71) and the mean BMI was 29.6 ± 4.9. The majority of the patients were Caucasian (77%) and non-smokers (91.5%). The median CCI was 4 [Q1: 3, Q3: 5]. 47% of patients had only 1 FI condition whereas 25% had 2 or more FI conditions. The event rate for overall complication was 5.4%, Grade I was 2.8%, Grade II was 0.7%, Grade III was 2.9%, Grade IV was 1.0%, and Grade V was 0.1%. Due to these low event rates, we only modeled Grade I, III, and overall complication. After adjusting for covariates, CCI was not associated with the odds of having a Grade I (OR = 1.11; 95% CI = 0.89, 1.38; p-value = 0.36), Grade III (OR = 1.09; 95% CI = 0.88, 1.35; p-value= 0.45), or overall complication (OR = 1.10; 95% CI = 0.93, 1.29; p-value = 0.26). Similarly, FI was not significantly associated with the odds of having a complication.
Conclusion: The presence of increased comorbidities or frailty is not associated with intraoperative or short-term postoperative complications among men undergoing AUS implantation.
Funding: N/A

Podium #44
A NOVEL SACRAL NEUROMODULATION INFECTION PROTOCOL IS ASSOCIATED WITH REDUCTION IN DEVICE INFECTION
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Presented By: Hayden M. Hill, MD

Introduction: Sacral Neuromodulation (SNM) device infection is an expensive complication that may occur in up to 10% of implants. There are several possible risk factors for infection including antibiotic selection, skin preparation, as well as duration and modality of testing. We sought to develop a protocol to minimize the risk of device infection, decrease usage of toxic antibiotic agents, eliminate post-procedure antibiotic prophylaxis, and mitigate the additional risk of staged testing. Analysis of all prior infections in our database demonstrated infection with *S. aureus* and thus our protocol included screening and treatment for *S. aureus* colonization of the nares.
Methods: Data were collected prospectively from January 2014 to September 2019 and pre-protocol comparison data from October 2011 to December 2013 were analyzed retrospectively as controls. All patients undergoing SNM procedures underwent nasal swab to screen for *S. aureus*. Patients with positive nasal cultures were treated with 7 days of intranasal mupirocin and MRSA-positive individuals underwent preoperative prophylaxis with Vancomycin. Patients with negative screening cultures were treated preoperatively with cefazolin unless allergic. Patients undergoing staged-lead testing were evaluated at one week for possible implantation. Any device explant associated with signs or symptoms of infection was recorded as a device infection. No post-procedure prophylaxis was used.
Results: A total of 108 SNM procedures in 80 pre-protocol patients and 634 procedures in 383 protocol patients were included. Infection rates were significantly reduced in the protocol group with respect to total procedures (4/108, 3.7% vs 3/634, 0.47%, p=0.0013) and total patients (4/80, 5.0% vs 3/383, 0.78%, p=.0049). Within the protocol group, 84.2% (322/382) of patients were negative for *S. aureus*, 11.2% (43/382) were MRSA positive, and 4.4% (17/382) were MSSA positive. Patients undergoing full implant after a staged test rather than after successful percutaneous nerve evaluation increased significantly in the protocol group (61.5%, 48/78 vs 99.1%, 241/243, p<.0001). Average duration of staged-lead testing decreased from a mean of 9.7 days (95% CI [8.6-10.8]) to 8.0 days (95% CI [7.6-8.4]).
Conclusion: Instituting an SNM device infection protocol was associated with a significant reduction in rates of infection. Infection rates decreased despite increased rates of staged-lead testing and elimination of post procedure antibiotic prophylaxis.
Funding: N/A

Podium #45
REDUCING POSTOPERATIVE PAIN AFTER URETHROPLASTY: IS RECTAL GRAFT A VIABLE OPTION?
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Presented By: Samantha C. Nealon, MD

Introduction: Urethroplasty is the gold standard for the repair of anterior urethral stricture disease. Excision and primary anastomosis (EPA) and buccal graft urethroplasty are generally regarded to have minimal post-operative pain, however, the buccal graft donor site can be particularly painful. In recent years, use of rectal mucosal graft harvest for substitution urethroplasty is gaining popularity amongst reconstructive urologists for management of longer anterior urethral strictures. This study compares pain scores and morphine milligram equivalents (MME) consumed during the first 24 hours postoperatively in patients who underwent urethroplasty with and without rectal grafting.

Methods: Retrospective review of a single surgeon's excision and primary anastomosis, buccal and rectal graft urethroplasties from January 2018 - September 2019 was performed. Staged, posterior, and mixed graft or graft/skin flap urethroplasties were excluded. Stricture and excised segment length and graft surface area harvested were recorded. Rectal grafts were harvested via transanal approach. A standardized post-operative care pathway was used. Post-operative pain scores (Wong-Baker Faces Scale, 0-10) and MME were obtained from the medical records for the first 24 hours.
Results: In the study period, 24 patients underwent urethroplasty by EPA (13) or buccal graft (11), 5 with rectal graft. Average stricture lengths included: EPA - 1.5cm (1-2cm), buccal - 5.4cm (2-11cm) and rectal - 15.4cm (9-22cm). Average surface areas for buccal and rectal grafts were 16.5cm2 (Range: 6-27cm2) and 39cm2 (Range: 30-49cm2). During their first post-operative 24 hours, average pain scores over 24 hours for EPA and buccal urethroplasties was 2.75, while rectal graft urethroplasties had a lower pain score at 1.99 (p=0.043, Student's T Test). Total MME over 24hr for EPA and buccal was 33.8mg, while rectal graft urethroplasties used 26.7mg (p=0.19). This was not significantly different, indicating that the lower pain scores in the rectal graft group were not attributable to increased narcotic use.
Conclusion: Rectal graft urethroplasty offers a useful graft site for long strictures with lower post-operative pain scores than standard urethroplasty techniques and without any increase in narcotic requirement. With the goal of reducing opioid dependence, rectal graft for substitution urethroplasty is a treatment option with decreased pain scores and may reduce need for narcotics after long stricture repair.
Funding: N/A

Podium #46
DELAYED PRIMARY CLOSURE OF FOURNIER'S GANGRENE: OUR 5-YEAR EXPERIENCE AT THE UNIVERSITY OF PUERTO RICO
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Presented By: Ramphis A. Morales-Lopez, MD

Introduction: Fournier's Gangrene (FG) is considered a life-threatening condition commonly presenting in patients with Diabetes Mellitus (DM), and urethral stricture. Anecdotally the management of FG is burdensome with need for multiple interventions for debridement and reconstruction. FG is extremely prevalent in our Puerto Rican population and only treated at our supra-tertiary center. We present our 5-year experience with our single-stage delayed primary closure (DPC) of FG, using a novel non-slip knot technique.
Methods: A 5-year (2013-2018) prospective analysis of FG cases was completed. Our technique involves interrupted mattress approximation sutures using Prolene. We report number of cases, patient demographics, comorbid conditions, hospitalization time, resected tissue area and average time of DPC. Complications and reoperation rates were evaluated. FG primarily managed by General Surgery Service were excluded from study.
Results: 61 patients with FG were evaluated. 7 patients were considered not to be candidates for DPC due to extensive debridement (>400cm2), intraoperative deterioration, or due to non-delayed primary closure (n=1). Median age was 54.5 years-old (38-92), DM was present in 73.8% (n=45), and 52.4% (n=32) had hypertension. 19.6% (n=12) of patients had diagnosed urethral stricture. Average area of resection in DPC patients was 89.4cm2. Average admission time was 10.1 days (2-36 days), yet only 5 patients had a stay >20 days, most related to complications related to DM, and 2 of those patients were unable to be discharged earlier during the aftermath of hurricane Maria. Average time for DPC was 6 days (2-8 days). 7 patients (7/54=12.9%) who initially underwent DPC had to return to the OR. Reasons for re-operation were necrosis of wound edges (n=4), need for general surgery reevaluation and one case of exploration of draining sinus to perineal area. Mortality rate was 4.9% (n=3). None of

our patients required surgery after discharge, and skin grafting was only required in 1 patient.
Conclusion: Our consistent results with DPC prove that this is a valid and safe option for patients with FG. Patients receive appropriate debridement for their initial presentation of FG, with adequate wound healing and cosmetic results. DPC is a time and cost-saving measure that allows for reproducible results in a population with high incidence of FG.
Funding: N/A

Podium #47
UPDATE ON MEDICAL EXPULSIVE THERAPY FOR URETERAL CALCULI IN ADULTS AND CHILDREN: A HIGHLY SELECTIVE REVIEW AND META-ANALYSIS
Rachel Locke, B.S.[1], Elizabeth Kwenda, B.S.[1], Campbell Grant, M.D.[2], Romano DeMarco, M.D.[3], Christopher Bayne, M.D.[3]
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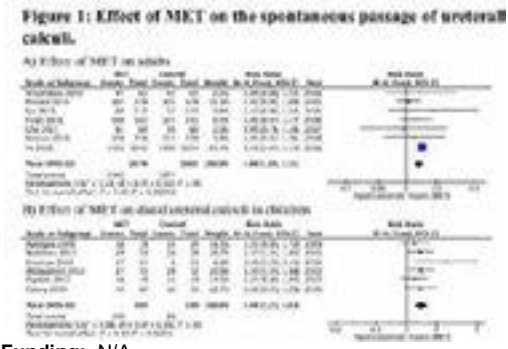
Presented By: Rachel Locke

Introduction: The use of medical expulsion therapy (MET) for uncomplicated ureteral calculi is generally recommended in adults and optional in children. However, most meta-analyses on MET include low-quality studies and high-quality data is generally lacking in the pediatric population. Therefore, we sought to clarify the efficacy of MET on the spontaneous passage of ureteral calculi in both adult and pediatric patients through a stringent and highly selective systematic review and meta-analysis.
Methods: The study protocol was established in accordance with PRISMA. PubMed and Embase were searched in September 2019 for only prospective, randomized controlled studies assessing MET in spontaneous passage of ureteral stones. Adult inclusion criteria required multicenter studies, whereas pediatric single-center studies were included. For pediatric analysis, only studies reporting stones in the distal ureter were included. The primary outcome was overall effect of MET on ureteral calculi passage within 28 days compared to placebo. Raw data was extracted and pooled using Mantel-Haenszel fixed effect meta-analysis. Risk ratios (RR) with 95% confidence intervals (CI) were calculated. Meta-analysis was performed using Review Manager 5.3 software.
Results: Of 37 eligible studies, 7 adults and 6 pediatric randomized, controlled studies met stringent criteria for quantitative analysis. In the adult analysis, a total of 2679 patients received MET and 2665 patients received placebo. The risk ratio for receiving MET was 1.08 [CI 95% 1.05, 1.11]. The heterogeneity I2=0%. In the pediatric analysis, 185 patients received MET and 150 received placebo. The risk ratio for receiving MET was 1.40 [CI 95% 1.21, 1.63]. The heterogeneity I2=0%. Only one child withdrew from all studies due to medication side effects.
Conclusion: Due to the controversy surrounding MET, we sought to determine its utility by analyzing only the highest quality evidence. In this meta-analysis, MET showed marginal improvement in the spontaneous passage of ureteral calculi in children and adults. Interestingly, there was a stronger benefit seen in children, which along with MET's tolerable side effect profile and safety in children, may warrant further use.



Funding: N/A

Podium #48

USING AN ANIMATED VIDEO TO ENCHANCE PATIENT UNDERSTANDING OF URETEROSCOPY FOR NEPHROLITHIASIS

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University of Kentucky
Presented By: Anand Sachin Prabhu, B.S.

Introduction: The use of visual aids to enhance patient learning is becoming more common in medicine. Patients with better understanding of surgical procedures tend to have better long-term outcomes due to active seeking of help when complications occur post-surgery. We hypothesized showing patients an animation of ureteroscopy with instructions on how to address potential complications would increase patient understanding of the perioperative nature of ureteroscopy.
Methods: 50 patients were selected from May 2019-August 2019. The group consisted of patients who had recently undergone ureteroscopy for nephrolithiasis or would be undergoing ureteroscopy in the near future. Patients were given a pre-video assessment, followed by the video, and a post-video assessment. The pre and post-video assessments were multiple choice and identical except for three additional questions at the end of the post video assessment asking about patient opinions regarding the video. Patients were unaware that they would be completing a post video assessment until after they had finished watching the video.
Results: When asked about addressing symptoms of a urinary tract infection post procedure, 72% of patients answered incorrectly, with 58% choosing “go to the ED immediately,” in the pre-video assessment versus 6% in the post video assessment $p<0.05$. Regarding if bleeding was a possible side effect of the procedure, 20% vs. 0% answered incorrectly, $p<0.05$. When asked about stent placement after surgery, 6% vs. 0% answered incorrectly. 100% of patients in both assessments answered correctly that stones would be removed, and a scope would be inserted into the urethra, Figure 1. 94% of patients noted the video was presented in a very clear way, 80% noted that the video increased their understanding of the procedure “a lot”, and 82% noted the video increased the quality of their visit “a lot.”
Conclusion: Using an animated video to explain ureteroscopy and laser lithotripsy procedure and risks was beneficial in patient understanding and appreciated by patients.

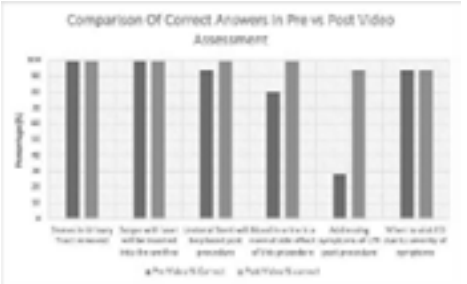

Figure 1: Comparison of correct answers in pre vs post video assessment.
Funding: n/a

Podium #49
URETEROSCOPY COST ANALYSIS: IMPACT OF TECHNIQUE AND TRAINING ON DISPOSABLE EQUIPMENT COSTS
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Presented By: Kevin Parikh, MD

Introduction: Ureteroscopy (URS) for the management of kidney and ureteral stones utilizes a variety of disposables which can account for a significant portion of the cost of care. We sought to perform a utilization analysis to determine factors which impact the cost of performing URS.
Methods: In a single-institution, retrospective study, an analysis of disposable utilization was performed on all kidney and ureteral stone cases managed with URS and laser lithotripsy between July 1, 2016 and June 30, 2017. These cases were performed by six different surgeons, two of whom are fellowship trained in endourology. Disposable equipment was broken down into the following categories: baskets, ureteral dilators and balloons, laser fibers, access sheaths, stents, ureteral catheters, wires, and miscellaneous.
Results: Among the 269 cases included in the analysis, the average cost of disposables used per case was $1,086.54. Endourology Society fellowship trained physicians performed 127 (47.2%) of these cases Average cost of disposables per case performed by a fellowship trained urologist was $1,038.72 compared to $1,129.31 for non-fellowship trained urologists.
Figure 1 displays the individual surgeon costs based on technique and training. Surgeon A, with fellowship training, and a preferred technique of dusting was the most cost effective overall with an average savings of $239.59 per case. These savings were realized in the low utilization of baskets and sheaths. Although Surgeon F was similar to Surgeon A in technique, the costs were skewed by expensive laser fiber usage.
Conclusion: Technique and training can impact utilization of disposables determining the costs of ureteroscopy.

Figure 1: Average case costs, percentage of cases where a basket or access sheath is used, and self-identified technique broken down per surgeon. The (*) represents Society of Endourology trained urologist.

Surgeon	# of Cases	Average Cost per case	Basket Utilization	Access Sheath Utilization	Technique
A*	27	$871	33%	7%	Dusting
B*	100	$1,084	103%	43%	Hybrid
C	39	$1,163	79%	56%	Hybrid
D	62	$1,070	102%	32%	Hybrid
E	28	$1,039	82%	61%	Hybrid
F	32	$1,340	44%	16%	Dusting

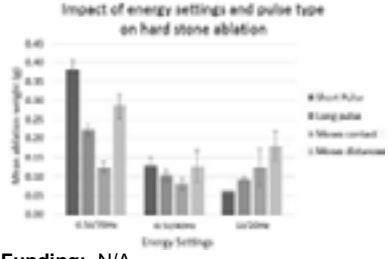
Funding: N/A

Podium #50

THE IMPACT OF PULSE LENGTH AND TYPE ON POPCORN LASER LITHOTRIPSY

Russell Terry, MD, Kohldon Boydston, MD, Evan Carlos, MD, Brent Winship, MD, Patrick Whelan, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University
Presented By: Russell Terry, MD

Introduction: Non-contact or “popcorn” laser lithotripsy is characterized by continuous laser discharge within a collection of stone fragments, which results in agitation of the stones and surrounding fluid. Interactions between stone particles and the laser fiber tip are increased during the agitation, promoting further fragmentation and a significant reduction in stone burden. Previous work has established improved results when performed with moderate pulse energy and high frequency. Our aim was to assess the impact of pulse length and type on stone ablation in an in vitro popcorn model.
Methods: Tests were conducted using a Lumenis Pulse 120H Holmium:YAG laser with 200µm Moses fibers. "Hard" (15:3) and "soft" (15:6) BegoStone phantoms mimicking calcium oxalate monohydrate and uric acid stones respectively, were pre-fragmented to 2-4mm size. 0.5g of fragments were placed into 5mL test tubes. The laser was fired for 2 min with continuous fluid irrigation at 0.5J/70Hz, 0.5J/40Hz, and 1J/20Hz at short pulse, long pulse, Moses-contact, and Moses-distance settings. The resulting stone fragments were then dried and weighed, and the mass of stone reduced to sub-2mm fragments was calculated and analyzed using one-way Tukey’s HSD ANOVA and t-tests. All testing was repeated four times.
Results: For hard stones at 0.5J/70Hz, short pulse was significantly more ablative than long pulse and Moses-contact (p=0.049, 0.004). Moses-distance was also significantly more ablative than Moses-contact under these conditions (p=0.01). No difference in ablation was seen for 0.5J/40Hz and 1J/20Hz for any given pulse type on hard stones. A similar trend was seen for soft stones. At settings of 0.5J/70Hz and 0.5J/40Hz, short pulse and Moses-distance were significantly more ablative than other pulse types. For both stone compositions and most pulse types, the higher power 0.5J/70Hz was superior to the lower power 0.5J/40Hz and 1J/20Hz settings. (Figure)
Conclusion: The efficiency of high-power, non-contact “popcorn” lithotripsy is impacted by pulse length and type. Short pulse and Moses-distance provide the most ablative popcorn lithotripsy when optimal energy and frequency settings are used. The significance of pulse type diminishes when using less ideal energy and frequency settings.



Funding: N/A

Podium #51

THE IMPACT OF LASER PULSE TYPE ON TEMPERATURE CHANGES DURING URETEROSCOPIC LASER ACTIVATION

Russell Terry, MD[1], Brenton Winship, MD[1], Kohldon Boydston, MD[1], Evan Carlos, MD[1], Patrick Whelan, MD[1], Derek Ho, PhD[2], Pei Zhong, PhD[2], Glenn Preminger, MD[1], Michael Lipkin, MD, MBA[1]

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Presented By: Russell Terry, MD

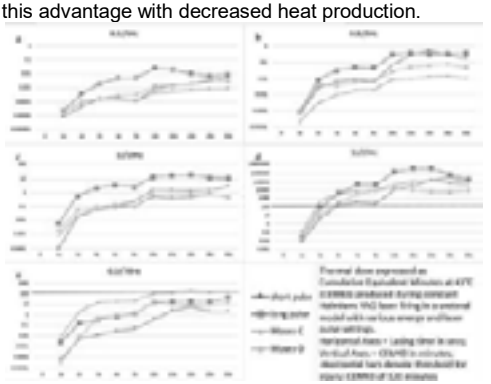
Introduction: Moses technology is a Holmium:YAG laser pulse delivery system shown to minimize stone retropulsion. This may allow laser lithotripsy at higher power. However, power and heat production are proportional and temperatures capable of tissue injury may be achieved during treatment. While prior studies have shown the importance of irrigation and laser activation time, the impact of laser pulse type on temperature is unknown.

Methods:

placed in a 36cm, 11/13 Fr ureteral access sheath inserted into a full 250cc bag of saline to simulate a normal caliber ureter, renal pelvis reservoir, and antegrade irrigant flow. A thermocouple was placed adjacent to the laser tip, and the laser was fired for 30 sec at 0.6J/6Hz, 0.8J/8Hz, 1J/10Hz, 1J/20Hz, and 0.2J/70Hz at constant irrigation pressure of 100mmHg. We tested 4 runs per setting using short (SP), long (LP), Moses-contact (MC) and Moses-distance (MD) pulse modes. The maximum temperature change (dT) and time to reach 6º above baseline were compared. Thermal dose was calculated in cumulative equivalent minutes at 43°C (CEM43). 120 minutes was used as a threshold for tissue injury.

Results: The dT at 0.6J/6Hz was similar across pulse types, and thermal dose remained under the injury threshold. At 0.8J/8Hz, dT for LP was higher than MC (p=0.041), though CEM43 did not reach the thermal injury threshold and all other pulse types were statistically similar to one another. At 1J/10Hz, dT was again higher for LP than MC as well as MD (p=0.024, 0.045) and thermal injury threshold was not reached. No differences in dT were seen between pulse types at 0.2J/70Hz or 1J/20Hz. At 0.2J/70Hz, all pulse types approached but only MC exceeded the thermal injury threshold. At 1J/20Hz, the thermal dose exceeded the injury threshold for all pulse types.

Conclusion: Laser pulse modulation impacts the production of heat in our ureteral model. Long pulse produces greater maximum temperature changes at 0.8J/8Hz and 1J/10Hz, although thermal dose remained below injury threshold. Both long pulse and Moses technology have been shown to reduce stone retropulsion; the latter may confer this advantage with decreased heat production.



Funding: N/A

Podium #52

IMPACT OF STONE HOUNSFIELD UNIT HETEROGENEITY ON OPERATIVE DURATION, LASER ENERGY USAGE, AND NEED FOR SECOND PROCEDURE IN THE URETEROSCOPIC MANAGEMENT OF LARGE STONES

Andrew Harris, MD[1,2], John Roger Bell, MD[1], Amul Bhalodi, MD[1], Jason Bylund, MD, MPH[1]

[1]University of Kentucky Medical Center Department of Urology, [2]VA Medical Center

Presented By: Jason R. Bylund, MD, MPH

Introduction: Urologists are increasingly utilizing ureteroscopy to treat larger stones due to decreased morbidity relative to percutaneous nephrolithotomy (PCNL). However, these procedures may be prolonged, difficult, and/or require one or more additional interventions. Hounsfield units (HU), for quantitative measurement of radiodensity on CT scan, have proven useful for predicting treatment response to shockwave lithotripsy (SWL), but the data is less compelling for response to laser lithotripsy.
Methods: We reviewed URS cases since 2015 in which a patient with stone of largest diameter 15-30 mm was treated with ureteroscopy and laser lithotripsy. Patients with branching or multiple stones were excluded. CT and clinical data points were collected, including stone size, HU parameters (min, max, mean, SD), operative duration, total laser energy needed for fragmentation, and need for secondary procedure. Coefficient of variation (CoV = 100% x SD/mean) was then calculated as measure of the stone's HU heterogeneity.
Results: Forty-seven patients were identified who met inclusion criteria. Mean age was 52.2 years, mean case duration was 103.8 minutes, and mean laser energy was 12.7kJ. Mean stone maximum diameter was 18mm and mean stone volume was 1465mm3. Ten patients required a planned second procedure to clear their stone burden. Stone volume ($r=0.51$, $p<0.005$) and mean Hounsfield units ($r=0.30$, $p<0.05$) were found to have a statistically significant correlation with total laser energy required to fragment the stone, but neither had a significant correlation with total operative duration. However, the HU CoV had a statistically significant correlation with both total laser energy and operative duration, with and without controlling for stone volume, $r=-0.36$ and $r=-0.31$ ($p<0.05$), with increasing heterogeneity associated with lower laser energy requirement and shorter operative duration. Five of the 8 patients (62.5%) with CoV under 10% required a planned second procedure, compared to only 5/39 (12.8%) of the rest of the group ($p<0.01$).
Conclusion: Increasing stone HU heterogeneity is associated with lower energy required for stone fragmentation and shorter OR times when treating large urinary tract stones ureteroscopically. In situations where PCNL and ureteroscopy are being considered, CoV is a better predictor of response to laser lithotripsy than mean HU and may be considered in the decision-making process.
Funding: N/A

Podium #53

A COST COMPARITIVE STUDY OF MINI PCNL VERSUS PCNL IN STONES LARGER THAN 1.5 CENTIMETERS

Sam Fisher, Winston Crute, Oliver Benton, Kevin Reed, John Lacy, Wesley White, Ryan Pickens

University of Tennesee Medical Center, Knoxville, TN

Presented By: Kevin Reed, MD

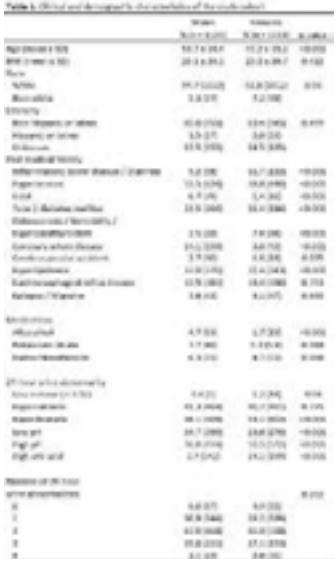
Introduction: Minimally invasive, outpatient procedures remain in vogue in the field of urology for both cost savings and patient satisfaction. The adoption of mini percutaneous nephrolithotomy (PCNL) from pediatric cases in the adult population allows the patient to undergo lithotripsy of larger stone burden with a smaller caliber sheath. Reduced bleeding, improved visibility, and shortened hospital stay are a few suggested benefits of this approach. In this study, we have attempted to quantify the potential cost savings in our experience utilizing mini PCNL in patients with stones >1.5 compared to traditional PCNL.

Methods: A retrospective review was performed over the period June 2016 to August 2019 to collect all patient records who underwent mini PCNL. Patients were excluded if less than 1.5 cm of stone was treated. The costs assessed were based on a single institution's charges for hospitalization, surgical fees and instruments used during the procedures compared to PCNL procedures performed over a one-year period.
Results: In this study, greater than 1.5 cm of stone was treated in 173 of the 189 mini PCNLs. The average age was 53.8, BMI was 32.1, and the population was 54% female. In 53% of cases, multiple stones were present and average stone burden was 2.5 cm (1.5-6.6 cm). Average surgical time was 74 minutes with 28 cc of blood loss. Stents were left in 45%(78/173) of patients and nephrostomy tubes in 24%(42/173). Average date of discharge was postoperative day 0.6 with 63.5% of patients discharged on the day of surgery. Hospital costs associated with PCNL were increased based on length of stay (2.3 days) and average operating room costs of nearly $800 per procedure.
Conclusion: Practitioners may offer mini PCNL as a primary therapy for stones >1.5 cm for expeditious, minimally invasive stone clearance. The potential cost savings for stones treatment in this population suggests direct comparisons are warranted with ureteroscopy as well as PCNL for stone of similar size to assess the benefit.
Funding: N/A

Podium #54
LARGE-SCALE DATA ACQUISITION FROM THE ELECTRONIC HEALTH RECORD TO A SECURE RESEARCH DATABASE FOR NEPHROLITHIASIS: VALIDATION AND CLINICAL APPLICATION
Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Adam Lewis, MS[2], Cosmin A. Bejan, PhD[3], Ryan S. Hsi, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, [2]Vanderbilt Institute for Clinical and Translational Research, [3]Department of Biomedical Informatics, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Introduction: Electronic health records (EHRs) are an underutilized source of clinical data for research. A major barrier is the difficulty to efficiently and securely extract large amounts of identifiable data. Here we demonstrate feasibility of utilizing an automated data extraction tool from the EHR to Research Electronic Data Capture (REDCap) for the study of nephrolithiasis.
Methods: We identified 2,257 consecutive patients with nephrolithiasis who underwent 24-hour urine studies from at our institution from 2001 to 2018. We implemented the Clinical Data Pull (CDP) feature on the EPIC EHR platform using medical record numbers. The CDP allows for the automatic import of over 3000 data points from the EHR including demographic, clinical, and laboratory information. The data was directly extracted to REDCap, a secure web platform for research data. Descriptive statistics were calculated on demographic, past medical history, and 24-hour urine data.
Results: We constructed the database using six source fields linked to the CDP including birthdate, zip code, gender, race, ethnicity, past medical history, and medications. Time from REDCap project creation to data linkage was two hours. Data abstraction required on average eight seconds per patient. Overall, subjects had mean ± SD age and BMI of 50.4 ± 15.1 years and 25.7 ± 25.4 kg/m2, respectively, with 90.1% white. We randomly selected 50 patients and performed manual chart review. The mean time to abstract five index comorbidities and five specific medications was 29.2 ± 12.7 seconds per patient. For CDP performance compared to manual review, the PPV was 100% in all categories except hyperlipidemia (92%) and NPV ranged 89-100% across medical history and medications. There were significant differences by sex across comorbidities, medications and 24-hour urine abnormalities. Female stone formers were more likely to have hyperparathyroidism and also hypocitraturia, high urine pH and high urine uric acid (p-values < 0.001).
Conclusion: We demonstrate feasibility of a rapid, efficient, and large-scale data extraction from the EHR to a secure research database for nephrolithiasis research. This method has highly accurate compared to manual review. We report sex differences in

medical history, medication prescriptions and 24-hour urine abnormalities among nephrolithiasis patients undergoing metabolic evaluation.



Funding: N/A

Podium #55

CAN A SIMPLE PHONE CALL IMPROVE POST-URETEROSCOPY OUTCOMES IN PATIENTS WITH PSYCHIATRIC DISEASE?

Kohldon Boydston, MD, Russell Terry, MD, Patrick Whelan, MD, Brenton Winship, MD, Evan Carlos, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University Medical Center
Presented By: Evan C. Carlos, MD

Introduction: A recent publication from our institution demonstrated that among the 12.6% of patients that return to the emergency department (ED) within 30 days of ureteroscopy (URS) for stone disease, approximately 60% have a history of psychiatric disease (PD). Small-scale quality improvement studies have suggested that postoperative nursing telephone calls reduce unplanned care encounters after URS for all patients. We sought to determine if a postoperative phone call by a urology nurse targeted to this high-risk group would reduce the rate of post-URS ED returns.
Methods: PD was defined as having a DSM-5 psychiatric diagnosis, a prescription for a psychoactive medication, or documentation by a clinician regarding the diagnosis and management of either. Our cohort was identified by prospectively screening the medical record of all patients undergoing URS for stone disease between August 2018 and August 2019. Patients with a history of chronic pain syndromes or substance abuse were excluded. Patients who met inclusion criteria were called by urology triage nurses between postoperative days 1-4. Nurses reviewed a standardized script with the patient and then used a templated form to document information regarding symptomatology and medication usage. Information regarding ED presentation was obtained by chart review, and outcomes were compared with our previously published retrospective population.
Results: At 12-months follow-up, 42% of 360 patients undergoing URS were identified as having PD. The overall 30-day ED return rate following URS for stone disease was 10.8%, and 56% of the patients who returned had PD. PD patients had an ED return rate of 14.4% (previously 16.7%), and 56% of these visits resulted in admission (previously 36%). The proportion of PD patients returning to the ED with a chief complaint of pain was 32%, whereas previously it was 46%.

Conclusion: PD is a risk factor for post-op ED presentation and is prevalent in patients undergoing URS. Our findings demonstrate that phone calls targeted to these patients may lead to a reduction in 30-day ED returns for reasons that do not require admission, such as pain. Compared with our published retrospective data, the findings of this study reflected an overall reduction in ED returns for PD patients following initiation of postoperative phone calls.
Funding: N/A

Podium #56
PERFORMANCE OF ULTRASOUND FOR ASYMPTOMATIC URETERAL STONES AFTER INITIAL SYMPTOMATIC EVENT
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University of North Carolina - Chapel Hill
Presented By: Mark Ehlers, MD

Introduction: Follow up for asymptomatic ureteral stones without passage is essential to assess for obstruction and potential loss of renal function. The AUA broadly recommends combined ultrasound and KUB with reported sensitivity 58-100% and specificity 37-100%. There is a paucity of data regarding follow up imaging specifically for patients who, after initial episode of renal colic and CT confirmed ureteral stone, are asymptomatic at clinical follow up without definitive stone passage. We evaluated how follow up imaging with ultrasound only performed in these asymptomatic ureteral stone patients.
Methods: All stone patients from one provider at a large academic practice over a 5 year period were retrospectively reviewed. Inclusion criteria were those patients who initially presented with renal colic and CT confirmed a ureteral stone, but were subsequently asymptomatic at follow up with no confirmed stone passage; and then elected to have follow up renal ultrasound imaging to minimize radiation exposure.
Results: A total of 71 patients met inclusion criteria: 56.3% (40) male, median age 46 (IQR 36-57), median stone size 4mm (IQR 3-5), 71.8% (51) distal ureteral calculi and 19.7% (14) proximal ureteral calculi, 56.3% (40) right sided calculi, and 90.1% (64) had hydronephrosis on initial CT. At follow up, 57 patients (89%) demonstrated resolution of obstruction; however afterwards, 6 again developed symptoms resulting in CT or surgery, 3 passed a stone, and 4 requested CT confirmation. Overall, 11% (7) of patients had persistent hydronephrosis on ultrasound. Of these patients, 4 went to surgery which confirmed presence of stone, 1 stone spontaneously passed, 1 elected for continued monitoring with imaging and hydronephrosis resolved at 1 year, 1 had follow up CT without stone but persistent mild hydronephrosis.
Regarding the need for any intervention (further imaging or surgery) or stone passage: hydronephrosis on ultrasound demonstrated 100% positive predictive value, 79.7% negative predictive value (CI 74-84%) 100% specificity (CI 93-100%), and 35% sensitivity (CI 15-59%).
Conclusion: For the asymptomatic patient after initial episode of renal colic confirming ureteral stone, ultrasound alone is a safe initial follow up imaging modality combined with counseling for more definitive imaging if symptoms recur.
Funding: N/A

Podium #57
ASSESSING CLINICAL OUTCOMES BASED ON PEDIATRIC EXPERIENCE IN PEDIATRIC SURGICAL PATIENTS
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Presented By: Rohit Vikram Tejwani, MD, MS

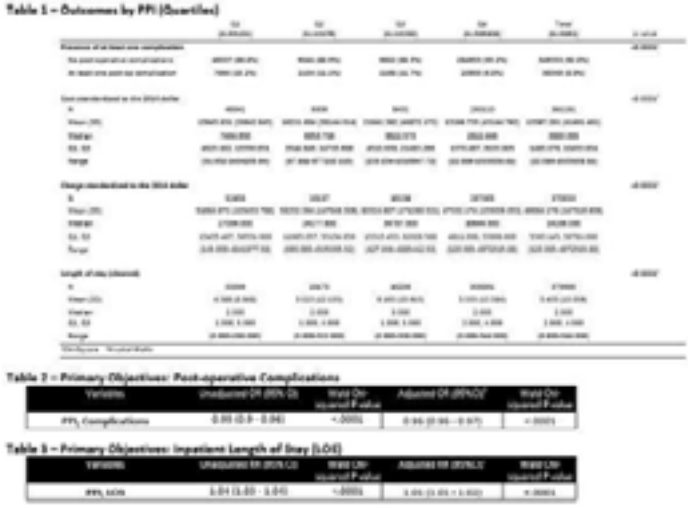
Introduction: Increased surgical experience is correlated with improved patient outcomes, and is particularly important in the care of pediatric patients. The majority of urologic practices in the United States blend both adult and pediatric care. The Pediatric

Proportion Index (PPI) quantifies an individual surgeon's pediatric experience. We sought to determine if greater pediatric surgical experience as measured by PPI affects postoperative complications, length of stay (LOS), and cost for pediatric surgical patients undergoing elective procedures.

Methods: We retrospectively reviewed the State Inpatient Surgery Databases from Arizona, New York, Florida, Iowa, and Michigan for pediatric (18 years) admissions between 2013 and 2014; using CCS codes we identified surgical encounters and used ICD-9-CM codes to identify National Surgical Quality Improvement Program (NSQIP) postoperative complications. We used PPI, the ratio of children to all patients operated on by a given provider, to calculate each surgeon's degree of pediatric sub-specialization. We employed generalized estimating equations to account for hospital-level clustering while modeling for an association between PPI, postoperative complications, and LOS. We adjusted for age, gender, surgical department, insurance, race and Van Walraven Comorbidity Index and employed a binomial distribution with log link function for postoperative complications and a negative binomial distribution with log link function for LOS.

Results: We identified 379,682 surgical encounters. Increased specialization was associated with a lower frequency of postoperative complications (Q1: 13.2%, Q2: 11.1%, Q3: 11.7%, Q4: 6.8%; p<0.0001). Adjusting for covariates, a 10% increase in PPI had a 4% (95% CI: 0.96-0.97) decrease in odds of post-operative complications. Median LOS was highest for patients treated by Q3 PPI providers (3 days [IQR: 1, 5]). A 10% increase in PPI was associated with a 1% (95% CI: 1%-2%) increase in LOS (p<0.0001). Patients treated by the most specialized (Q4 PPI) providers had the lowest median cost ($2,822.45 [IQR: $1,370.50-$9,133.81]) relative to those treated by surgeons with less pediatric sub-specialization ((Q1 ($7,464.95 [IQR: $4,623.18- $13,356.93]), Q2 ($6,953.72 [IQR: $3,544.65-$14,715.99]), Q3 ($9,822.57 [IQR$4,513.63-$21,483.30])).

Conclusion: Pediatric patients who underwent surgical procedures performed by the most pediatric sub-specialized providers had lower odds of developing postoperative complications, incurred lower unadjusted costs, and had similar lengths of stay to those treated by less-specialized providers.



Funding: Grant K08-DK100534 from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

Podium #58
ARE NEGATIVE URINE CULTURES NEEDED PRIOR TO URODYNAMIC STUDIES IN CHILDREN?
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Presented By: Patricia Nicole Maymi Castrodad, MD

Introduction: Traditionally, negative urine culture are required prior to urodynamic studies (UDS) to prevent urinary tract infections. Treatment of asymptomatic positive cultures can delay UDS. The 2019 AUA urologic procedure and antimicrobial prophylaxis guidelines state that UDS does not require pre urodynamics negative urine cultures in healthy adults in the absence of infectious signs and symptoms. We present our experience performing UDS regardless of the preprocedural urine cultures on our pediatric population.
Methods: We conducted a retrospective cohort study using our clinic's database on patients who underwent Video Urodynamic Studies (UDS) for 1 year from 2018 to 2019. A total of 43 patients underwent UDS. Information included age, sex, diagnosis, renal bladder sonogram, video-UDS impression, hydronephrosis, vesicoureteral reflux (VUR), urine culture, urinalysis, and voiding pattern. Positive urine cultures were defined as >100,000 colonies forming units/ml.
Results: We identified 43 patients who underwent UDS due to Myelomeningocele (55 %), Tethered cord (9%), Posterior urethral valves (7%), and other diagnosis (23%). Mean age was 6 years (1 month to 29 years old). Twenty of the patients performed clean intermittent catheterization (47%) and remaining voided spontaneously (53%). Renal sonograms showed hydronephrosis in 7 patients (16.2%). Twenty-two patients were male (51%) and twenty-one patients were female (49%).Fluoroscopy showed smooth bladder wall, no VUR and open bladder neck in 9.3%, and closed bladder neck in 32.5%, trabeculated bladder wall, no VUR and open bladder neck in 39.5%, closed bladder neck in 9.3%. VUR identified in 1 patient (2.3 %). On urinalysis, five patients had positive nitrates (12%) and six patients had positive leukocytes (14%). Of the 43 patients, 6 patients (14%) had positive urine cultures. All patients with positive urine cultures were on clean intermittent catheterization. All patients received post-procedure oral antibiotics. No significant post-procedure complications reported. No episodes of febrile UTI identified.
Conclusion: The risk of symptomatic UTI is minimal after urodynamic studies regardless of urine culture status. Our study included high-risk patient population and no patient developed post UDS complications with a preprocedural positive urine cultures. UDS should be considered a low-risk procedure for UTI, making it feasible to be performed without requiring negative urine cultures.
Funding: N/A

Podium #59
FIVE YEAR EXPERIENCE OF AN EXPERIMENTAL MALE FERTILITY PRESERVATION PROGRAM
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Presented By: Adam Bret Cohen, MD, BS

Introduction: Male fertility may be impaired through a variety of disease processes, including cancer therapy, undescended testes (UDT), and chromosomal abnormalities such as Klinefelter's Syndrome (KS, 47 XXY). In patients with cancer, treatment regimens candamage spermatogonial stem cells (SSCs), while in other situations infertility is associated with the disease itself. To potentially restore fertility, patients can undergo testicular tissue cryopreservationof vital SSCs before therapeutic insult, which

provides a chance at later restoration of spermatogenesis via autologous SSC transplantation, In Vitro germ cell differentiation, or new methods such as round spermatid injection (ROSI).
Methods: Patients of the Pediatric Urology and Hematology-Oncology services at the Wake Forest Baptist Medical Center with malignancy, UDT, and KS were approached for consent and assent (age >7 years) for fertility preserving testicular biopsy, preferably during general anesthesia for procedures such as Port-a-Cath insertion, orchiopexy, or testicular sperm extraction prior to testosterone therapy. Patients who declined biopsy were given the option of enrolling in a registry (non-biopsy control). Transcrotal biopsies were obtained bilaterally, with samples being sent for histology and microbiological testing, and the rest cryopreserved. Further data were obtained retrospectively via Epic chart review.
Results: Over five years of banking, a total of 161 patients were approached for the study, with 106 (66%) undergoing biopsy, 45 (28%) enrolling as a registry subject, and 10 (6%) declining participation. Seventy percent of biopsy patients opted for donation of a portion (up to 20%) of the tissue for basic research with no direct benefit to the donor. Of the 106 patients who underwent biopsy, 69 had cancer, 30 had UDT, and 7 had KS. Short term complications for testicular biopsy (primarily pain and swelling) were typically mild-moderate.
Conclusion: A multidisciplinary testicular biopsy protocol is feasible and generally well received by patients. In the face of cancer and other diagnoses, it is important to consider the prospects for future fertility. Through testicular tissue cryopreservation and banking, physicians can preserve SSCs forpotential future use. With recent developments of in vitro culture and differentiation of SSCs, as well as the advent of ROSI, there are increasing options for restoring fertility and facilitating future pregnancy for these patients.
Funding: N/A

Podium #60
PATIENTS WITH DISORDERS OF SEX DEVELOPMENT AND THE DEVELOPMENT OF GONADAL MALIGNANCY - RISK STRATIFICATION AND LONG-TERM OUTCOMES
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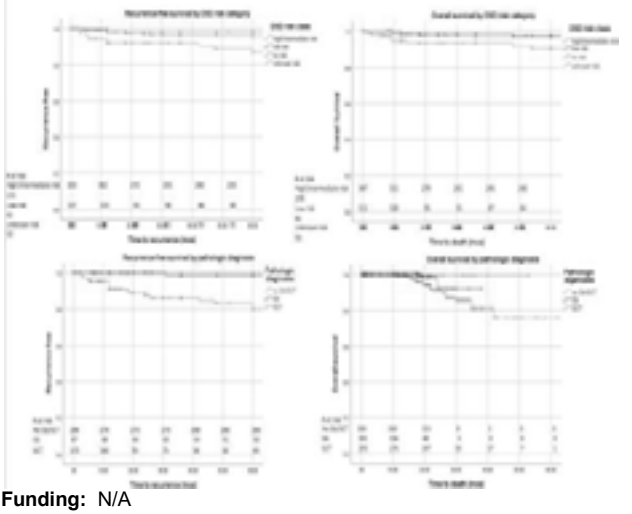
Presented By: Jacqueline Morin, MD

Introduction: Patients with disorders of sex development (DSD) have an increased risk of developing gonadal germ cell tumors (GCTs) and gonadoblastoma (Gb). The clinical impact of Gb is poorly understood and long-term oncologic outcomes are unknown. This study reviews published literature to validate a previously described malignancy risk stratification system (Looijenga et. al. 2007) and describes long-terim oncologic outcomes.
Methods: A systematic PubMed review was conducted to identify patients who had an underlying DSD diagnosis and underwent gonadal surgery. Data on age at surgery, DSD diagnosis, karyotype, follow-up, recurrence, and survival were analyzed. DSD diagnoses were categorized into high/intermediate, low, no, and unknown risk of gonadal malignancy based on the above-mentioned stratification system. Gb/GCT and GCT-free survival by age of gonadal surgery, recurrence-free survival (RFS), and overall survival (OS) were calculated using the Kaplan-Meier method with risk groups and pathologic diagnoses compared using log-rank testing.
Results: 386 articles from 1951-2017 were included (n=2037). Median follow-up was 60mos (IQR 30-68.1). Pathology revealed GCT in 11.9%, Gb in 18.1%, and no Gb/GCT in 61%. Mean age with GCT at surgery was 20.7y (SD 9.8).
58% of patients were high/intermediate risk. Of these, 23.8% had Gb and 21.6% GCT. In the low risk category (28%), 8.1% of patients had Gb and 10.3% had GCT. 4 (<1%) patients fell into the no risk category, 1 had GCT. 14% of patients were in the unknown risk category, 20.4% with Gb and 38.5% with GCT.

RFS and OS differed based on risk category and pathologic diagnosis (figure; p<0.001). Those with GCT had significantly lower 5y RFS and OS (83.3%/86.6%; p<0.001). Those with Gb only (98.4%/96.7%) and those without abnormal pathology (99.6%/99.6%) had similar 5y RFS and OS (p>0.05).
Conclusion: The malignancy risk classification system appears valid, but there may be DSD diagnoses excluded that carry malignancy risk and are not adequately classified. The risk of Gb/GCT appears to increase with age, rising between 15-20y regardless of risk category. 5y RFS and OS are worse for those with GCT, while risk is equivalent for Gb and no Gb/GCT groups. These data may be used for planning timing of gonadal surgery and quantification of oncologic outcomes.



Funding: N/A

Podium #61
EXPERIENCE WITH CIRCUMCISION TECHNIQUES IN OLDER CHILDREN PERFORMED UNDER LOCAL ANESTHESIA IN THE OFFICE SETTING
Luis Perez, MD, Winifred Owumi, MD, Judy Mclendon, RN, Jorge Romero, MA
Children's Urology of the Carolinas, Charlotte, NC
Presented By: Luis Manuel Perez, MD

Introduction: Most physicians (including pediatric urologists) feel comfortable performing circumcisions on infants less than 2 months of age under local anesthesia and defer older children (>4 months of age) to institutions to be performed under general anesthesia. Due to the high charges for procedures under general anesthesia and faced with more insurances not covering routine circumcisions, we committed to perform such procedures as desired by parents in the office setting under local anesthesia.
Methods: A retrospective analysis was undertaken of our 10 year experience performing office circumcisions under local anesthesia between 2009 and 2018. We started performing office circumcisions initially mostly using the PlastiBell technique and more recently switched to free-hand technique in children 2 years and above. The free-hand technique involves anesthetic cream, 1% Lidocaine penile block, oral sedation, gentle restraining with parents present and mostly performing the PlastiBell (or GOMCO) technique, removing the ring or separating the edges, using portable cautery to control bleeding and approximating the edges with absorbable sutures and or surgical glue.
Results: A total of 14,056 boys were circumcised under local anesthesia in the office setting over this 10 year span. Of these, 12,423 (88%) were less than 12 months and were excluded. The remaining 1,633 boys ranged in age from 1 to 19 years (mean 2.7 yrs) and were subcategorized into 4 groups: A) 12 to 24 months (n=686), B) 25 to 60 months (n=693), C) 61 to 120 months (n=206), and D) greater than 10 years (>120

months) of age (n=48). Follow-up ranged from 1 to 72 (mean 9) months. Complications occurred in less than 5% of the boys and included bleeding (less than 1%) , penile skin bridges or adhesions, meatal stenosis, and penile retraction. Overall, over 95% of the parents were satisfied with the cosmetic results.
Conclusion: In conclusion, circumcision under local anesthesia is feasible with low morbidity and appears to be more affordable than when performed under general anesthesia with comparable results.
Funding: N/A

Podium #62
USE OF POSTOPERATIVE INCISIONAL PAIN CATHETERS IN CHILDREN
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Presented By: Hiroko Miyagi, MD

Introduction: Pediatric upper tract urologic anomalies may require a flank incision for surgical management. Flank incisions are painful, as 3 muscle layers are incised in addition to skin and soft tissue to provide adequate exposure. The use of continuous infusion of local anesthesia has been studied in children following thoracic and lower abdominal surgery. Results of these studies found decreased opioid administration without complications related to the use of these catheters. We recently started placing incisional pain catheters after flank incisions as a method to decrease opioid use postoperatively.
Methods: We performed an IRB approved retrospective analysis of patients at our institution who had undergone a flank incision procedure with or without an incisional pain catheter.
Results: A total of 19 patients with an average age of 68 months at time of surgery were identified. All patients underwent urologic surgical procedures with a flank incision (pyeloplasty or nephrectomy). 4 patients had an incisional pain catheter placed intraoperatively. This 5 Fr catheter was placed inferior to the internal oblique following closure of the transversus abdominis with intermittent doses of 0.2% Ropivacaine given scheduled or prn. The remaining 15 patients did not have an incisional or epidural catheter placed. All patients without an incisional pain catheter required parenteral and oral opioids and non-opioid medications post-operatively. 50% (2 out of 4) of patients in the incisional pain catheter cohort required no post-operative narcotics. Patients with pain catheters used on average 1.5 MME of parenteral narcotic medication compared to 12.5 MME in patients with no pain catheters (P=0.28). Patients with incisional pain catheters used less MME of narcotics, milligrams of Tylenol and Ibuprofen than their counterparts without incisional pain catheters. There was no significant difference in length of stay between the two groups (3 vs 4 days for pain catheters vs non-pain catheter). No patients had complications related to incisional pain catheters.
Conclusion: Incisional pain catheters are safe and decrease the amount of opioid and non-opioid medications used following flank incisions in children.
***MME=morphine milligram equivalents
Funding: N/A

Podium #63
OUTCOMES OF INTERMEDIATE RISK (P2) URINARY TRACT DILATATION IN PEDIATRIC PATIENTS
Obafunbi Abimbola, B.A.[1], Benjamin Smith, M.D.[2], Sherry Ross, M.D.[1]
[1]University of North Carolina Department of Urology, [2]University of North Carolina Department of Radiology
Presented By: Obafunbi Abimbola

Introduction: Hydronephrosis is a common antenatal diagnosis and is present in approximately 1-4.5% of pregnancies. The urinary tract dilation (UTD) classification system was introduced in 2014 and stratifies post-natal hydronephrosis risk into three groups: low-risk (P1), intermediate-risk (P2), and high-risk (P3). Recommendations for

P3 hydronephrosis have been established, whereas those for P1 and P2 UTD are often left to the discretion of providers with P1 considered low-grade and less concerning for obstruction and infection. Given the obscure nature of P2 hydronephrosis, we sought to determine the natural history and outcomes of pediatric patients with P2 hydronephrosis within a single institution.

Methods: Children <18 years old diagnosed with hydronephrosis between January 2015 and December 2018 were identified by ICD-9 and ICD-10 codes. Patients with P1 hydronephrosis, P3 hydronephrosis, vesicoureteral reflux, complex anomalies (ex. posterior urethral valve), neurological impairments, neurogenic bladder secondary to spinal abnormalities, and <6 months of follow-up were excluded. The development of urinary tract infection (UTI; 100,000 CFU/mL of bacterial growth), need for surgical intervention, and stability of hydronephrosis were collected retrospectively.

Results: Eighty-one patients [97 renal units (RU)] were included. The median age at initial evaluation was 1 month and the median duration of follow-up was 13 months. Fifty-one (52.6%) RU improved or resolved, 32 (33.0%) remained stable, and 14 (14.4%) progressed to P3 hydronephrosis. The median duration to resolution and improvement was 9 months and 5 months, respectively. Eleven (11.3%) RU required surgical intervention, 10 of which underwent pyeloplasty, with a median duration to intervention of 9 months. Fifty-two patients (64.2%) received antibiotic prophylaxis (amoxicillin or sulfamethoxazole-trimethoprim) for a median duration of 5 months. Nine patients (11.1%) developed a UTI, 3 of which were taking antibiotic prophylaxis at the time of infection.

Conclusion: Intermediate-risk hydronephrosis diagnosed in the pediatric population will either improve, resolve, or remain stable during 1-year follow-up in 85.6% of RU. Only 11.3% of RU required surgical intervention and 7.4% of patients developed a UTI in the absence of antibiotic prophylaxis. These findings will assist with counseling parents concerning the importance of follow-up imaging and monitoring for UTI. However, the low risk of surgical intervention is encouraging and should be discussed with caretakers.

Funding: N/A

Podium #64

IMMUNE EXPRESSION IN CHILDREN WITH VESICOURETERAL REFLUX: A PILOT STUDY

Ashely W. Johnston, MD, Jonathan C. Routh, MD, MPH, J. Todd Purves, MD, PhD, John S. Wiener, MD, Eda K. Holl, PhD
Duke University
Presented By: Ashley W. Johnston, MD

Introduction: Many children with vesicoureteral reflux (VUR) also suffer from bladder/bowel dysfunction (BBD). There is a critical knowledge gap surrounding the underlying immunologic mechanisms that drive the development of BBD and VUR. Our objective was to perform an exploratory, descriptive analysis of the immune microenvironment in the bladders and ureters of children afflicted with VUR with and without BBD.
Methods: Between June and September 2018, we performed a pilot study wherein children with VUR underwent blood and tissue sampling at the time of ureteral reimplantation. The presence and degree of BBD was defined by bowel-bladder questionnaire and patient history. Fresh blood, bladder and distal ureteral tissue were collected at the time of surgery and immediately processed for analysis. The fresh bladder and ureter tissue were enzymatically digested to analyze immune infiltrates and effector cells using flow cytometry and immunohistochemistry. Similar flow cytometry analysis was performed with peripheral blood. Additionally, serum cytokines were assayed via a multiplex bead assay. Given the small sample size in this pilot study, only descriptive statistical analyses were completed.
Results: A total of 6 patients were enrolled (mean age 7.3 years, 4 females/2 males). The median VUR grade was 4 (range 3-5), and included four patients with bilateral VUR. The mean number of preoperative urinary tract infections was 3 (range 0-10). Four patients had both VUR and moderate to severe BBD; 2 patients had VUR alone without BBD. Patients with VUR/BBD exhibited higher counts of infiltrating immune cells compared to those with only VUR in both ureteral and bladder tissue (**Figure 1**). T cell infiltrates of the ureteral tissue all VUR/BBD patients were further analyzed to determine their phenotype and activation status. Infiltrating T cells of ureteral tissue in VUR/BBD patients were predominately CD4 phenotype (**Figure 2.A**) with increased expression of both activation markers, HLA-DR and PD1 (**Figure 2.B**).
Conclusion: These pilot data suggest an active inflammatory microenvironment within both bladders and ureters of children presenting with VUR and VUR/BBD. Inflammatory cell counts are higher in patients with both VUR and BBD than in those with VUR alone. VUR/BBD children may benefit from anti-inflammatory strategies to achieve immune homeostasis.
Funding: NA

Podium #65

IT'S A TEAM EFFORT: A LOOK AT THE ROLE OF UROLOGIC CONSULTATION AND FOLLOW-UP IN THE MANAGEMENT OF HIGH-GRADE PEDIATRIC RENAL TRAUMA

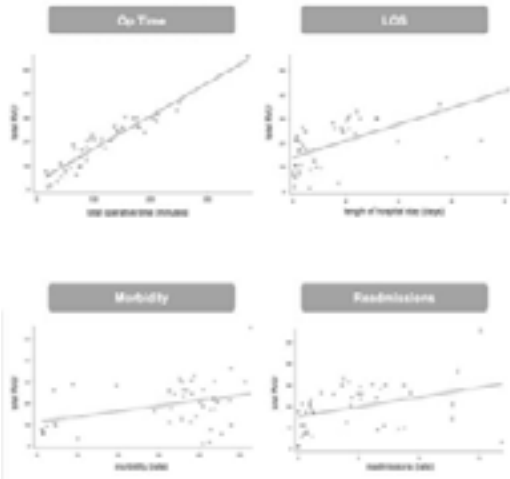
Ching Man Carmen Tong, D.O.[1], Belinda Li, M.D.[1], Amber Greeno[2], Harold Lovvorn, M.D.[2], Abby Taylor, M.D.[1], Stacy Tanaka, M.D.[1], John W. Brock III, M.D.[1], Mark Adams, M.D.[1], John C. Pope IV, M.D.[1], John C. Thomas, M.D.[1], Douglass B. Clayton, M.D.[1]
[1]Division of Pediatric Urology, Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN, [2]Department of Pediatric Surgery, Vanderbilt University Medical Center, Nashville, TN
Presented By: Ching Man Carmen Tong, DO

Introduction: Due to anatomic factors, children are at a higher risk of traumatic renal injury. Over the last several decades, urologic involvement in pediatric high-grade renal trauma has been poorly defined. As such, we aimed to examine current patterns of urologic consultation at our institution, hypothesizing that inpatient urologic consultation increases likelihood of outpatient follow-up.

Methods: We retrospectively reviewed our IRB-approved renal trauma registry from 2013-2019. Patients up to 18 years old were included. We defined high-grade renal trauma as grade 3 or higher using the AAST grading system. Patient demographics, mechanism and grade of injury, hospital course, interventions, urologic consultation and follow-up were recorded.
Results: 152 patients with renal trauma presented to our institution between 2013-2019. 52 patients (34%) had low grade trauma and 100 (66%) had high-grade. Inpatient urologic consultation occurred in 33% of high-grade renal trauma (16% of grade 3, 45% of grade 4, 67% of grade 5) of which 9 (27%) patients underwent surgical intervention (8 ureteral stent placements, 1 cystoscopy and retrograde pyelogram). 5 patients concomitantly underwent minimally invasive radiologic interventions. In 2 patients, the trauma service operatively managed the injuries with nephrectomy but without urologic consultation (1 for grade IV gunshot wound to abdomen who did not survive, 1 for grade V shattered kidney). Only 24 (24.4%) patients with high-grade trauma followed up with a urologist. However, of the 32 surviving patients with an inpatient urologic consultation, 75% (24/32 patients) returned to our clinic for follow-up. Nearly 88% of these patients had renal imaging to track resolution of their trauma. In comparison, 77% (51/66) of patients who did not have urologic consultation while hospitalized returned to follow up with general surgery, although only 35% (18/51) had renal imaging for review.
Conclusion: Our study demonstrates that urologists are more likely to obtain renal imaging for post-hospital follow-up in complex renal trauma. Our results not only echo the current trend towards renal preservation, but also highlight the importance of inpatient urologic involvement to monitor outpatient renal recovery. Multi-institutional studies will help better delineate surgical outcomes and overall impact of high-grade renal trauma in this vulnerable population.
Funding: N/A

Podium #66
CORRELATION OF RELATIVE VALUE UNITS WITH SURGICAL COMPLEXITY AND PHYSICIAN WORKLOAD IN PEDIATRIC UROLOGY
Case Wood[1], Allison Deal[1], Zoe Gan[2,1], Solomon Hayon[1], Angela Smith[1], Hung-Jui Tan[1], Raj Pruthi[3,1], Sherry Ross[1], Christine Nikas[1]
[1]University of North Carolina, [2]University of Pennsylvania, [3]University of California San Francisco
Presented By: Christine Nikas, MD

Introduction: Relative value units (RVUs) are assigned to all patient-physician interactions and are more increasing used as a metric of physician productivity. The correlation between procedure RVUs and objective measures of surgical complexity and physician workload remains poorly understood. This study seeks to better define the correlation of RVUs with surgical complexity and physician workload, as measured by variables such as operative time, length of hospital stay (LOS), morbidity, and readmission rates.
Methods: We examined the 2017 American College of Surgeons National Surgical Quality Improvement Program (NSQIP) Pediatric database and identified 45 current procedural terminology (CPT) codes in pediatric urology with a frequency of >100. We then analyzed 35,941 pediatric urologic procedures using linear regression to correlate RVUs with measures of surgical complexity and overall physician workload such as operative time, LOS, morbidity, and readmissions.
Results: On average, total RVUs poorly correlated with readmissions (R2 = 0.13) and morbidity (R2 = 0.13), with a higher number of low RVU CPTs requiring readmission and in many cases, low RVU CPTs having a higher morbidity. There was a moderate correlation between RVUs and LOS (R2 = 0.60). RVUs were significant predictors of operative time (R2 = 0.89).
Conclusion: In the field of pediatric urology, operative time appears to correlate with RVUs. However, other measures for surgical complexity and overall physician workload do not correlate appropriately. Efforts to improve RVU metrics for individual CPT codes used in pediatric urology should be based on correlative data with the overall goal that RVU assignments reflect case and patient complexity.



Funding: N/A

Podium #67

THE PEAK EARLY-PHASE ENHANCEMENT RATIO (PEER): EFFECTIVE AT DIFFERNTIATING BETWEEN CHROMOPHOBE RENAL CELL CARCINOMA AND ONCOCYTIC LESIONS ON THREE PHASE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY

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Presented By: Steven Lomax, MD

Introduction: In this study, we aim to evaluate the peak early-phase enhancement ratio (PEER) on contrast-enhanced computed tomography (CECT) to validate it's efficacy in differentiating between chromophobe RCC (chRCC) and oncocytic lesions from pre-operative imaging.
Methods: CECTs from 91 patients who presented with pathologically confirmed chRCC (N=29, 32%) or oncocytoma (N=62, 68%) following radical or partial nephrectomy were retrospectively examined. To calculate PEER, Hounsfield Units (HU) of the region of interest on the renal lesion and HU from the renal cortex adjacent to the lesion were measured on CECT and non-contrast CT by a single reviewer who was blinded to the final pathology. The PEER value is calculated by the following expression: PEER=(HUcontrast tumor - HUnon-contrast tumor):(HUcontrast cortex - HUnon-contrast cortex). Measurements were taken either in the nephrographic, excretory, or "not specific" phases. Other patient and tumor characteristics were noted such as homogeneity, presence of a central scar, calcifications, and CD117 immunostain results.
Results: The median age of our cohort was 65 (range, 24 to 83) and 65 (62%) patients were male. On CECT, 47 lesions (52%) appeared homogenous, 27 (30%) had a central scar, and 30 (33%) had aortic calcifications. 12 lesions (13%) were reported as CD117+ on pathologic evaluation. The median PEER for patients with an oncocytoma was 0.74 (range, 0.30 to 1.15) and 100% of masses with a central scar were oncocytomas. The median PEER for patients with chRCC was 0.37 (range, 0.10 to 0.82) which was significantly different from the oncocytoma cohort (P<0.001). Of the 12 patients positive for CD117, PEER performed with 100% accuracy. PEER demonstrates a strong ability to differentiate between oncocytoma and chRCC lesions in the nephrographic (area under the ROC curve [AUC] 0.93), excretory (AUC 0.96), and "not specific" phases (P=0.002, AUC 0.90). PEER thresholds were generated for each phase. The excretory

phase achieved the best results using a threshold of 0.528 with 100% sensitivity, 73% specificity, 63% positive predictive value, and 100% negative predictive value.
Conclusion: The utilization of PEER can successfully differentiate between oncocytoma and chRCC in any phase on pre-operative CECT. Detection of a central scar or a positive CD117 immunostain significantly improves PEER predictability.
Funding: N/A

Podium #68
ASSOCIATION BETWEEN NUCLEAR GRADE OF RENAL CELL CARCINOMA AND THE AORTA-LESION-ATTENTUATION DIFFERENCE
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University of Florida
Presented By: Nikhil Batra, MD

Introduction: Several features noted on renal mass biopsy (RMB) can influence treatment selection including tumor histology and nuclear grade. However, there is poor concordance between renal cell carcinoma nuclear grade on RMB compared to nephrectomy specimens. Here we evaluate the association of nuclear grade with Aorta-Lesion-Attenuation Difference (ALAD) values determined on preoperative CT scan.
Methods: A retrospective review of preoperative CT scans and surgical pathology was performed on patients undergoing nephrectomy for small, solid renal masses. ALAD was calculated by measuring the difference in Hounsfield units (HU) between the aorta and the lesion of interest on the same image slice on preoperative CT scan. The discriminative ability of ALAD to differentiate low grade (grade 1 & 2) and high grade (grade 3 & 4) tumors was evaluated by sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and area under curve (AUC) using ROC analysis.
Results: A total of 368 preoperative CT scans in patients with renal cell carcinoma (RCC) on nephrectomy specimen were reviewed. Median patient age was 61 years (IQR 52-68) and the majority of patients were male 66% (243/368). Tumor histology was chromophobe RCC in 7.6%, papillary RCC in 15.5% and clear cell RCC in 76.9%. The majority, 69.3% (253/365) of tumors were stage T1a. Nuclear grade was grade 1 in 5.46% (19/348), grade 2 in 64.7% (225/348), grade 3 in 26.2% (91/348), and grade 3 in 3.2% (11/348). Nephrographic ALAD values for grade 1, 2, 3, and 4 were 73.7, 46.5, 36.4, and 43.1, respectively ($p = 0.0043$). [PO1] Nephrographic ALAD was able to differentiate low grade from high grade RCC with a sensitivity of 32%, specificity of 89%, PPV of 86%, and NPV of 36%. ROC analysis demonstrated the predictive utility of ALAD to predict high versus low grade RCC with an AUC of 0.60 (95% CI 0.51 0.69).
Conclusion: ALAD was significantly associated with nuclear grade in our nephrectomy series. ALAD was also demonstrated to have predictive utility for detecting high versus low grade RCC. With further evaluation ALAD may serve to augment RMB utility in assessing nuclear grade of RCC and ultimately enhance treatment decisions.
Funding: N/A

Podium #69
LOW TESTOSTERONE AND FRAILTY PREDICT OVERALL SURVIVAL IN SURGICAL PATIENTS
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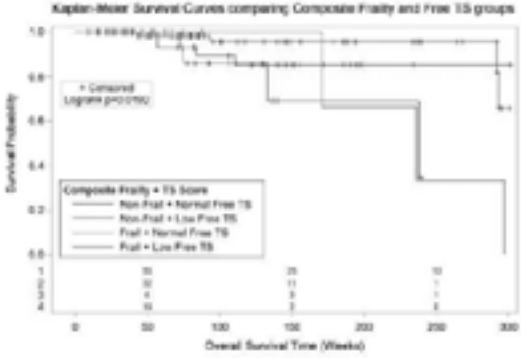
Presented By: Fangyi Rose Lin, BS

Introduction: Frailty is a prevalent syndrome of decreased resiliency and physiologic reserves. Preoperative frailty has been predictive of higher complications and mortality.

Low testosterone (TS) has been associated with physical and cognitive decline. Free testosterone, specifically, plays an important role in such processes as it is the more bioactive form. We hypothesize that low testosterone levels will be associated with frailty and be a predictor of postoperative outcomes in patients undergoing major surgeries.
Methods: This study included 136 male patients undergoing major surgery from 2014-2019. Frailty was assessed by the widely used Fried criteria with a score 2 categorized as frail. Total and free TS were obtained pre-operatively. A four-level scoring system combining frailty and age-adjusted free TS was used to assess the combined effect on postoperative outcomes. Univariate analyses were performed using the Kaplan-Meier and log-rank methods, and the multivariate analysis was performed using a Cox proportional hazard model to identify clinical factors associated with overall survival (OS).
Results: Mean age of the cohort was 62 ±10 years, and a total of 15 deaths occurred over a median follow-up period of 106 weeks. Of the 136 patients, 31 (23%) were frail, and 55 (40%) had low levels of age-adjusted free TS. The presence of frailty and low free TS independently predicted survival in univariate analyses. Multivariate analysis revealed that the combined score was the only significant predictor of OS (p=0.04). Frail patients with low levels of free TS had over six times the risk of death in multivariate analysis, [HR] 6.59 (95% CI 1.56 – 27.85), p=0.01. Combined frailty and free TS was associated with a statistically significant reduction in OS (log rank p=0.02).
Conclusion: While preoperative frailty alone is correlated with overall survival, we found that the addition of low free TS has greater potential to predict patients at higher risk of overall survival. Free TS may serve as a biomarker to complement current frailty measurements for surgical risk evaluation. Future studies to evaluate TS replacement to reduce such risk in frail patients would be warranted.



Funding: John Robinson Churchill family foundation support gratefully acknowledged

Podium #70
COMPARISON OF RENAL TUMOR CONTACT SURFACE AREA AND R.E.N.A.L. NEPHROMETRY SCORE IN PREDICTING PERIOPERATIVE OUTCOMES OF ROBOT-ASSISTED PARTIAL NEPHRECTOMY
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Presented By: Michael B. Rothberg, MD

Introduction: Increasing renal tumor contact surface area (CSA) has been associated with diminished renal functional outcomes and increased postoperative complications following robot-assisted partial nephrectomy (RAPN) for renal cortical neoplasms. We sought to determine the ability of CSA to predict perioperative outcomes and generate a comparison to the well-established RENAL Nephrometry score.
Methods: We queried our IRB-approved renal oncology database for patients who underwent RAPN from 2008 – 2017. Patient demographic, clinicopathologic, and

perioperative data were obtained. Tumor CSA and RENAL Nephrometry scores were calculated based on preoperative cross-sectional imaging. CSA was calculated using the

were determined for tumor CSA and RENAL score with respect to several perioperative outcomes.
Results: A total of 565 patients who underwent RAPN were included. The mean tumor size was 3.14cm (SD 1.43), median CSA was 12.3cm² (IQR 6.5, 20.7), and median RENAL score was 6.5 (IQR 5, 8). Mean OR time was 184 minutes (SD 56.5), mean warm ischemia time (WIT) was 17.6 minutes (SD 8.76), mean estimated blood loss (EBL) was 122mL (SD 155), and median length of hospital stay (LOS) was two days (IQR 2, 3). CSA, when compared to RENAL score, was more strongly correlated to OR time (rs 0.348 versus 0.194, each p<0.001), WIT (rs 0.348 versus 0.200, each p<0.001), EBL (rs 0.234 versus 0.208, each p<0.001), and LOS (rs 0.183, p<0.001 versus 0.085, p<0.05). For every additional 1cm² of tumor CSA, OR time was found to increase by 1.04 minutes, WIT increased by 0.13 minutes, and EBL increased by 2.3mL (all p< 0.001). Likewise, an increase in RENAL score by one point resulted in an increase in OR time of 4 minutes, an increase in WIT of 0.7 minutes, and an increase in EBL of 11.5mL (all p<0.001).
Conclusion: Both CSA and RENAL score were correlated to OR time, WIT, EBL, and hospital LOS following RAPN, but tumor CSA was more strongly correlated than RENAL score. In addition to other prognosticators, CSA should be used to gauge tumor complexity and counsel patients regarding perioperative outcomes prior to RAPN.
Funding: N/A

Podium #71
WHAT FACTORS PREDICT PRESERVED RENAL FUNCTION AFTER ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY?
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Presented By: Ashley Shumate, MD

Introduction: To evaluate factors associated with preservation of renal function (estimated glomerular filtration rate [eGFR] within 10% of baseline) after robotic partial nephrectomy (RAPN).
Methods: We analyzed 398 consecutive eligible RAPNs from a prospectively-maintained database. Patients were excluded if they had a solitary kidney. We evaluated eGFR pre-operatively, and 1, 6, and 12 months after RAPN. We considered preserved renal function to be eGFR within 10% of baseline. We analyzed patient and tumor characteristics, pathology, and intraoperative/post-operative outcomes and their association with preserved eGFR. A p 0.05 was considered statistically significant.
Results: 226 patients had eGFR available pre-operatively and one month post-RAPN. 157 of 226 (69.5%) patients had preserved renal function within 10% of baseline at 1 month post-RAPN. Patients who had preserved renal function were younger (60.5 vs 63.8 years, p=0.0443), had smaller renal masses (mean 2.8 vs 3.7 cm, p<0.0001), had greater tumor depth (1.4 vs 1.8 cm, p=0.0007), had lower R.E.N.A.L. scores (p=0.0001), had less frequent collecting system entry (p<0.0001), had shorter warm ischemia time (WIT), (p=0.0001), and had less intraoperative estimated blood loss (EBL) (420.4 vs 453.6 mL, p =0.0454), There was no difference in sex, race, body mass index (BMI), comorbidities including diabetes, hypertension, coronary artery disease, pre-operative creatinine, pre-operative hemoglobin, MAP score, intraoperative complication or conversion to open partial/laparoscopic nephrectomy, total operative time, or pathology. At 6 months after RAPN, 171 patients had eGFR available. 103/171 (60.2%) had eGFR within 10% of baseline. At 6 months post-RAPN, age, renal mass size, R.E.N.A.L. score, collecting system entry, and WIT were associated with preserved renal function within 10% of baseline. At 12 months after RAPN, 113 patients had eGFR available. 63/113 (55.8%) had eGFR within 10% of baseline. At 12 months post-RAPN, renal mass size,

tumor depth, R.E.N.A.L. score, MAP score, collecting system entry and WIT were associated with preserved renal function within 10% of baseline.
Conclusion: Renal mass size, collecting system entry, R.E.N.A.L. score, and WIT are associated with preserved renal function at 1, 6, and 12 months post-RAPN.
Funding: N/A

Podium #72
SURGICAL RESECTION FOR PANCREATIC METASTASIS OF RENAL CELL CARCINOMA: A SINGLE INSTITUTION 17-YEAR EXPERIENCE
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Presented By: Steven Lomax, MD

Introduction: Pancreatic metastasis (PM) accounts for 1-2% of all pancreatic tumors. Renal cell cancer (RCC) is the most common primary neoplasia that metastasizes to the pancreas. Approximately 22% of the cases of PM occur in asymptomatic patients older than 70-years and are identified during follow-up. In patients with resectable PM, surgery is accepted as the treatment of choice for long-term survival. This study analyzes outcomes of patients with RCC PM.
Methods: We conducted a retrospective review of patients who were diagnosed with metastatic RCC (mRCC) and underwent surgical resection in our Institution between 2001 and 2018. All patients had a known primary RCC and a pathology report on the pancreatic specimen consistent mRCC.
Results: There were 16 patients (mean age of 67±8 years, male 8 (50%), mean BMI 29±5.36 kg/m2). Half of them were asymptomatic. Diagnosis was incidental in 9 (56.25%) with a median lesion size of 25 mm (12 – 80). Pancreatic resections performed were: pancreatoduodenectomy, distal pancreatectomy and total pancreatectomy in 5 (31.25%), 9 (56.25%) and 2 (12.5%), respectively. Median estimated blood loss was 225 ml (15 – 2,200), median operative time was 242 min (63 – 420). Median length of stay was six days (2 – 30). New-onset diabetes was detected in one (6.25%). Six (37.5%) had a minor complication. Reoperation was necessary in one patient (6.25%). The median number of harvested lymph nodes was 17 (4 – 31), all were negative. All had a R0 resection. Three (18.75%) had recurrence of disease with a median time from surgery of three years (2 – 6).
The median follow-up from surgery was 9 years (0 – 15). Thirteen (81.25%) patients are still alive, of these, eight are disease free. Three (18.75%) patients died: one due to an upper gastrointestinal bleeding, one due to widespread metastasis and one of an unknown cause.
Conclusion: Long-term survival can be achieved with surgical resection of PM from RCC in selected patients in whom complete resection is possible.
Funding: N/A

Podium #73
COMPLICATIONS AND OUTCOMES OF INFERIOR VENA CAVA LIGATION COMPARED TO THROMBECTOMY IN RENAL CELL CARCINOMA PATIENTS: A RETROSPECTIVE, CASE-CONTROLLED STUDY
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Presented By: Reza Nabavizadeh, MD

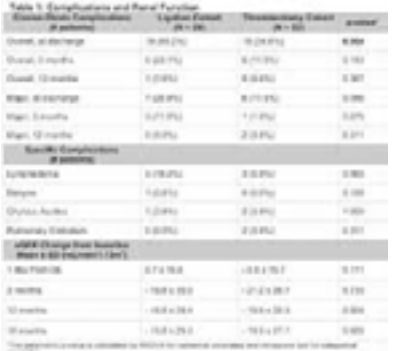
Introduction: A subset of patients with renal cell carcinoma (RCC) have tumor involvement of the inferior vena cava (IVC). Infrequently, IVC resection or ligation, is

sometimes necessary. Oncological outcomes of renal cancer patients with IVC at our institution have been previously reported. In this study, we retrospectively compared the renal function, lymphedema rate, and complications in patients with RCC who underwent IVC ligation versus those who underwent thrombectomy.

Methods: Ligation patients were matched to thrombectomy patients on pre-operative Charlson Comorbidity Index (CCI), estimated glomerular filtration rate (eGFR), and race in a 1:2 ratio. End points included length of hospital stay, overall complications (Clavien-Dindo grade I to V), major complications (Clavien-Dindo grade IIIa and above), and change in eGFR post-operatively.

Results: 26 RCC patients who underwent IVC ligation between 2001 and 2019 were matched with 52 patients who underwent IVC thrombectomy in the same time period. When compared to thrombectomy, ligation patients had a longer average length of hospital stay (12.4 ± 9.8 days vs 8.8 ± 6.1 days, *p = 0.051*) and higher readmission rate (52.2% vs 33.3%, *p=0.124*), though these differences did not reach statistical significance. The ligation cohort also had a higher overall complication rate at discharge (69.2% vs 34.6%, *p=0.004*). However, at 12 months, the rate of persistent overall and major complications for both ligation and thrombectomy cohorts were low and comparable; 3.8% vs 9.6% (*p=0.367*) and 0.0% vs 3.8% (*p=0.311*), respectively. Although ligation patients experienced higher rates of lymphedema (19.2% vs 5.8%), this did not reach statistical significance (*p=0.065*). At 18-month follow up, mean eGFR declines were similar between ligation patients (18.8 mL/min/1.73m2) and thrombectomy patients (19.6 mL/min/1.73m2) (*p=0.655*). Differences in cancer-specific mortality (*p=0.9523)* and all-cause mortality (*p=0.7506*) were also not statistically significant.

Conclusion: This study reports the outcomes and complications of the largest cohort of patients with RCC who underwent IVC ligation. Although ligation patients may initially face a more challenging postoperative course, the incidence of major complications is still low. Moreover, ligation patients appear to do similarly long-term when retrospectively compared to thrombectomy patients in regards to renal function, complication rate, and mortality.



Funding: N/A

Podium #74

THE COMBINATION OF SUNITINIB AND KETOCONAZOLE TARGETED AT THE TUMOR MICROENVIRONMENT IMPROVES THE EFFICACY OF ANTICANCER THERAPY

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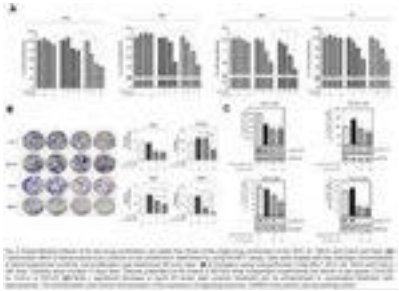
Presented By: Louis Spencer Krane, MD

Introduction: While anti-angiogenic targeted therapies for clear cell renal cell carcinoma (ccRCC) remain effective systemic options, resistance invariably occurs in most cases. Mechanisms of development of chemoresistance remain elusive in these patients. Exosomes (Exo) and small extracellular vesicles (EVs) play an important role in resistance to therapy. Ketoconazole is an FDA approved medication that has been identified to suppress exosome biogenesis pathways. We examined the effect of ketoconazole on biogenesis and secretion of exosomes in several RCC cell lines. Subsequently, we examined whether ketoconazole in combination with sunitinib could prevent resistance to therapy.
Methods: Ketoconazole and sunitinib were purchased from Selleckchem. Cell cytotoxic effect were assessed by MTT or clonogenic survival assays. Concentration and physical characteristics of secreted Exo and EVs) were determined by qNANO-IZON (IzonScience Ltd, MA). Markers of Exo biogenesis (Alix and nSMase) and secretion (Rab27a) maker were measured by immunoblotting. Selective inhibitors were employed to examine potential involvement of p38 MAP kinase, JNK and MEK in ketoconazole-mediated inhibition of Exo biogenesis and secretion in RCC cell lines (RCC-24, 786-O, Caki-2, HK-2) in comparison to normal HEK 293 cells. Also, we examined the combination efficacy of ketoconazole and sunitinib in the RCC cell line.
Results: A time-course, dose-dependent analysis revealed that ketoconazole up to 1uM is not toxic to all cell lines. While there was no change in particle diameter or mode, ketoconazole selectively decreased secreted Exo (200 nm) in comparison to EVs (200nm) by RCC cells, as measured by qNano-IZON. Interestingly, the Ketoconazole-mediated inhibition of Exo biogenesis was coupled with inhibition of ERK1/2 activation. Next, selective inhibitors were employed to determine which ERK1/2 pathway is involved in inhibition of Exo biogenesis and secretion. Sunitinib was found to be toxic to cells in a dose dependent manner however the addition of ketoconazole at subtherapeutic dosing demonstrated inhibited cellular proliferation and colony formation in synergistic mechanism (Figure 1).
Conclusion: These findings suggest that therapeutic levels of ketoconazole suppress Exo biogenesis and secretion in RCC cells. The combination of exosome biogenesis inhibition with ketoconazole along with anti-angiogenic therapy of sunitinib suggests synergy in prevention of resistance in ccRCC cell lines and is being validated in vivo studies.



Funding: NIH

Podium #75

TRENDS IN UTILIZATION OF NEOADJUVANT CHEMOTHERAPY FOR LOCALLY ADVANCED UPPER TRACT UROTHELIAL CARCINOMA: A NATIONAL CANCER DATABASE ANALYSIS

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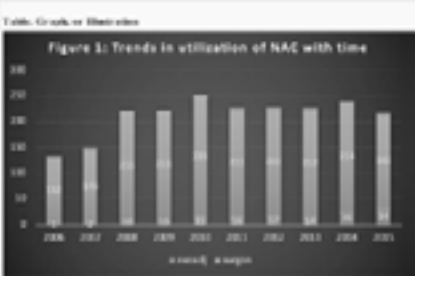
Department of Urology, University of Louisville School of Medicine
Presented By: Samarpit Rai, MD

Introduction: Upper tract urothelial carcinoma (UTUC) is an uncommon, but aggressive malignancy, with a high chance of metastasis after the tumor invades into the sub-urothelial connective tissue. The standard of care for the management of UTUC is radical nephroureterectomy (RNU) with bladder cuff excision. There is growing evidence that the use of neoadjuvant chemotherapy (NAC) in locally advanced UTUC improves oncological outcomes. This study aims to evaluate trends in utilization of NAC for UTUC based on type of treatment center over time and patient factors that determine its use.
Methods: Using the National Cancer Database, all patients with locally advanced tumors of the renal pelvis (cT3-T4 or cN+) were identified between the years 2006 and 2015. These patients were then divided into 2 groups: RNU alone vs RNU + NAC. Kruskal-Wallis and chi-squared tests were used to compare baseline characteristics between the treatment groups. Multivariable Cox regression analysis was generated to identify factors associated with overall survival (OS).
Results: Out of a total of 2406 patients identified after applying relevant inclusion and exclusion criteria, 145 (6%) received NAC. Utilization of NAC remained low, but demonstrated an increasing trend over time (Figure 1). Patients in the RNU + NAC group were more likely to have been treated at an academic center than those that received RNU alone ($p < 0.01$). Patients receiving RNU + NAC were younger ($p < 0.01$), had lower co-morbidities ($p = 0.02$) and a higher grade ($p = 0.01$). On Cox regression analysis, NAC + RNU did not demonstrate a significantly improved OS as compared to RNU alone (HR = 0.78, $p = 0.09$).
Conclusion: The overall utilization of RNU + NAC increased from 2006 to 2015, though its use remained low. Patients were more likely to receive NAC if they were younger, healthier, and treated at academic centers. After adjusting for clinical and pathologic features, NAC + RNU did not demonstrate significantly improved OS as compared to RNU alone.
Funding: N/A



Podium #76

PREDICTING MEDICARE SURGICAL EPISODE SPENDING IN THE BUNDLED PAYMENTS FOR CARE IMPROVEMENT-ADVANCED ERA

Daniel D. Joyce, MD[1], Pikki Lai, PhD[2], Alan Zhang[3], Diane N. Haddad, MD[4], Brittany L. Cunningham, MSN[5], Cary J. Stimson, MD, JD[1]

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Presented By: Daniel D. Joyce, MD

Introduction: Bundled payment programs transfer financial risk to healthcare providers in hopes of reducing spending while maintaining quality of care. One key to successful performance in this new paradigm is identifying patients at high risk for overspending. In this study, we sought to develop a health care spending risk assessment tool for surgical episodes included in the Bundled Payments for Care Improvement – Advanced (BPCI-A) initiative. Our secondary objective was to identify specific patient-level predictors of spending.

Methods: We retrospectively identified a population-based sample of patients who initiated one of the 11 BPCI-A surgical episodes at our institution between 2014 and 2016 using Centers for Medicare and Medicaid Services (CMS) claims data. These were then matched to encounters within our institution for additional clinical and social determinants of health data.

Results: Of the 2,347 eligible patients, 1,236 (53%) were male. The cohort was predominantly Caucasian (n=2151, 92%) with an average age of 71 years old ± 10.1. Using a generalized linear model, we identified predictors of low and high-risk spending with an average 12.3% reduction from target price in the low risk group and 25.1% increase from target price in the high-risk group. Patient-level predictors of episode spending in excess of the target price included age 70 (age 70-79: estimate: 12.2 ± 2.8%, p<0.001; age 80: 23 ± 3.6%, p<0.001), black race (20.0 ± 4.9%, p<0.001), and number of comorbidities (2.3 ± 1.1%, p=0.029).

Conclusion: We identified patients in a CMS bundled payment program at high risk of surgical episode spending in excess of targets prices using a novel statistical model. Patient-level predictors of excess spending included older age, black race, and number of comorbidities. To our knowledge, this is the first study to stratify patients at risk of incurring health care spending in excess of CMS bundle target prices based on a comprehensive set of clinical, socioeconomic, and claims-level data. These findings can inform future CMS bundled payment risk-adjustment policies and guide spending reduction interventions for surgeons in bundle payment programs.

Funding: N/A

Podium #77

POTENTIAL BENEFITS OF A DEDICATED DIFFICULT URINARY CATHETER (DUC) TEAM: THE 4-YEAR EXPERIENCE AT A SINGLE INSTITUTION

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Presented By: John Sam Fisher, MD

Introduction: Difficult access with urinary catheter remains a common condition treated by practicing urologists. According to CDC 2018, 12-18% of adults admitted to hospital will have an indwelling catheter inserted some time during inpatient stay. Of all urology consultations, an estimated six percent are directly related to complications with catheterization. This study reviews a single institution's 4-year experience with a hospital team dedicated to difficult urinary catheter (DUC) placement.

Methods: A retrospective review was performed over a period from May 2013 to May 2017. In October 2012, 34 nurses in 3 high volume inpatient units and the emergency department were trained as part of the team. An algorithm was formulated and the DUC

team was consulted in cases with history of DUC placement, radical prostatectomy or prostate procedure, urethral stenosis, pelvic radiation, hypospadias, or difficult visibility of the meatus. No more than 2 attempts at catheter placement were performed prior to calling the DUC team. For placement, 10 cc of 2% lidocaine was infused 2-5 minutes prior and 18 french Coudé was selected in cases of BPH or 12 french silastic in urethral stenosis. All cases of consultation were recorded along with type of catheter, number of attempts, duration of attempt, time of day, and success of placement.
Results: Over this four-year period, a total of 529 patients underwent evaluation by the DUC team at our institution. After an average of 2.4 attempts, 88.6% were successful by the team without physician consultation. Timing of difficult catheter placement was from 6 A.M. to 6 P.M. in 65% of cases. The most common catheter used in successful placement in men was an 18 french Coudé (35%) and in women a standard 16 french foley (31%).
Conclusion: The review of our DUC team date demonstrates the potential role and success of this program in the hospital to date. The algorithm and teaching provide an inexpensive method to reduce unnecessary consultation and potential iatrogenic injury leading to surgery. A savings of 408 consultations over this period emphasizes this benefit. The DUC team continues to serve as an invaluable resource and could be adopted by other institutions in the future.
Funding: N/A

Podium #78
CONTEMPORARY RACIAL DISPARITIES IN PSA SCREENING AND PROSTATE CANCER DIAGNOSIS IN A LARGE, INTEGRATED HEALTHCARE SYSTEM
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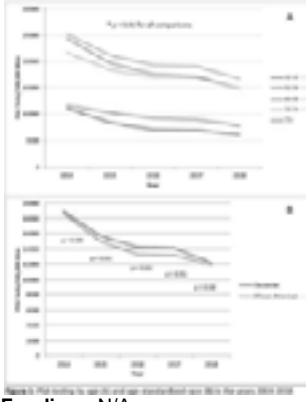
Presented By: Caroline D. Lu, MD

Introduction: The USPSTF prostate cancer (PCa) screening guidelines have changed significantly in the past decade, from a recommendation against PSA-based screening in 2012 to a recommendation of shared decision-making for men aged 55-69 in 2018. Most guidelines acknowledge that African American men should be screened more intensively than Caucasian men due to increased incidence of PCa and PCa mortality. Our objective was to characterize racial disparities in PSA screening and new PCa diagnoses in a large healthcare system with a diverse patient population to understand contemporary trends.
Methods: This retrospective cohort study used data from the Atrium Health Enterprise Data Warehouse, which includes patient clinical and demographic data from > 900 care locations across North and South Carolina. Participants included men 40 years seen in ambulatory or outpatient settings during 2014-2018. Exclusion criteria included prostate biopsy within 24 months or PCa diagnosis within 18 months prior to index encounter. PSA testing and PCa diagnoses were identified using laboratory data and ICD-9/ICD-10 codes, respectively. Age-standardized outcomes were reported for racial groups with > 2% population representation. Between-group comparisons were conducted using generalized estimating equations to account for within-subject correlation.
Results: There were 582,846 men seen in outpatient or ambulatory settings from 2014-2018, including 416,843 Caucasians (71.5%) and 85,773 African Americans (14.7%). Screening rates declined among all age and racial groups. African American men were screened at a lower rate than Caucasian men (see Figure 1). PCa diagnosis rate declined across all age groups, with largest declines in men aged 60. African American men had significantly higher rates of PCa diagnosis than Caucasian men each year ($p<0.01$).
Conclusion: PSA screening and PCa diagnoses declined significantly between 2014 and 2018. African American men were less likely to be screened but more likely to be diagnosed with PCa than Caucasian men. Despite general consensus that African

American men should be more intensively screened, significant racial disparities remain in PCa screening. Further study is warranted to understand patient, provider, and system factors that contribute to disparities in PCa care and outcomes.



Funding: N/A

Podium #79

IMPACT OF MEDICARE REIMBURSEMENT CHANGES UPON RATES OF CONCOMITANT SURGICAL CORRECTION OF SEXUAL DYSFUNCTION AND MALE STRESS URINARY INCONTINENCE

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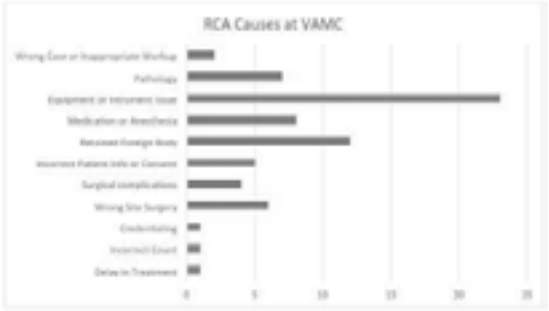
Presented By: Ethan L. Matz, MD

Introduction: Men suffering from both severe erectile dysfunction and stress urinary incontinence may be considered for surgical correction with placement of both an artificial urinary sphincter (AUS) and inflatable penile prosthesis (IPP). To minimize surgical encounters, patients may desire concomitant placement. As of 2015, Medicare policy was changed to deny payment for one of the two devices if placed at the same operative setting. We sought to determine if this policy change was associated with a decrease in the rate of dual device placements.
Methods: The patient information form (PIF) database of Boston Scientific ™(Boston, MA) was queried for patients who received both an AUS and IPP, either concomitantly or as staged procedures, from 2012-2017. The rates of combination and staged procedures were compared for the 3-year intervals both before and after the change in Medicare policy. T-test was used to compare days from first to second prosthetic surgery and Chi-square was used to evaluate trends in the sequence of staged procedures.
Results: Between the study intervals of 2012-2014 and 2015-2017, no statistically significant difference was noted in the incidence of staged or concurrent procedures for men receiving both devices (Table 1). For men undergoing staged procedures, the mean interval between operations did not change significantly over time and was similar regardless of which type of device was placed first. (Table 2). For both intervals, men receiving staged procedures were significantly more likely to receive an AUS prior to IPP ($p<0.001$).Review of contemporary Medicare allowable reimbursement suggests a loss of $12,440-$14,358 per combination case, depending upon the operative setting.
Conclusion: These findings suggest that the decrease in Medicare reimbursement for dual device placement has not significantly affected the rate of procedure performance. Assuming a relatively stable incidence of Medicare coverage among device recipients, this has significant financial implications for providers and institutions. Future investigation and possible efforts to advocate for restoration of reimbursement appear warranted.

Funding: N/A

Podium #80
INVESTIGATION OF UROLOGY INTRAOPERATIVE EVENTS LEADING TO ROOT CAUSE ANALYSIS AT NATIONAL VA MEDICAL CENTERS
Leslie Peard, MD[1], William Gunnar, MD[2], Peter Mills, PhD[2], Andrew Harris, MD[1]
[1]University of Kentucky, [2]US Department of Veterans Affairs
Presented By: Leslie M. Peard, MD

Introduction: Root Cause Analysis (RCA) is a well-known and effective method of analyzing errors made in the healthcare setting. We aimed to categorize events leading to RCA in Urology ORs at VA medical centers in order to increase understanding of when RCA may be appropriate and if where changes may be implemented as a result.
Methods: A dataset of surgery RCAs at VA medical centers that were submitted between the start of fiscal year 2015 to present was created using terms including urology, -gic, -gist, vasectomy; prostatectomy (including TURP, RRP, LRP, PVP), nephrectomy, cystectomy, cystoscopy, lithotripsy, kidney stone, ureteroscopy, ureter, -al, urethral, TURBT, bladder/prostate cancer, and gleason. Cases that did not pertain to an event in a urology OR were excluded. The cases were then categorized based on the type of event.
Results: A total of 62 cases meeting criteria were identified. The most common pattern identified was equipment or instrument issue with 23 cases. For example, 'no sterile flexible ureteroscopes available for scheduled ureteroscopy identified after patient asleep'; 'smoking light cord'. There were 12 events categorized as retained foreign bodies (surgical sponge, retained guidewire), 8 pertaining to medical or anesthesia event (incorrect dosing, STEMI during TURP), and 7 pertaining to pathology errors (missing specimen, incorrect diagnosis later revised, mislabeled specimen). There were 6 wrong site surgeries (wrong side ureteral stent placement, prostate biopsy performed in patient scheduled for cystoscopy), 5 cases with incorrect patient information or consent (TURBT performed without consent), and 4 cases identified as major surgical complications (renal artery injury during ureteroscopy, unrecognized bladder perforation during TURP). In 2 cases the wrong case was performed or there was inappropriate work up. One case caused a significant delay in treatment, one case pertained to an incorrect count, and one case identified lack of appropriate credentialing.
Conclusion: Root cause analysis is an important tool in improving quality and safety of care. We identified several patterns of events leading to root cause analysis pertaining to urologic operating rooms. By categorizing theses variables, we can better identify targets for efforts on improving the quality and safety of our operating rooms.



Funding: N/A

Podium #81

THE IMPACT OF HOSPITAL VOLUME ON SHORT-TERM AND LONG-TERM OUTCOMES FOR PATIENTS UNDERGOING RADICAL NEPHROURETERECTOMY WITH UPPER TRACT UROTHELIAL CARCINOMA

Wilson Sui, MD, Daniel A. Barocas, MD, Sam S. Chang, MD, MBA, David F. Penson, MD, MPH, Matthew J. Resnick, MD, MMHC, Aaron A. Laviana, MD
Department of Urology, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Introduction: The gold standard for treatment of upper tract urothelial carcinoma (UTUC) is radical nephroureterectomy (RNUx). While the surgeon/hospital volume-outcome relationship has been well established for resection of multiple other cancer types both within and outside of urology, it has never been examined for RNUx.
Methods: The National Cancer Database (NCDB) was queried for all cases of UTUC from 2004-2016. Average annual hospital volume for radical nephroureterectomy was calculated per hospital which were then stratified into tertiles. The upper tertile was considered high volume which was greater than 6 RNUx per year while the lower tertiles were considered low volume with 6 RNUx per year. Kaplan-Meier and Cox proportional hazards regression were used to identify independent predictors of overall survival and logistic regression was used to identify predictors of perioperative outcomes.
Results: We identified 37,479 RNUx performed across 1,290 hospitals. There were no differences in baseline health or cancer staging between patients who presents at low vs high volume centers. For short-term perioperative outcomes, treatment at a high-volume center was associated with lower odds of both 30-day (OR 0.73, p = 0.015) and 90-day (OR 0.80, p = 0.016) mortality. In addition, there was lower odds of positive margin (OR 0.82, p = 0.036) and higher use of perioperative chemotherapy (OR 1.29, p <0.001). Median survival at a high-volume center was 66.2 months (95% CI 63.6 – 68.8) vs 63.6 months (95% CI 61.9 – 65.3) low volume center (p = 0.002). On multivariable survival analysis, treatment at a high-volume center was associated with improved hazards of survival (HR HR 0.914, 95% CI 0.859-0.972). This relationship for long-term survival remained consistent on sensitivity analysis where patients who died within 90 days of surgery were removed.
Conclusion: Treatment at a high-volume hospital was associated not only with improved short-term perioperative outcomes such as 30 and 90-day mortality but also improved hazards of survival long-term. The mechanism behind this is likely multifactorial with surgeon volume, facility experience and ancillary support services all playing a role.

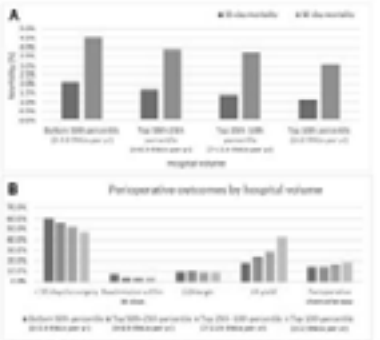


Figure 1. Surgical and perioperative outcomes stratified by hospital volume percentile. (A) shows 30- and 90-day mortality after [illegible] and (B) shows perioperative outcomes[illegible]

Funding: N/A

Podium #82

OVERLAPPING UROLOGICAL SURGERIES AT A TERTIARY ACADEMIC CENTER

Reza Nabavizadeh, Dattatraya Patil, KC Biebighauser Bens, Elizabeth Traorè, Viraj Master, Kenneth Ogan
Emory University
Presented By: Reza Nabavizadeh, MD

Introduction: Overlapping surgeries are practiced routinely at busy academic centers. There has been a recent movement to limit this practice due to fear of suboptimal outcomes assumed to be associated with overlapping surgeries. However, there is not sufficient data, especially in the field of urology, to support or refute this practice. In this study we aimed to evaluate the current practice of overlapping surgeries at a large tertiary academic center.

Methods: We retrospectively reviewed all urologic surgeries performed at Emory University Hospital from July 1, 2016 to July 1, 2018. Patients who received an overlapping surgery were matched to patients who received a non-overlapping surgery in a 1:2 ratio based on attending surgeon, demographic characteristics, ASA classification, and type of procedure. Overlapping surgery was defined as either overlapping “in-room” time, or overlapping “procedure” time, and only the latter were used for our matched analysis. Primary outcomes were operating time, perioperative blood loss, length of stay and mortality using the Georgia Death Index Registry.

Results: We reviewed 8535 urologic surgeries. Although in-room time overlap was seen in 50.5% of cases, procedure-time overlap was observed in only 7.4%. 11 out of the 13 urology attendings performed overlapping surgery, ranging from 0% to 12.1% of their cases. Out of the overlapping cases, 75.8% were elective and 7.5% were due to emergent or urgent add-on cases, and the remaining 16.8% were not clearly defined in the medical records. The average time in the operating room was greater for the overlapping surgeries versus the non-overlapping cohort, 159 versus 145 minutes respectively (p-value 0.027). However, the average operative time while greater for overlapping surgeries (108 minutes) compared to the non-overlapping (97 minutes), this did not reach statistical significance (p-value 0.06). There was no difference in perioperative blood loss, as measured by drop in hemoglobin, or hospital length of stay, or overall survival between the two groups.

Conclusion: The preliminary data from this study suggest that although in-room overlaps are frequently practiced, procedure-time overlapping surgeries constitute a minority of urological cases in our institution. Overlapping surgeries were associated with greater in room time but no significant difference in operative time, blood loss, length of stay, or mortality.

		Overlapping Cases	Control Cases	P-value
Sex	Male	320 (58.2%)	615 (56.1%)	0.413
	Female	230 (41.8%)	482 (43.9%)	
Race	White	357 (64.9%)	731 (66.6%)	0.737
	Black	156 (28.7%)	298 (27.2%)	
	Other	35 (6.4%)	68 (6.2%)	
Marital Status	Married	339 (61.6%)	681 (62.4%)	0.715
	Single	177 (32.2%)	355 (32.4%)	
	Unknown	34 (6.2%)	57 (5.2%)	
ASA Classification	1	23 (4.2%)	35 (3.5%)	0.481
	2	185 (33.6%)	418 (38.1%)	
	3	302 (54.9%)	580 (52.9%)	
	4	40 (7.4%)	65 (5.9%)	
Death	No	521 (94.9%)	1,059 (94.9%)	0.984
	Yes	28 (5.1%)	56 (5.1%)	
Age in Years at the time of surgery	N	550	1,097	0.716
	Mean ± Std	59.8± 13.8	60± 14.7	
Procedure Time in Minutes	N	549	1,097	0.038
	Mean ± Std	107.8± 106.3	97.4± 105.5	
Total In-Room Time in Minutes	N	550	1,097	0.027
	Mean ± Std	159.2± 120.9	145.2± 121.8	
Length of Stay in Hours	N	467	866	0.783
	Mean ± Std	62.1± 98.6	63.7± 103.4	
Hemoglobin drop preoperative compared to post-operative	N	139	259	0.959
	Mean ± Std	2.5± 1.2	2.5± 1.3	

Funding: None

Podium #83
PATIENT PERCEPTIONS OF UROLOGIST'S INTERACTIONS WITH PHARMACEUTICAL COMPANIES

Andrew Rabley, MD[1], Jack Curtis, BS[2], Suha Zaidi[3], Samantha Larson, MPH[4], Lawrence Yeung, MD[1], Vincent Bird, MD[1], M. Louis Moy, MD[1]
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Presented By: Andrew Rabley, MD

Introduction: Urologists and pharmaceutical companies often collaborate to provide innovative care and therapeutic solutions. However, these relationships may lead to conflicts of interest. This study sought to examine patient's perceptions of interactions between urologists and pharmaceutical companies and the context in which they occur.
Methods: Patients, age 18 years and older, presenting to the Urology Clinic at the University of Florida were asked to participate in the study by completing an anonymous survey pertaining to physician interactions with pharmaceutical companies. All collected data was analyzed using basic frequency and chi-square procedures. University of Florida IRB deemed this study exempt.
Results: 1,002 patients completed the survey. Of those patients, 73.8% felt that urologists should be permitted to work with pharmaceutical companies. 51.0% felt their urologist should be allowed to receive payments from these interactions and 53.4% of patients felt their urologist would remain impartial despite having received payments. Interestingly, 98.6% never investigated independently or asked their urologist if they had received payments for collaborations with pharmaceutical companies. 90.2% were unaware that this information is publically available. 58.6% of patients felt that urologists have a responsibility to disclose payments received within the last 12 months. However, 54.4% of patients did not feel as though payments made more than 12 months ago needed to be disclosed. Although 59.9% of patients stated that knowing about payments within the last 12 months would not change their level of trust in their urologist, 46.0% would perceive their urologist to be a leader in the field if they did collaborate with pharmaceutical companies. Similarly, 52.7% noted that they would perceive their urologist as having better knowledge of 'cutting-edge' healthcare and 65.2% thought their urologist would have better access to clinical trials and studies having had received payments in the last 12 months.
Conclusion: In general, patients approve of urologist interactions with and payments from pharmaceutical industry partners. Disclosure, in the short-term, is valued and enhances patient perceptions of their urologist as a knowledgeable, well-informed leader in the field. Urologists may consider strategies to effectively inform patients of their

relationships with pharmaceutical companies and encourage a dialogue around potential impacts to care.

Table 1: Patient Demographics (n = 1,002 patients)

Age (years)	18-29	30-39	40-49	50-59	60-69	>70	Unanswered
	93	78	84	139	290	342	2
Gender	Male	Female	Other				
	675	324	3				
Race	Black or African American	Asian	American Indian/Alaska Native	Hispanic	Caucasian	Hawaiian or Pacific Islander	Unanswered
	100	55	11	8	848	2	37
Level of Education	High School or Less	College	Graduate or Professional School	Unanswered			
	333	379	238	30			
Annual Household Income (Dollars)	$0-$24,999	$25K-$49,999	$50K-$99,999	$100K-$149,999	$150K-$249,999	>$250K	Unanswered
	274	202	259	43	52	15	117

Funding: N/A

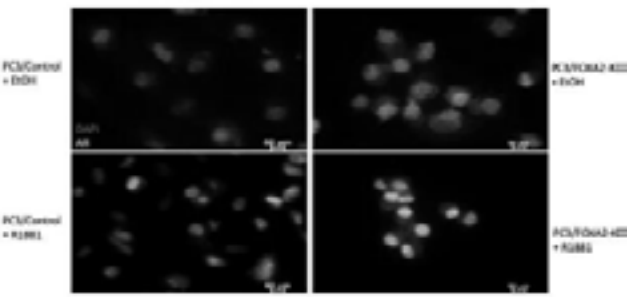
Poster #1
SMALL MOLECULE INHIBITOR ASR600 TARGETS ANDROGEN RECEPTOR SIGNALING IN CASTRATION-RESISTANT PROSTATE CANCER
William Rawls, Andrew Park, Thomas FitzGibbon, Murali Ankem
University of Louisville, Dept. of Urology, Louisville, KY
Presented By: William F. Rawls, MD

Introduction: Understanding androgen receptor (AR) signaling in prostate cancer (CaP) cells is essential for targeted therapy for both castration-sensitive and castration-resistant prostate cancer (CRPC). Previously we reported natural compound Urolithin A (Uro A), inhibits AR signaling and suppresses growth of CRPC. We developed a series of pro-drug conjugates of Uro A and our initial structure-activity relationship (SAR) studies led to the identification of three small molecules. We investigated mechanisms of these molecules in*in vitro*and *in vivo*models of CRPC.
Methods: Effects were assessed on CRPC using cell proliferation, immunofluorescence, proteasome activity, ubiquitination assays, qRT-PCR, Western blot analysis and xenograft studies. All experiments were repeated in triplicates and analyzed with unpaired Student's t-test and one way ANOVA.
Results: All three compounds inhibited the growth of CRPC cell lines (IC50 of ASR-600 in C42b, MDVR, LnCap:800nm & 22RV1:900nm) more effectively than the parent compound UroA. Based on IC50 concentration; ASR600 demonstrated better efficacy by inhibiting AR signaling in CRPC cell lines more effectively than UroA.Model system and molecular dynamics (MD) stimulation studies suggest that ASR600 binds to the ligand and nuclear binding domains of AR and blocks conformation changes, allowing AR degradation in the cytosol. Interestingly, immunofluorescence and western blotting analysis revealed that ASR600 inhibited AR, PSA and AR-V7 expression. Further, thermal shift assay confirmed that ASR 600 binds to AR in presence and absence of dihydrotestosterone. ASR600 induced ubiquitination-associated AR degradation in CaP cells following treatment with proteasome inhibitor MG-132 at different time points in both C4-2B and 22RV1 cells. Upon measuring the time dependent proteasome activity, no induction of proteasome activity was observed until 12hr suggesting that ASR-600 is not a proteasome inhibitor. Our *in vivo*studies, suggest that oral administration of ASR-600 effectively inhibits the tumor growth from CRPC cell lines (C4-2B, and 22RV1) in xenograft mice, which was further confirmed by histological analysis.
Conclusion: Overall, these results emphasize ASR-600 to be a promising small molecule when compared to UroA. ASR-600 targets AR signaling which remains an important target for the development of effective treatment of CRPC.
Funding: N/A

Poster #2
LOSS OF FOXA2 IN NEUROENDOCRINE PROSTATE CANCER PROMOTES FUNCTIONAL ANDROGEN RECEPTOR RE-EMERGENCE
Zachary M. Connelly, PhD[1,2], Shu Yang, MD[1], Nazih Khater, MD[3], Xiuping Yu, PhD[1]
[1]LSUHSC Shreveport, Dept of Biochemistry, [2]Dept of Surgery, [3]LSUHSC Shreveport, Dept of Urology
Presented By: Zachary M. Connelly, PhD

Introduction: Prostate cancer (PCa) is the leading diagnosed cancer in American men. Current treatments for PCa include surgery, radiation, and hormone therapy. The gold standard in therapeutic interventions for PCa is anti-androgens; however, PCa can relapse, leading to castration-resistant PCa and eventually to neuroendocrine prostate cancer (NEPCa). NEPCa is the most aggressive form of PCa with a life expectancy of less than a year following diagnosis with no current treatment. Hallmarks of NEPCa include loss of the androgen receptor (AR), expression of neuronal markers such as synaptophysin, chromogranin A, and FOXA2, as well as morphological changes resembling a stem-like phenotype. The pioneer transcription factor FOXA2 is expressed during embryonic prostate development and is lost upon birth. Its resurgence occurs

in NEPCa development. Understanding the roles of FOXA2 is crucial to understanding NEPCa development and progression.
Methods: FOXA2 was stably knocked down in NEPCa PC3 cells (PC3/FOXA2-KD). Additionally, FOXA2 was stably overexpressed in adenocarcinoma (LNCaP). All cells were subjected to RNA and protein analysis. Immunofluorescence was used to visualize AR. Further downstream AR target genes were subjected to mRNA analysis.
Results: When FOXA2 was knocked down in AR-null PC3 cells, AR increased at both the mRNA transcript and protein levels. Additionally, in LNCaP cells where FOXA2 was overexpressed, AR mRNA and protein levels were decreased. In PC3/FOXA2-KD cells. AR localized to the nucleus upon androgen stimulation (Figure 1). Furthermore, androgen supplementation drove AR target gene stimulation in PC3/FOXA2-KD cells, including PSA and TMPRSS2, but not in the PC3/Control cells. Overall in AR-null PC3 cells, when FOXA2 is knocked down, AR is re-expressed, shows proper nuclear localization, and lastly activated its known target genes with proper hormone signaling.
Conclusion: Understanding mechanisms of how PCa progresses into NEPCa while losing the major therapeutic target, AR, remains unclear. We provide some of the first evidence of endogenous AR re-emergence in NEPCa cells. We show an inverse relationship of FOXA2 and AR in two different human PCa cell lines. By further understanding FOXA2's role in NEPCa, through its regulation of AR expression, previous FOXA2-positive/AR-null NEPCa may be susceptible to anti-androgens again.
Figure 1. AR localizes to the nucleus of PC3/FOXA2-KD cells upon androgen stimulation.



Funding: XY: DOD, NIH R01, LSUHSC FWCC; ZC: Carroll Feist Pre-Doctoral Fellowship

Poster #3
ASSOCIATION BETWEEN ONCOTYPE DX GENOMIC PROSTATE CANCER SCORE AND FINAL TUMOR PATHOLOGY
Christopher Chew[1], Marcio Covas Moschovas, Urology[2], Seetharam Bhat, Urology[2], Fikret Onol, Urology[2], Travis Rogers, Urology[2], Shannon Roof, Urology[2], Marco Sandri[2], Cathy Jensen, Urology[2], Vipul Patel, Urology[2]
[1]University of North Carolina School of Medicine, [2]AdventHealth Global Robotics Institute
Presented By: Christopher Yee Aun Chew

Introduction: The *Oncotype DX* is a clinically validated 17-gene-based genomic assay that provides a genomic prostate score (GPS – scale 0-100) measuring the heterogeneous nature of prostate tumors. Currently, there are no known studies measuring the association between the GPS and final tumor pathology: extraprostatic extension (EPE), positive surgical margins (PSM), seminal vesical invasion (SVI), lymphovascular invasion (LVI), and perineural invasion (PNI). The objective was to investigate the association between the GPS and final tumor pathology.

Methods: We performed a retrospective study evaluating 635 patients (prospectively collected) who underwent radical prostatectomy and the *Oncotype DX* assay at a reference prostate cancer center. We used a multivariable logistic regression in Stata 15 and R 3.6.1 to evaluate the association between the GPS and EPE, PSM, SVI, LVI, and PNI. We included the covariates age, clinical stage, cancer stage, PSA level, and Gleason score to account for their effects on the final tumor pathology. Patients were divided into 4 groups according to their GPS per 20 units (1-19, 20-39, 40-59, and 60-79).
Results: The median time between the *Oncotype DX* assay and surgery was 176 days. The median age, GPS, and PSA levels were 64 years old, 29, and 5.7ng/mL respectively. A statistically significant association was found between the GPS and EPE with an increasing trend in odds ratios for higher GPS groups (group 2: OR 1.62, group 3: OR 3.77, group 4: OR 9.41). The percentages of cases with EPE were also larger in the higher GPS groups (18.60%, 31.38%, 48.88%, 76.00% respectively). The median GPS amongst patients with EPE and without EPE were 35.6 and 28.3 respectively. Additionally, the GPS revealed significant modifier effects on the relationship between PSA and EPE, PSM, and SVI.
Conclusion: The *Oncotype DX* GPS presented a statistically significant association to the extraprostatic extension described in the final tumor pathology report suggesting that the GPS may be a useful adjunct in risk stratification, adjuvant treatment selection, and surgical strategies.
Funding: N/A

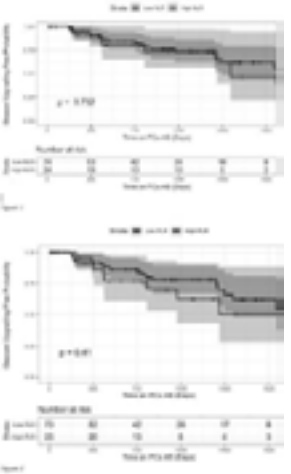
Poster #4

NEUTROPHIL LYMPHOCYTE RATIO AND PLATELET LYMPHOCYTE RATIO DO NOT PREDICT UPGRADING IN A RACIALLY DIVERSE PROSPECTIVE STUDY OF MEN WITH PROSTATE CANCER ON ACTIVE SURVEILLANCE

T. Max Shelton, Jacob Greenberg, L. Spencer Krane
Department of Urology, Tulane University School of Medicine, New Orleans, LA, USA
Presented By: Thomas Shelton, MD

Introduction: Neutrophil to lymphocyte (NLR) and platelet to lymphocyte ratios (PLR) have proven to be useful clinical biomarkers for prognosis in several malignancies. Their predictive value has been less clearly demonstrated with prostate cancer(PCa), particulary, their utility in low risk patients electing active surveillance(AS). Our study analyzes the value of NLR and PLR for predicting disease upgrading and treatment in PCa patients on AS.
Methods: We identified 98 patients who met inclusion criteria in our cohort of 274 men diagnosed with PCa on AS. We restricted inclusion criteria to individuals who had a CBC within 3 months of diagnosis and who had at least two previous prostate biopsies. Patients were categorized into high and low groups based on NLR and PLR's above and below the third quartile. Statistical analysis was performed using R Studio and all p values <0.05 were considered statistically significant.
Results: The 2.5 and 5 year Gleason upgrading free probability for our high NLR cohort was 73.9%(CI 56.3% to 97.0%) and 46.2%(CI 22.4% to 95.1%) compared to 76.3%(CI 65.7% to 88.7%) and 61.7%(CI 47.7% to 80.0%) in the low NLR chort(p=0.73). The 2.5 and 5 year treatment free probability for our high NLR group was 56.8%(CI 38.1% to 84.8 %) and 37.9%(CI 19% to 75.8%). Our Low NLR group had a 2.5 and 5 year treatment free probability of 74.4%(CI 63.5% to 87.1%) and 59.6%(CI 45% to 78.9%)(p=0.27). The 2.5 and 5 year Gleason upgrading free probability for our High PLR cohort was 73.5%(CI 57.3% to 94.2%) and 60.1(CI 41.4% to 87.4%) compared to 76.8%(CI 65.8% to 89.65) and 58.1%(CI 42.2% to 80.1%) in our Low PLR group(p=0.41). Treatment free probability showed similar results with a non-significant p-value. Multivariate cox regression analysis demonstratated these groups were not significant predictors of upgrading or treatment.
Conclusion: Despite their usefulness in many types of malignancy, NLR and PLR were not predictors of upgrading or treatment in men on AS for localized PCa in our cohort. The prostate may be too small to exert a systemic effect on hematologic paramaters or

the low grade status of PCa in AS patients that fails to produce significant exogenous signaling effects.
Funding: N/A



Poster #5
IMPACT OF PROSTATE-SPECIFIC ANTIGEN DOUBLING TIME ON TIME TO METASTASIS AND OVERALL SURVIVAL IN PATIENTS WITH NONMETASTATIC CASTRATION-RESISTANT PROSTATE CANCER
Stephen J. Freedland[1,2], Krishnan Ramaswamy[3], Stanislav Lechpammer[4], Jack Mardekian[3], Neil M. Schultz[5], Ahong Huang[6], Li Wang[6], Onur Baser[7], Daniel George[8]
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Presented By: Stephen J. Freedland, MD

Introduction: Prostate-specific antigen doubling time (PSADT) is a useful marker for predicting outcomes in prostate cancer (PC), particularly in hormone-sensitive disease. However, PSADT has not been well validated in patients with nonmetastatic castration-resistant (nmCR) PC. This study examined the prognostic impact of PSADT on time to metastasis and overall survival (OS) among patients with nmCRPC in the Veterans' Health Administration (VHA) database.
Methods: VHA patients in this retrospective study were males with PC who had medical or surgical castration between 1Jan2012 and 31Dec2016. Patients actively receiving luteinizing hormone-releasing hormone treatment with 2 PSA increases after castration were identified. The third PSA value 25% and 2 ng/mL higher than the first PSA value was designated as the CRPC date (index date), and patients had continuous VHA enrollment for 12 months pre- and 12 months post-index date. Patients were followed until death or disenrollment, whichever occurred earlier. PSADT was calculated as the natural log of 2 divided (Ln2) by the log slope of PSA using all PSA values after CRPC until metastases. Patients were categorized into 2-month cohorts. Cox regression model adjusted for demographics and clinical characteristics explored the association between PSADT cohorts and time to metastasis and OS.
Results: We identified 3579 patients of whom 1389 (38.8%) had disease progression to mCRPC while 2190 (61.2%) remained with nmCRPC. Overall, average age of patients was 73 years. PSADT was calculable in 2800 patients with an average PSA value of

25.49 ng/mL. After a median follow-up of 820 days, the median PSADT was 17 months. Compared with the PSADT >12 months cohort, PSADT 2, >2 to 4, >4 to 6, >6 to 8, and >8 to 10 months cohorts were associated with higher risk of metastasis (hazard ratio [HR]: 33.77, CI: 25.93-43.96; HR: 14.32, CI: 11.83-17.32; HR: 6.58, CI: 5.42-7.98, HR: 4.14, CI: 3.27-5.25; HR: 3.14, CI: 2.45-4.03, respectively) and death (HR: 12.27, CI: 9.20-16.35; HR: 5.32, CI: 4.26-6.64; HR: 3.50, CI: 2.74-4.47, HR: 2.29, CI: 1.68-3.14; HR: 1.64, CI: 1.14-2.37, respectively).
Conclusion: Short PSADT was strongly associated with shorter time to metastasis and poor survival in patients with nmCRPC. Newer treatments indicated for nmCRPC should be considered for patients at high risk.
Funding: Pfizer Inc. and Astellas Pharma, Inc.

Poster #6
OVERALL SURVIVAL BY RACE IN PATIENTS WITH CHEMOTHERAPY-NAÏVE METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (MCRPC) WHO WERE TREATED WITH ABIRATERONE ACETATE OR ENZALUTAMIDE
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Presented By: Daniel George, MD

Introduction: African Americans (AA) have higher mortality from mCRPC than whites (W) and some data have suggested differential responses to treatment for AA vs W. Using real-world data, we evaluated overall survival (OS) in AA vs W patients with chemotherapy-naïve mCRPC who were treated with abiraterone acetate or enzalutamide.
Methods: A retrospective study using the Veterans' Health Administration (VHA) database was conducted with male PC patients (18 years), who had surgical or medical castration from April 1, 2013 to March 31, 2018. The index date was the first prescription claim date for abiraterone acetate or enzalutamide following surgical or medical castration. Patients had continuous VA health plan enrollment for 12 months pre- and post-index date, with no chemotherapy for 12 months pre-index date. Patients were followed until death or disenrollment, whichever occurred earlier. Unadjusted and Kaplan-Meier survival analyses adjusted for demographic and clinical characteristics were utilized to calculate survival time. Multivariate Cox proportional hazards models assessed the relationship between race and OS.
Results: This study included 2123 W and 787 AA men with mCRPC, mean age 74 and 71 years, respectively. The median follow
for W patients. AA patients were more likely to have comorbid hypertension (77.1% vs 67.1%; *P*<.0001), type 2 diabetes (38.1% vs 29.3%; *P*<.0001), and liver damage or abnormality (8.8% vs 5.2%; *P*=.0003) than W patients. From the unadjusted analysis, the median Kaplan-Meier estimated OS was 910 days for AAs and 784 days for Ws; AAs had better OS than Ws (HR=0.887; 95% CI 0.790-0.996). From the adjusted analysis, the median Kaplan-Meier estimated OS was 918 days for AAs and 781 days for Ws; AAs still had better OS than Ws (HR=0.826; 95% CI 0.732-0.933).
Conclusion: This large retrospective study provides the first evidence that chemotherapy naïve AA men with mCRPC may have better OS with abiraterone acetate or enzalutamide treatment than Ws. Prospective trials are needed to validate this finding and to investigate the mechanisms underlying racial disparities in outcomes with new hormonal therapies.
Funding: Pfizer Inc. and Astellas Pharma, Inc.

Poster #7

SURVIVAL RATES AND ECONOMIC OUTCOMES IN PATIENTS WITH CHEMOTHERAPY-NAÏVE METASTATIC CASTRATION-RESISTANT PROSTATE CANCER WHO WERE TREATED WITH ABIRATERONE ACETATE OR ENZALUTAMIDE

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Presented By: Daniel George, MD

Introduction: Prostate cancer (PC) is the second leading cause of cancer death among US males, and accounts for a large proportion of health expenditures. The objective of this study was to evaluate overall survival (OS) and economic outcomes in patients with chemotherapy-naïve metastatic castration-resistant prostate cancer (mCRPC) treated with abiraterone acetate or enzalutamide.

Methods: A retrospective analysis was performed on 3174 male patients (18 years) using the Veterans' Health Administration (VHA) database. Patients with mCRPC who had evidence of surgical or medical castration, 1 pharmacy claim for abiraterone acetate or enzalutamide (first claim date = index date) following surgical or medical castration, and no chemotherapy 12 months pre-index date were identified from 1Apr2014 to 31Mar2017. Patients had continuous VHA enrollment for 12 months pre- and post-index date and were followed until death or disenrollment. Kaplan-Meier analysis estimated OS, and Cox proportional hazards regression models examined the impact of treatment on survival. Patients initiating abiraterone acetate were 1:1 propensity score matched (PSM) with those initiating enzalutamide. All-cause and PC-related resource use and costs per-patient-per-month (PPPM) were compared between the matched cohorts during 12 months post-index date.

Results: This study included 1945 abiraterone acetate- and 1229 enzalutamide-treated patients with mCRPC of mean age 73 and 74 years, respectively. After a median follow -treated patients and abiraterone acetate-treated patients had median survival times of 30 months and 26 months, respectively. In the Cox analysis, enzalutamide-treated patients had better survival compared with abiraterone acetate-treated patients (HR=0.87; 95% CI 0.78-0.96). After PSM, there were 1160 patients left in both cohorts. Compared with abiraterone acetate-treated patients, enzalutamide-treated patients had fewer mean all-cause outpatient visits PPPM (2.51 vs 2.86; *P*<.0001) and fewer mean PC-related outpatient visits PPPM (0.86 vs 1.03; *P*<.0001). Enzalutamide-treated patients also had lower mean all-cause outpatient costs PPPM ($2,588 vs $3,115; P<.0001), mean total costs PPPM ($8,085 vs $9,092; P=.0002), mean PC-related outpatient costs PPPM ($1,356 vs $1,775; P<.0001), and mean total costs PPPM ($6,321 vs $7,280; P<.0001) than abiraterone acetate-treated patients.

Conclusion: Based on these results, patients with chemotherapy-naïve enzalutamide-treated mCRPC had better survival and significantly lower resource use and healthcare costs than abiraterone acetate-treated patients.

Funding: Pfizer Inc. and Astellas Pharma, Inc.

Poster #8

COMPARATIVE EFFICACY OF ENZALUTAMIDE, APALUTAMIDE AND DAROLUTAMIDE FOR TREATMENT ON NON-METASTATIC CASTRATE-RESISTANT PROSTATE CANCER: A NETWORK META-ANALYSIS

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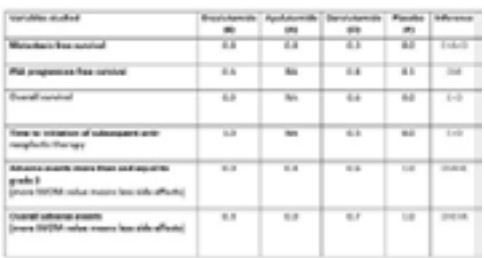
Presented By: Jatinder Kumar

Introduction: Annual incidence of non-metastatic castrate-resistant prostate cancer is approximately 50000, with >50% progressing to metastasis within five years. Recently three second generation androgen receptor antagonists (Apalutamide, Enzalutamide and Darolutamide) have been studied for this subset of population. The Phase-III trials have shown almost similar efficacy, leaving clinicians with confusion in choosing one over the other. We performed a network meta-analysis (NMA) to compare their efficacy and side effects.
Methods: A systematic review and NMA of randomized controlled Phase-III trials were done to compare metastasis-free survival (MFS), PSA progression-free survival (PFS), overall-survival (OS), time to initiation of chemotherapy (TTC) and adverse event (AE) for the three drugs. Indirect comparison was obtained using multivariate analysis fixed method within arrow-head shaped geometry, with placebo as a common comparator. Surface under cumulative ranking was used to determine relative ranking. AEs were analyzed as two groups: overall AE and AE grade 3.
Results: Total population was 4117 (Apalutamide:806, Enzalutamide:933, Darolutamide:955 and Placebo:1423). Darolutamide showed a higher rate of metastasizing compared to Apalutamide (OR:49, 95%CI: 1.06-2.10) and enzalutamide (OR:1.44, 95%CI: 1.05-2.04). Rate of metastasis was similar for Enzalutamide and Apalutamide (OR:1.02, 95%CI: 0.72-1.45).
No significant difference was found between Darolutamide and Enzalutamide for PSA-PFS (OR:1.07, 95%CI: 0.65-1.75) and OS (OR:0.81, 95%CI: 0.58 – 1.14). TTC was shorter for Enzalutamide (OR:0.39, 95%CI: 0.25-0.59) than Darolutamide.
Enzalutamide had significantly more AE grade 3 compared to Apalutamide (OR:6.15, 95%CI: 4.12 - 9.19) and Darolutamide (OR:7.17, 95%CI: 4.78 – 10.75), respectively. Overall AE was higher in Apalutamide (OR:0.03, 95%CI: 0.02-0.05) compared to Darolutamide and Enzalutamide (OR:0.41, 95%CI: 0.24 – 0.68). Enzalutamide had significantly higher AE compared with Darolutamide (OR:14.51, 95%CI: 9.85-21.19).
Conclusion: Enzalutamide and apalutamide had similar MFS rates. Enzalutamide and Apalutamide had higher MFS rates compared with Darolutamide. However, enzalutamide has higher OS and TTC compared with Darolutamide. It is noteworthy that Enzalutamide has higher rate of overall and AE grade 3 than Darolutamide. While side effects are limiting the usage of Enzalutamide, Darolutamide can be considered the second option.



Funding: N/A

Poster #9

DAROLUTAMIDE DELAYS PROSTATE-SPECIFIC ANTIGEN PROGRESSION AND TIME TO NEXT ANTICANCER THERAPIES IN PATIENTS WITH NONMETASTATIC CASTRATION-RESISTANT PROSTATE CANCER

Ron Tutrone[1], Neal D. Shore[2], Matthew R. Smith[3], Teuvo L. J. Tammela[4], Albertas Ulys[5], Eglis Vjaters[6], Sergey Polyakov[7], Mindaugas Jievaltas[8], Murilo Luz[9], Boris Alekseev[10], Iris Kuss[11], Marie A. Le Berre[12], Amir Snapir[13], Toni Sarapohja[13], Karim Fizazi[14]

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Presented By: Ron Tutrone, MD

Introduction: Asymptomatic patients (pts) with nonmetastatic castration-resistant prostate cancer (nmCRPC) would benefit from treatment (Tx) that delays disease progression with minimal Tx-related adverse events (AEs). Darolutamide (DARO) is a structurally unique androgen receptor antagonist. *In vitro* and phase I/II studies suggest low risk of AEs and drug–drug interactions. DARO prolonged metastasis-free survival (MFS) compared with placebo (PBO) (40 vs 18 mo; HR 0.41; 95% CI 0.34–0.50; P<0.001) in ARAMIS. Interim overall survival (OS) favored DARO (HR 0.71; 95% CI 0.50–0.99; P=0.045). DARO's impact on prostate-specific antigen (PSA), disease progression, safety, and quality of life (QoL) in ARAMIS is reported here.

Methods: 1509 pts were randomized 2:1 to DARO 600 mg twice daily (n=955) or PBO (n=554) while continuing androgen deprivation therapy. The primary endpoint was MFS. Secondary and exploratory endpoints included OS, time to cytotoxic chemotherapy, time to antineoplastic therapy, and safety. Exploratory endpoints included time to PSA progression and QoL, assessed by Brief Pain Inventory-Short Form (BPI-SF), Functional Assessment of Cancer Therapy-Prostate (FACT-P), and European Organisation for Research and Treatment of Cancer QoL Prostate Cancer module (EORTC-QLQ-PR25).

Results: DARO elicited an overall PSA response of 50% in 84% of pts vs 8% with PBO; 51% of pts had 90% PSA decline with DARO. DARO substantially delayed time to PSA progression (33 vs 7 mo; HR 0.13; 95% CI 0.11–0.16; P<0.001), time to cytotoxic chemotherapy (not reached [NR] vs 38 mo; HR 0.43; 95% CI 0.31–0.60; P<0.001), and time to antineoplastic therapy (NR vs NR; HR 0.33; 95% CI 0.23–0.47; P<0.001) compared with PBO. Tx-emergent AEs with 5% frequency or grade 3–5 were comparable between study arms; only fatigue had an overall incidence of >10%. AE-related discontinuation rates were similar between study arms. AEs of interest (including fracture, falls, seizures, weight decrease, hypertension, and cognitive disorder) showed minimal or no difference in incidence between study arms. QoL was similar for DARO and PBO; differences in least-squares mean time-adjusted area under curve scores for BPI-SF, FACT-P, and EORTC-QLQ-PR25 subscales favored DARO.

Conclusion: DARO delays disease progression and subsequent Tx for metastatic CRPC compared with PBO, preserving QoL without increasing the incidence of key AEs.

Funding: Bayer AG and Orion Pharma

Poster #10

PREDICTORS OF FUTURE INTERVENTION IN ACTIVE SURVEILLANCE PATIENTS USING THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE

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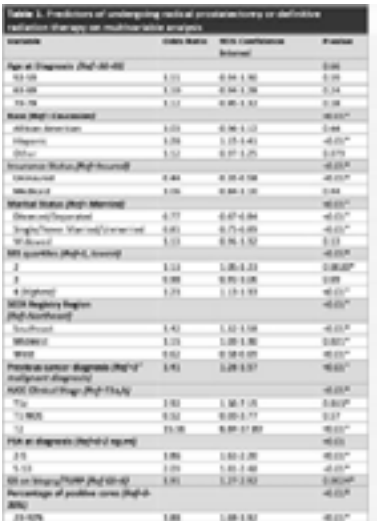
Presented By: John Zachary Benton

Introduction: Active surveillance (AS) is a care option for patients with favorable risk prostate cancer (PCa). AS aims to preserve quality of life, without compromising oncologic outcomes, by deferring definitive curative interventions. However, a subset of these patients ultimately will undergo radical prostatectomy (RP) or definitive radiation therapy (XRT). Our objective was to identify predictors of receiving definitive RP or XRT amongst AS patients, using a validated, population-based, nationally representative cohort.

Methods: The Surveillance, Epidemiology, and End Results (SEER) Prostate Active Surveillance/Watchful Waiting database was used to identify AS patients diagnosed with very low- or low-risk PCa between 2010 and 2015. Our primary outcome was undergoing RP or definitive XRT. Univariable and multivariable logistic regression analyses were used to evaluate whether patient-level demographic, socioeconomic, and oncologic data were predictors of our primary outcome. Statistical significance was set at $p<0.05$.

Results: Study cohort included 48,691 patients. Median patient age was 64.0 years (Interquartile range: 59.0-69.0). 68.4% of patients were Caucasian and 15.2% were African American. Median prostate-specific antigen (PSA) level was 5.4 ng/ml (IQR 4.3-6.8). 99.3% were diagnosed with Gleason Score (GS) 6 on biopsy, with median percentage of positive cores of 16.7% (IQR 8.3%-28.6%). Following an initial period of AS, 21,278 (43.7%) patients underwent definitive therapy, either RP (3,873) or XRT (17,405). On multivariable regression analysis (Table 1), positive predictors of receiving definitive therapy were Hispanic race (odds ratio 1.28, $p<0.01$), having insurance (OR 2.26, $p<0.01$), being married (OR 1.27, $p<0.01$), socioeconomic status (OR 1.23 for highest versus lowest quartile, $p<0.01$), diagnosis in Southeastern (OR 1.42, $p<0.01$) or Midwestern regions (OR 1.15, $p=0.02$), previous cancer diagnosis (OR 1.41, $p<0.01$), higher clinical stage (OR 15.56 for T2 versus T1 a/b, $p<0.01$) PSA level (OR 2.09 for PSA 5-10 versus 0-2 ng/ml, $p<0.01$), initial GS (OR 1.90 for GS 6 versus <6, $p<0.01$), and percentage positive cores at diagnosis (OR 2.42 for 80-100% versus 0-20%, $p<0.01$).

Conclusion: Multiple demographic, socioeconomic and oncologic factors influence AS patients' decision to eventually opt for treatment. Awareness of these factors allows urologists to better understand AS patients' future behavior patterns and individualize their care in order to, potentially, improve their psychosocial and oncologic outcomes.



Funding: N/A

Poster #11
COMORBIDITY BURDEN VERSUS PATIENT-REPORTED HEALTH IN DETERMINING TREATMENT FOR PROSTATE CANCER

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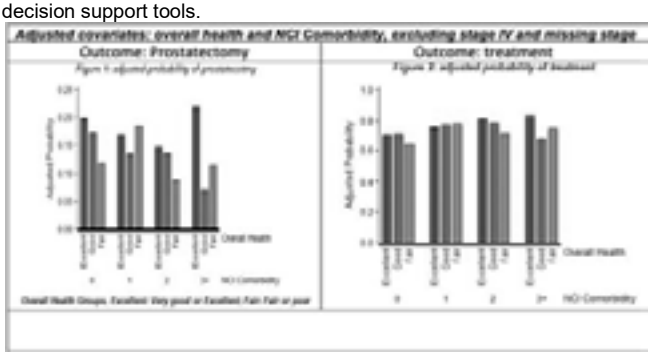
Presented By: Stephen McMahon, B.S.

Introduction: Health status is an essential consideration in the management of men with prostate cancer. However, many men with significant comorbidity receive aggressive treatment for prostate cancer despite limited potential benefit. In this context, we sought to determine whether patient-reported health status, more so than comorbidity, drives receipt of treatment in men with prostate cancer.
Methods: We identified men age>65 diagnosed with non-metastatic prostate cancer from 2004–2013 within the SEER-CAHPS database. SEER-CAHPS combines cancer registry data with Medicare claims and CAHPS surveys, which includes patient-reported health data. For each patient, we ascertained the National Cancer Institute Comorbidity Index (NCI) score and overall health status as well as demographics, cancer characteristics, as well as other indicators of patient function. We constructed multivariable logistic regression models for two outcomes: prostatectomy and any treatment (surgery, radiation, hormone therapy). We then calculated model-adjusted probabilities for each outcome by NCI score and patient-reported overall health status.
Results: Among 3,195 men, 523 (6.4%) underwent prostatectomy while 2256 (70.6%) were managed expectantly in the 12 months after prostate cancer diagnosis. Overall, men most often rated their overall health as Excellent/Very Good (42.3%) followed by Good (34.9%) and Fair/Poor (20.2%). Patient-reported health was significantly associated with NCI score ($p<0.001$) but only weakly correlated ($r=0.130$). In the multivariable analysis, age and cancer characteristics significantly related to treatment ($p<0.05$) but not comorbidity or patient-reported health. However, as illustrated by the Figure, there was a significant interaction between NCI score and patient-reported health status for surgery when considering those with a good health status (predicted probability: 0.24, 95% CI 0.17-0.31, $p<0.001$ for Comorbidity =1, and predicted probability: 0.37, 95% CI 0.32-0.42, $p<0.001$ for Comorbidity =0). For non-comorbid patients, fair or poor health status is related to lower probability of surgery. (adjusted OR:

0.57, 95%CI 0.35-0.95, P=0.03 compared to Excellent/Very Good; adjusted OR: 0.60, 95% CI 0.36-0.98, P=0.04 compared to Good).
Conclusion: Though treatment for prostate cancer predominantly relates to age and cancer severity, receipt of surgery appears responsive to perceived patient health for men with high comorbidity burden. Greater understanding of this interplay between empiric and subjective assessments in decision-making may inform the design of clinical decision support tools.



Funding: N/A

Poster #12
IMPACT OF INTRA-DUCTAL CARCINOMA ON CLINICAL OUTCOMES IN MEN WITH PROSTATE CANCER: SYSTEMATIC REVIEW AND META-ANALYSIS
Jatinder Kumar, Fellow[1], Shiva Gautam, Professor[2], Daniel Norez, Assistant[2], Muhammed Umar Alam, Fellow[3], Karthik Tanneru, Fellow[1], Soroush Bazargani, Resident[1], Seyedbehzad Jazayeri, Resident[1], Joseph Costa, Professor[3], Mark Bandyk, Associate Professor[1], Hariharan Palyapalay Ganapathi, Assistant Professor[1], Shahriar Koochekpour, Professor[3], KC Balaji, Professor[3]
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Presented By: Jatinder Kumar

Introduction: Intra-ductal carcinoma of prostate (IDC-P) is an aggressive variant of prostate cancer (PC) that is associated with characteristic molecular and genetic features with the incidence of approximately 20%. The available studies have shown that identification of IDC-P in PC tissue to be an independent variable in the prediction of pathological stage, tumor volume, Gleason score, and treatment failure. The effect of IDC-P on clinical outcomes is yet to be clarified. We carried out a systematic review and meta-analysis of clinical outcomes in patients with IDC-P.
Methods: A meta-analysis by fixed-effect model was conducted using 12 studies reporting hazard ratio (HR) and meeting our selection criteria, which included the patient population, intervention, outcome, study design approach, and selected endpoints. In men with PC with or without IDC-P; we compared castration-resistant free survival (CFS) and overall survival (OS) for metastatic-PC with IDC-P (Group 1), biochemical recurrence free (BRF) and/or cancer-specific survival (CSS). Patients were analyzed in two groups; with localized-PC and IDC-P undergoing radical prostatectomy (Group 2a) or radiotherapy (Group 2b).
Results: Patients with metastatic-PC and IDC-P (Group 1), the pooled HR for CFS and OS were 1.69 (95% Confidence Interval (CI): 1.30-2.21) and 2.00 (95% CI: 1.38-2.91), respectively. In group 2a, BRF and CSS, patients with IDC-P had high HR 2.63 (95% CI: 1.99-3.49) and 2.87 (95% CI: 1.65-5.01), respectively. Likewise, IDC-P in group 2b patients demonstrated a HR of 2.04 (95% CI: 1.10-3.78) for BRFS.
Conclusion: In patients with IDC-P demonstrated poorer clinical outcomes including lower BRF following radical prostatectomy, radiation therapy either in primary and

salvage settings than in the patients without IDC-P. In addition, metastatic-PC patients with IDC-P had shorter time to progression to castration-resistance and poorer OS as compared with localized PC. Our analysis and review of the literature suggest that IDC-P may be used as a novel prognostic and predictive morphological evidence to influence clinical management in men with PC including pelvic lymph node dissection and pelvic radiotherapy.
Funding: N/A

Poster #13
AFRICAN AMERICANS HAVE HIGHER RATES OF INVASIVE PROSTATE CANCER ON INITIAL DIAGNOSIS AND HIGHER RATES OF MORTALITY IN MISSISSIPPI
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Presented By: Kieran Hynes, MD

Introduction: Prostate cancer is the most common non-cutaneous malignancy in men. Based on American Cancer Society Data, Mississippi has second highest mortality rate for prostate cancer, just behind the District of Columbia. African American men (AAM) have been shown to have higher incidence of and mortality from prostate cancer. AAM also have higher Gleason scores, and a higher incidence of metastatic disease on presentation. Other studies have noted AAM were more likely to receive radiation compared to European American men (EAM). Few studies have looked at healthcare disparities in the South where a much higher proportion of the population is underserved and African American. Using the Mississippi Cancer Registry, we have identified similar trends in prostate cancer incidence.
Methods: We performed a retrospective cohort study of patients diagnosed with prostate cancer between January 1, 2005 and December 31, 2016. Primary outcomes of the study were the presence of invasive prostate cancer, and mortality.
Results: Between 2005 and 2016 there were 26,990 new cases of reported invasive prostate cancer in the state of Mississippi, a rate of 156.58 per 100,000 population. EAM had an age adjusted incidence rate of 123.19 per 100,000 [95%CI 121.26, 125.14], while AAM experienced an age adjusted rate of 219.83 new cases per 100,000 people [95%CI 215.38, 224.34]. EAM had an age-adjusted mortality rate due to prostate cancer of 19.03 deaths per 100,000 people [95%CI 18.18, 19.91] while AAM had an age-adjusted rate of 57.28 people per 100,000 [95%CI 54.60, 60.05].
Conclusion: The objective of this study is the evaluate several socioeconomic factors including race of patients in the Mississippi Cancer Registry and compare those factors to the degree of disease on initial presentation, rates of metastatic disease and therapies offered to those patients. AAM experience statistically significantly higher incidences of invasive prostate cancer as well as higher mortality rates for when compared to EAM. From this preliminary data, we also hypothesize that lower socioeconomic status is associated with a higher stage at presentation, and higher rates of metastatic disease in Mississippi. Race and socioeconomic status also likely influence the types of treatment regimens offered to patients with prostate cancer.
Funding: N/A

Poster #14
ASSOCIATION BETWEEN SEXUAL ORIENTATION AND PROSTATE CANCER SCREENING AMONG MALES 40 YEARS OLD AND OLDER
Vivian Wong[1], Elias Atri[1], Jeffrey Wei[1], Billy Cordon, MD[2], Pura Rodriguez de la Vega, MPH[1], Grettel Castro, MPH[1], Juan Zevallos, MD[1], Alan Nieder, MD[2]
[1]Florida International University Herbert Wertheim College of Medicine, [2]Columbia University Division of Urology, Mount Sinai Medical Center, Florida
Presented By: Vivian Wong

Introduction: Among men in the United States, prostate cancer is the second most common cancer and is the second leading cause of death from cancer. Prostate cancer and sexuality has been under-researched and some initial studies have shown that gay,

bisexual and other men who have sex with men (GBM) had lower odds of having a prostate specific antigen (PSA) screening test than did heterosexuals.
Methods: We performed a secondary analysis of the participants of the Behavioral Risk Factor Surveillance System (BRFSS) 2016, which was conducted through phone survey, targeting both landlines and cell phones. First, a descriptive analysis was performed to assess the population. Second, a bivariate analysis was conducted to look at the association between sexual orientation and the rates of prostate cancer screening, specifically if the participant has ever had a PSA, and assess variables as potential confounders including age, race, tobacco smoking, BMI, health insurance status, education, exercise, health status, marital status, and income. Finally, we conducted a multivariate analysis to adjust for confounders.
Results: There was a significant difference between various sexual orientations and rates of PSA testing in men who identified themselves as gay compared with straight men (OR 1.36; 95%CI 1.02 to 1.82). Race, education, income and age showed effects on PSA testing rates as well.
Conclusion: Our study found a positive association between being a gay man and prostate cancer screening rates. The heterogeneity of results in the literature emphasizes the need for further research to better determine this relationship.
Funding: N/A

Poster #15
URINARY EXOSOME TEST AND MP-MRI FOR PROSTATE CANCER SCREENING: A SINGLE INSTITUTION EXPERIENCE
Adam Nolte, George Wayne, Juan Cedeno, Elizabeth Nagoda, Alejandra Perez, Diana Lopategui, Jorge Pereira, Akshay Bhandari, Alan Nieder
Mount Sinai Medical Center, Miami Beach, FL
Presented By: Adam Nolte

Introduction: Concern for over-diagnosis and over-treatment of prostate cancer has led to the development of several biomarkers risk-stratify patients prior to biopsy. ExoDx Prostate IntelliScore (ExoDx) has been validated across multiple institutions, showing association with improved detection of high-grade prostate cancers and reduced unnecessary biopsies. Multi-Parametric MRI (MP-MRI) has played an increasing role in prostate cancer detection, and, together, biomarkers, imaging, and history and exam findings now significantly extend the urologist's intuition. Nonetheless, little consensus exists on how to best combine these metrics in practice. We reviewed ExoDx scores and MP-MRI results at our institution to understand which results might be most meaningful during workup.
Methods: We retrospectively reviewed patients that received ExoDx as part of their workup. Charts were reviewed for clinical variables including PSA, MP-MRI Pi-RADS score, family history of cancer, digital rectal exam (DRE) findings, and biopsy results, as well as baseline demographics. Statistical tests were computed in JMP, Excel, and R.
Results: 70 men were included in our initial analysis. Their average age was 66.8, and they were 42.8% Non-Hispanic White, 31.4% Hispanic White, and 10% African American. 43 of 70 men proceeded to biopsy, of which 17 were positive, and 9 showed Gleason 7 or higher disease. The AUC of the ROC curve for Exosome was 0.70 compared to 0.80 for MRI and 0.40 for PSA alone. ExoDx had a PPV of 0.27 and NPV of 0.92 for predicting Gleason 7 or higher lesions. A multivariate logistic regression evaluated the predictive value of ExoDx in conjunction with MP-MRI, PSA, Family history, and DRE. MP-MRI was the only significant predictor of biopsy positivity (OR 3.3, $p = 0.015$) in a model without ExoDx, but lost significance when ExoDx was added. ExoDx was the only significant predictor in this case (OR 1.09, $p = 0.039$), but only when used as a continuous scale, and not as a binary result as previously validated.
Conclusion: ExoDx is a promising new method of detecting clinically significant prostate cancer. It may improve risk stratification during prostate cancer detection, especially in conjunction with other modalities. With high negative predictive value, it may one day be best used to rule out biopsy.
Funding: N/A

Poster #16

TRANSPERINEAL VERSUS TRANSRECTAL ULTRASOUND-GUIDED SYSTEMATIC BIOPSY: UNDERSTANDING THE TRUE COSTS UTILIZING TIME-DRIVEN ACTIVITY-BASED COSTING

Aaron Laviana[1], Eliza Cricco-Lizza[2], Michael Gross[2], Michael Tzeng[2], Michael Gorin[3], Timothy McClure[4], Jim Hu[2]

[1]Vanderbilt University Medical Center, Department of Urology, Nashville, TN, [2]Weill-Cornell Medical College, Department of Urology, New York, New York, [3]Johns Hopkins University, Department of Urology, Baltimore, MD, [4]Weill-Cornell Medical College, Department of Urology and Radiology, New York, New York

Presented By: Aaron Laviana, MD

Introduction: Diagnostic prostate biopsy (PnBx) options include transrectal ultrasound-guided (TRUS), transperineal (TP) template-guided, and multiparametric MRI (mp-MRI) fusion-guided targeted TP or TRUS. Although post-biopsy infection rates appear less with TP, many patients require an anesthetic. Our objective was to calculate the actual upfront cost of each PBx approach using time-driven activity-based costing (TDABC).
Methods: We utilized TDABC for six PBx modalities, factoring in personnel, equipment, and material costs to derive capacity cost rates, which were then multiplied by the relevant process times. TDABC was defined as the sum of its resources, and the costs of mp-MRI fusion-guided TP under general anesthesia (GA), in-office template-guided TP, in-office systematic TRUS, in-office mp-MRI fusion-guided TRUS, in-office mp-MRI fusion-guided TP, and in-office mp-MRI cognitive-fusion TP were calculated.
Results: TDABC assessment demonstrated the following costs: in-office TRUS PBx, $229.61; in-office template-guided TP, $335.30; in-office MRI cognitive-fusion TP $1005.30; in-office mp-MRI fusion-guided TRUS $1072.88; in-office mp-MRI fusion-guided TP $1098.25; and mp-MRI fusion-guided TP under GA $1994.36. Both MRI ($670) and the added costs of the operating room were significant cost drivers. Time to perform TP versus TRUS was similar (10.1 minutes versus 10.0 minutes, respectively), which mirrored the length for mp-MRI fusion-guided TP versus mp-MRI fusion-guided TRUS (23 minutes versus 20 minutes, respectively).
Conclusion: When performed in clinic, the cost of TP versus TRUS PnBx is similar. Determining methods to increase the percentage of TP PnBx performed in clinic may lead to its continued adoption, and further investigation into cost-effectiveness after accounting for differences in post-biopsy sepsis rates is needed.
Table 1: Total costs of competing transperineal and transrectal prostate biopsy modalities using time-driven activity-based costing

Funding: Aaron A. Laviana was supported by the Paul Calabresi Career Development Award for Clinical Oncology (PCACO) K12 (NIH Institutional Research Career Development K12 grant mechanism).

Poster #17
THE CONTRIBUTION OF ASCORBIC ACID TO URINARY OXALATE IN A MOUSE MODEL
Zachary Burns[1], Carter Boyd[1], Nikhi Singh[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham Medical School, [2]University of Alabama at Birmingham, Department of Urology
Presented By: Zachary Burns

Introduction: Increased oxalate is a risk factor for kidney stone disease. Ascorbic acid may contribute 50% to endogenous oxalate synthesis. The factors that influence the breakdown of ascorbic acid to urinary oxalate is not well known. The *Gulo-/-* deficient mouse does not synthesize ascorbic acid and thus, like humans, must obtain ascorbic acid from the diet. Our objective was to evaluate this mouse as a potential model to evaluate ascorbic acid and endogenous oxalate synthesis.
Methods: *Gulo -/-* deficient mice were obtained from the University of Miami. Mice, 12 weeks old, were single housed in metabolic cages and three consecutive 24 hour baseline urines collected after a three day acclimation period. They were given free access to a purified diet containing no oxalate, in order to limit the contribution of dietary oxalate to urinary oxalate excretion. During baseline collections, water was supplemented with 330 mg/liter ascorbic acid. Following baseline urine collections, *Gulo-/-* deficient animals were deprived of dietary ascorbic acid for 5 weeks to reduce body stores. Animals were then singly housed in metabolic cages without ascorbic acid supplementation and three 24 hour urines were collected.
Results: Urinary oxalate excretion was similar at baseline between wild type and *Gulo-/-* deficient animals and between male and female mice (Table 1). Following 5 weeks dietary vitamin C deprivation, urinary oxalate excretion decreased 44% and 65% in a male and female *Gulo-/-* deficient animal, respectively (Table 1).
Conclusion: These mice may represent an animal model that can be used to increase our understanding of the contribution of ascorbic acid breakdown to urinary oxalate excretion. Understanding this pathway may provide future therapeutic targets for oxalate reduction.

	24 hour Urinary Oxalate (mg/g creatinine)		
Weeks off Dietary Vitamin C	*Male Gulo -/-*	*Female Gulo -/-*	*Male Wild type (n=2)*
0	102	145	98 ± 4
5	56	50	Not determined

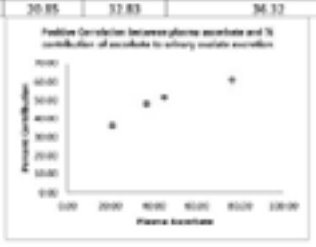
Funding: P20 and K08

Poster #18
THE CONTRIBUTION OF ASCORBIC ACID TO URINARY OXALATE IN HUMANS
Zachary Burns[1], William Poore[1], Carter Boyd[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham Medical School, [2]University of Alabama at Birmingham Department of Urology
Presented By: Zachary Burns

Introduction: Oxalate is a major component of most kidney stones and urinary oxalate is a major determinant of stone formation. There are several studies which demonstrate a positive association between ascorbic acid (AA) intake and urinary oxalate excretion. Our objective was to study the contribution of AA to urinary oxalate excretion in 4 individuals using a low oxalate diet and $^{13}C_6$-ascorbic acid; this approach allows for an accurate calculation of the contribution of AA to endogenous oxalate synthesis. Healthy subjects (M/F, 2/2) were recruited and received 3 days of a low oxalate (22 mg/day) controlled diet. Vitamin C supplements were avoided during the study. Diets were prepared by the CRU and controlled in the levels of AA, oxalate, calcium, magnesium, sodium, potassium, phosphate and macronutrients In addition, they had 50 mg of ascorbic acid that was ingested on the first morning. Plasma was collected at baseline and for the 3 day study. 24 hour urines were collected each day for 3 days. Urinary and

plasma ^{12}C and ^{13}C-oxalate and AA were measured using ion chromatography/mass spectroscopy.
Results: Contribution of AA breakdown to urinary excretions was calculated by dividing urinary mole percent enrichment by the matching plasma mole percent enrichment. AA breakdown contributed 36-61% to urinary oxalate excretion. Figure 1 demonstrates the contribution of AA to urinary oxalate. Figure 1 also illustrates a correlation between plasma AA and percent contribution of AA. AA breakdown contributes significantly to urinary oxalate excretion. Higher plasma levels of AA are associated with higher AA contribution to urinary oxalate. Further studies are needed to understand differences amongst individuals, especially stone formers, and potential modifying factors.

ID	Plasma AA (uM)	Ox (mg)	% contribution using urine ox excretion on low ox diet
Subject 1	76.31	43.99	61.07
Subject 2	44.86	52.50	51.51
Subject 3	35.54	39.70	48.12
Subject 4	30.85	32.83	36.32



Funding: P20 and K08

Poster #19
ASSOCIATION OF CHRONIC KIDNEY DISEASE STAGE WITH 24-HOUR URINE VALUES AMONG PATIENTS WITH NEPHROLITHIASIS
Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Cosmin A. Bejan, PhD[2], Ryan S. Hsi, MD[1]
[1]Department of Urology, Vanderbilt University Medical Center, [2]Department of Biostatistics, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Introduction: Little is known on the effects of diminishing glomerular function on excretion of urine electrolytes among patients undergoing metabolic workup for kidney stone disease. Thus we sought the characterize clinical, stone and 24-hour urine characteristics of patients with CKD.
Methods: We identified 2,257 patients who underwent 24-hour urine testing performed at our institution from 2001 to 2017 for nephrolithiasis. Serum creatinine obtained within 12 months of the first 24-hour urine study were identified, for an analytic cohort of n = 815. The Modification of Diet in Renal Disease (MDRD) Study equation was used to calculate estimated glomerular filtration rate (eGFR). Univariate analyses performed including analysis of variance and chi-square tests to identify differences in demographic, urinary, and stone characteristics by CKD stage.
Results: There were 191 (23.4%), 457 (56.1%), 115 (14.1%), 40 (4.9%) and 12 (1.4%) patients in the CKD stage I, II, IIIa, IIIb and IV groups respectively. No patients fell within stage V. When compared to patients with CKD stage I/II, patients with stage IIIb or IV CKD were older and more likely to have a history of diabetes, gout and hyperlipidemia (all $p < 0.004$). On 24-hour urine analysis, patients with stage IIIb or IV CKD showed lower urinary values of calcium, citrate, uric acid, chloride, phosphate, sulfate, creatinine in addition to lower calcium oxalate and calcium phosphate super saturation (all $p < 0.007$). At least 1 urinary abnormality was present in 90-100% of patients by CKD stage and at least 3 abnormalities in 0-21% without an obvious trend. Stone composition data was available in 55.2% (n=450) patients. Calcium oxalate monohydrate stones were the most common composition across CKD stages I-IV. Hydroxyapatite was the second most common except for stage IV where uric acid was the only other stone type.

Conclusion: Reduced GFR was associated with decreases in excretion of multiple urinary parameters, including calcium, citrate, uric acid, and creatinine. Impaired eGFR may impact kidney stone recurrence risk based on lower supersaturation values. These observations have implications for the management of CKD patients with nephrolithiasis.

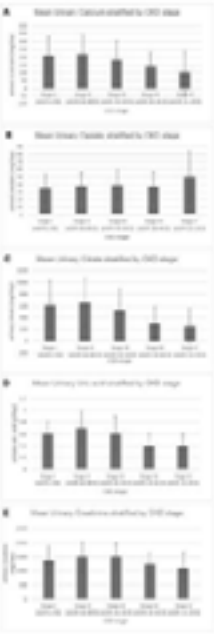


Figure 1. Mean urinary values of urine (A) calcium, (B) oxalate, (C) citrate and (D) uric acid and (E) creatinine compared across CKD stages. Error bars show standard deviation.

Funding: N/A

Poster #20

URINARY CITRATE WASTING ASSOCIATES WITH OBESITY AND DIABETES MELLITUS AMONG NEPHROLITHIASIS PATIENTS

Wilson Sui, MD[1], Joshua K. Calvert, MD[1], Nicholas L. Kavoussi, MD[1], Cosmin A. Bejan, PhD[2], Ryan S. Hsi, MD[1]

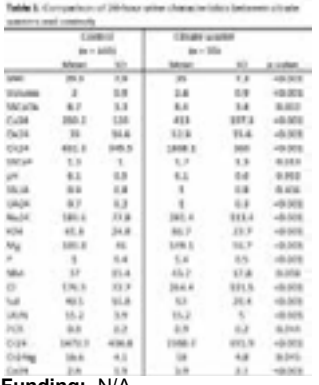
[1]Department of Urology, Vanderbilt University Medical Center, [2]Department of Biostatistics, Vanderbilt University Medical Center

Presented By: Wilson Sui, MD

Introduction: Urinary citrate is thought to decrease calcium stone formation through direct inhibition of crystallization and by complexing with calcium. A subset of nephrolithiasis patients excrete very high amounts of citrate with unclear clinical implications. Here we sought to profile nephrolithiasis patients with urinary citrate wasting.

Methods: We identified 2,257 consecutive patients who underwent 24-hour urine studies performed at our institution from 2001 to 2017. We identified patients with 1st time urine testing with citrate wasting, defined as >1500 mg/day. Patients were excluded if on citrate medical therapy. After applying these selection criteria, a total of 55 citrate wasters were identified and randomly matched 1:3 by age and sex to other stone formers for a final comparative cohort of n = 165. Univariate analyses with chi-square and t-tests were used to assess differences in demographic, clinical, stone and 24-hour urine characteristics

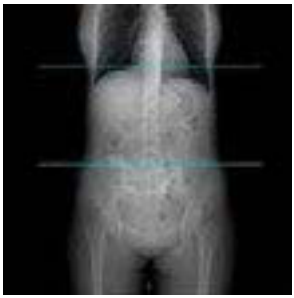
Results: Citrate wasters had significantly higher mean ± SD BMI (35.0 ± 7.3 vs 29.9 ± 7.9 kg/m2, p < 0.001) and a higher prevalence of diabetics (61.8 vs 20.6%, p < 0.001). Calcium oxalate monohydrate (COM) and uric acid stones were the two most common stones the citrate wasting group (70% and 15% respectively), while COM and hydroxyapatite were most common in the control (58% and 20% respectively). Uric acid stones were more commonly observed among citrate waters (15% vs 7%, p = 0.096). On 24-hour urine analysis, the citrate wasting group showed higher urine values of calcium, oxalate, uric acid, and sodium (all p<0.001). Notably, urine pH showed no difference between groups. These results were largely consistent on sub-analysis by sex and then sensitivity analysis by excluding those with abnormal creatinine/kg values.
Conclusion: Nephrolithiasis who excrete > 1500mg of urinary citrate per day were more likely to be obese and diabetic, with generally worse urinary analytes relating to stone recurrence risk. Further investigation is needed on the higher prevalence of uric acid stone disease in the setting of similar urinary pH.



Funding: N/A

Poster #21
ABDOMEN-ONLY CT FOR ASYMPTOMATIC UROLITHIASIS FOLLOW-UP IS SAFE, CHEAPER AND AS EFFECTIVE AS CT ABDOMEN/PELVIS
Michael Fritz, BS[1], Andres Ayoob, MD[2], Jie Zhang, PhD[2], John Roger Bell, MD[3]
[1]University of Kentucky, College of Medicine, [2]University of Kentucky, Department of Radiology, [3]University of Kentucky, Department of Urology
Presented By: Michael Fritz, Biology, B.S.

Introduction: Patients with urolithiasis are exposed to significant amounts of radiation during the course of their disease. CT imaging is the most sensitive modality to diagnose urinary stones and provides the best stone metrics. However, it carries concerns of radiation exposure. This retrospective review aimed to evaluate the safety of eliminating the pelvis from the CT scan for asymptomatic follow-up patients with urolithiasis as well as to estimate the effective radiation dose reduction with an abdomen only CT scan.
Methods: A query of medical records was performed at an institution for patients who underwent a CT Abd/Pelvis (CPT: 74176) who were being followed up in our endourology clinic for urolithiasis from January 2017 to April 2019. All scans were performed with a low dose protocol. The resulting CT scans were reviewed for any evidence of ureterolithiasis in the pelvis portion of the scan to see if any pertinent pathology would be missed if this body region were excluded. The abdomen was defined as the area between T11-L5. Any CT findings in the pelvis were recorded. Dose length products, BMI, BSA and computed tomography dose index (CTDI) were recorded to estimate the effective dose for the Abd/Pelvis as well as just the abdomen. The average institutional payment for Medicare was recorded for: CT Abd/Pelvis, CT Abd.



Results: Eighty-nine CT scans were included in our analysis. None of these had any obstructing ureteral stones present on CT imaging for asymptomatic patients seen in routine follow-up. Of these 89 scans, 0% of the patients were found to have a new, clinically significant pathology in the pelvis region. Thirteen patients were found to have incidental pelvic findings that did not require any intervention. Our average Medicare payment for CT Abd/Pelvis = $69 vs $51 for CT Abd only. On average, excluding the pelvis reduces effective dose by 53%.
Conclusion: Excluding the pelvis does not appear to miss any ureteral stones in asymptomatic patients presenting for routine follow-up. Excluding the pelvis on CT scan confers an expected cost savings of $18 for Medicare patients. This appears to be an effective way to reduce radiation exposure and reduce costs while not missing any significant urologic pathology.
Funding: N/A

Poster #22
HUMAN VS MACHINE: COMPARISON OF MANUAL VERSUS AUTOMATED SOFTWARE CT MEASUREMENTS OF STONE PHANTOMS
Andrew Harris, MD, Morgan Cash, Leslie Peard, MD, Issa Mohammed, MD, James Lee, MD, Jason Bylund, MD, Amul Bhalodi, MD, John Bell, MD
University of Kentucky
Presented By: Leslie M. Peard, MD

Introduction: Given the significance of stone size management of urolithiasis, obtaining accurate and precise measurements is paramount. We compared software and manual stone length and volume measurements to actual measurements of stone phantoms.
Methods: Seventeen unique stone phantoms were created in a variety of shapes and sizes using BegoStone Plus. Stone length, width, and height were measured with electronic calipers. Stone volume was measured using volume of displacement in water. Stone phantoms were placed in saline and imaged with CT. The CT images were uploaded into post-processing software, which analyzed the stones for maximum length and volume. Two urologists assessed the imaged stones for length, width and height and were blinded to the software measurements. Stone volume was calculated using the ellipsoid formula 0.52 x length x width x height.
Results: The stone phantoms ranged in length from 5.5mm to 63mm with volumes of 40mm3 to 16,000mm3. The software had the closest approximation to the actual stone length with a median percent error of 6.2% (IQR 3.1%-9.4%). Readers 1 and 2 had median percent errors of 5.7% (IQR 3.7%-14.1%) and 7.8% (IQR 2.1%-17.2%) respectively. Reader 1 and 2 both differed from the software with median percent differences of 16% (IQR 8.6%-22.4%) and 17.1% (IQR 5.2%-28.4%). The readers had a median percent difference from each other of 4.1% (IQR 3%-6.6%). None of the length measurements by the software or the human readers differed significantly from the actual stone phantoms (P>0.610). The percent errors with regards to volume for the software, reader 1 and reader 2 compared to actual stone volume were 20% (IQR 14.2%-30%), 18% (IQR 5.2%-39.8%), 24.1% (IQR 10.2%-33.2%), respectively. Reader 1 and 2 differed from the software with median percent differences of 33.1% (IQR 21.7%-59.5%) and 26.3% (IQR 15%-48%), respectively. The readers had a median

percent difference from each other of 17.3% (IQR 7.5%-32.5%). None of the measurements by the software or the human readers differed significantly from the actual stone phantom volume (P>0.697).
Conclusion: Software measurements approximated the actual measurements for the stone phantoms while eliminating interobserver variability. Using post-processing software to measure urinary stones appears to be as accurate as human readers, but with greater precision.
Funding: N/A

Poster #23
BENCHTOP ASSESSMENT OF A NEW SINGLE-USE FLEXIBLE URETEROSCOPE
Russell Terry, MD, Patrick Whelan, MD, Robert Qi, MD, Glenn Preminger, MD, Michael Lipkin, MD, MBA
Division of Urology, Duke University Medical Center
Presented By: Patrick Whelan, MD

Introduction: Single-use flexible ureteroscopes are an increasingly popular alternative to reusable ureteroscopes. In this study, we examined the physical, optical, and irrigation flow properties of the new Dornier Axis™ (Webling, Germany) single-use ureteroscope.
Methods: Ten new, never-used Dornier Axis™ ureteroscopes were assessed for maximal tip deflection and irrigation flow rate with empty working channel as well as with

(Boston S

Marlborough, MA) nitinol basket. All ureteroscopes were then fully deflected 100 times in each direction, and maximal deflection angles were re-measured. All measurements were performed in duplicate. In vitro optical evaluation for resolution, image distortion, and depth of field was additionally performed. Statistical analyses using t-test and ANOVA were performed in R.
Results: Mean maximal deflection angles exceeded 300 degrees in both directions both

There were no significant differences in upward or downward maximal deflection angle following 100 full deflection cycles. There was statistically significant deflection variability

fiber (downward flexion 293.3º vs 308.5º, p < 0.005). Mean flow rate through an empty channel was 46.7 ml/min and decreased significantly with the various instruments inserted through the channel. Optical resolution ranged from 19.86±5.74 line pairs per mm at 3mm distance to 1.83±0.24 lp/mm at 50mm. Mean distortion was -8.7% at 10mm distance. Mean depth of field was 4.4cm.
Conclusion: The Dornier Axis™ single-use ureteroscope demonstrates high deflection angles that remain unchanged after 100 manual flexions in each direction and in fact exceed the manufacturer's claim of 275º in each direction.

Channel	Before or After 100 Manual Flexions	Mean Deflection (Degrees)	Range of Deflection (Degrees)	Flow Rate (ml/min) (Mean ± SD)
Empty	Before	312.0	303 – 320	46.7±2.71
	After	310.4	304 – 316	
Flexiva™ 200µm laser	Before	308.2	278 – 320	22.09±1.83
	After	307.8	300 – 318	
Moses™ 200µm laser	Before	308.5	297 – 313	35.3±1.95
	After	304.2	275 – 325	
Moses™ 365µm laser	Before	293.3	263 – 315	16.4±1.55
	After	285.6	228 – 313	
1.9Fr Basket	Before	306.0	283 – 318	13.0±1.05
	After	307.5	283 – 323	

Table 1 – Results of maximal downward deflection angle before and after 100 manual deflections and Flow Rate tested in ten unused Dornier Axis™ ureteroscopes

Funding: Ureteroscopes for evaluation provided by Dornier MedTech

Poster #24
COST BENEFITS OF DISPOSABLE VS. REUSABLE URETEROSCOPES AT A TERTIARY REFERRAL TEACHING INSTITUTION
Katie Flower, Stephen Savage
Medical University of South Carolina
Presented By: Katie Flower, MD

Introduction: The flexible ureteroscope is used routinely by the practicing urologist, however it is inherently fragile and many institutions are seeing rising repair and replacement costs. The goal of our study is to assess the cost benefit of the disposable Lithovue ureteroscope in comparison to multi-use fiber-optic and digital ureteroscopes at our instituition.
Methods: We retrostpecitvley reviewed cases in which both disposable and reusable flexible ureteroscopes were used at our institution for the year of 2017. We then performed cost analysis comparing disposable and reusable ureteroscopes on the basis of repair and processing fees. These costs were averaged over the total number of cases that year, cost per case average for both scopes was obtained. A comparison was then made regarding cost benefits between these two ureteroscope options.
Results: The resusable ureteroscope was used 108 times over a twelve month period and the disposable scope, 27 times over a three month trial period of Lithovue at our institution. Cost for repair of the reusable scopes for 2017 was $201,400 with a cost of $35 for processing per case. Repair and processing costs were averaged over the number of cases that year. Cost per case of $1899 for the resuable scope and $1500 for the disposposable scope was found. Savings of approximately $400 per case was seen with the disposable scope. Of note we did not include costs of purchacing a resuable scope which can be upwards of $20,000. Nor did it include cases where multiple scopes were used due to processing errors or improper packaging. These issues lend to increased processing fees as well as OR delays that can exponentially increase cost per case analysis.
Conclusion: At our institution the use of the disposable Lithovue ureteroscope is cost effective with savings of at least $400 per case and $54,000 per year. We believe the cost savings to be even more significant when purchace price of scopes and need for multiple reusable scopes per case is factored in to this evaluation. Several studies have shown similar function and outcomes between these two scopes which leads us to conclude that switching to disposable scopes could be cost effective while preserving functional outcomes.
Funding: n/a

Poster #25
THE DIFFERENCE IN TRIPLE-D SCORES USING AXIAL AND CORONAL STONE DENSITIES FOR PREDICTING SUCCESS OF SHOCKWAVE LITHOTRIPSY
Omar Dawood[1], Eric Wendel, MD[2], Bryan Savage[3], Juan Jiminez, MD[2], Michael Maddox, MD[2]
[1]Southern Illinois University, [2]Ochsner Medical Center, [3]University of Queensland
Presented By: Eric Wendel, MD

Introduction: Predictive tools have been developed to give the clinician an anticipated measure of success for extracorporeal shockwave lithotripsy (ESWL). The Triple D Score uses a combination of Stone Density (SD), Ellipsoid Stone Volume (ESV), and Skin to Stone Distance (SSD) to predict the success of ESWL. In our experience, Hounsfield Units (HU) for stones in the coronal and axial views can vary significantly. We compared Triple D scores using both the coronal and axial views of non-contrasted CT scans to assess for a difference in prediction of stone free rates.
Methods: We Identified 23 patients with stones of at least 4mm in one dimension (to minimize the risk of averaging on HU determination) who underwent ESWL within the last 6 months. We calculated the Triple-D Axial and Coronal score for each stone on CT. The score was calculated using the previously defined cutoff values of SD (600 HU), ESV (150 mL), and mean SSD (12cm)1.

Results: All patients identified had either a proximal ureteral or intrarenal stone with mean dimensions of 0.7mm (anteroposterior-axial) x 0.7mm (horizontal-axial) x 0.8mm (craniocaudal-coronal) giving a mean ESV of 234.7mL. The average difference (absolute value) in axial and coronal HU was 151. In 5 of the 23 patients (21.7%), the Triple D Axial score differed from the Triple D-Coronal. The axial and coronal HUs were compared with a scatterplot in Figure 1. There was a positive correlation, however the correlation coefficient was 0.49 indicating a weak correlation.
Conclusion: A significant percentage of patients had a difference in their Triple-D score when comparing axial and coronal HU measurements. This could translate into considerable differences in ESWL success and impact pre-operative counseling of patients. Stone density is a variable that may affect ESWL success on a continuum and given the average difference of 151 HU between axial and coronal measurements, the change in triple D score may underestimate outcomes affected by the variation in axial and coronal HU.

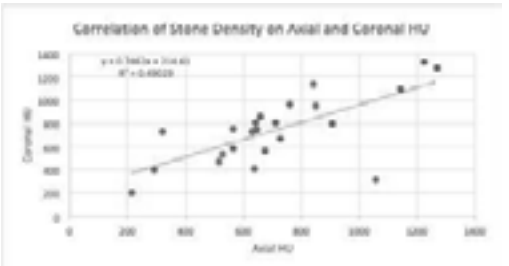


Figure 1. Correlation of Stone Density on Axial and Coronal HU
Funding: N/A

Poster #26
ASSESSING SURGERY COUNSELING IN PATIENTS WITH NEPHROLITHIASIS
Anand Prabhu, Amul Bhalodi, MD, John Roger Bell, MD, Jason Bylund, MD, Andrew Harris, MD
University of Kentucky
Presented By: Anand Sachin Prabhu, B.S.

Introduction: Patients who experience negative surgical outcomes may often attribute outcomes to poor preoperative counseling. Preoperative counseling is complex and involves the provider's ability to convey information as well as the patient's ability to receive and comprehend information. We hypothesize patient counseling varies among providers and patients may not be aware of potential complications of ureteroscopy.
Methods: 50 patients with nephrolithiasis who had recently undergone ureteroscopy with laser lithotripsy for nephrolithiasis were administered a questionnaire regarding surgical counseling from June-August 2019. Preoperative surgical counseling had been delivered by multiple providers. The interviewer verbally administered the questionnaire and patients responded verbally. The interviewer was not the provider or part of the care team. In addition, the interviewer had never seen the patients previously. Results were summed and analyzed.
Results: 11 questions were asked in the questionnaire. 16% of patients responded they had not been told of any potential disadvantages of the procedure. 14% of patients stated they had not been told that damage to the ureter was a possible side effect from surgery. 10% of patients responded they were not told about infection as a side effect of the procedure, and 20% of patients were not informed the surgery may fail to remove the entire stone. Conversely, patients felt well aware of the advantages of the procedure, the postoperative course, how the procedure would be performed, potential stent placement, and felt the information was conveyed in a clear manner, Figure 1.
Conclusion: Surgical counseling is a critical aspect in patient management. Patients should be aware of the complications and side effects potentially resulting from surgery.

Patient understanding and comprehension dynamics are likely multifactorial. Patients who underwent ureteroscopy with laser lithotripsy reported having had low levels of counseling regarding surgical complications and side effects. Assessing Health literacy and using alternative educational methods may be useful.

Figure 1: Survey Questions and Responses
Funding: n/a

Poster #27
IMPLEMENTATION OF A PATIENT ALGORITHM TO REDUCE CT UTILIZATION VIA ULTRASONOGRAPHY IN THE ER SETTING
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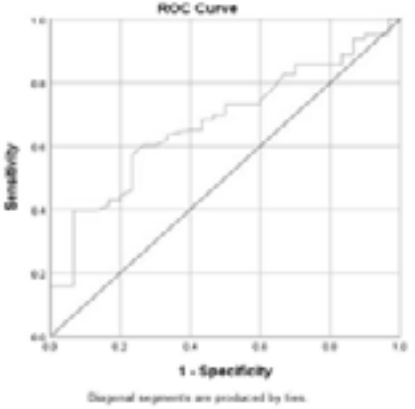
University of Tennesee Medical Center, Knoxville, TN
Presented By: John Sam Fisher, MD

Introduction: Although CT imaging is the longstanding gold standard for diagnosing nephrolithiasis, renal ultrasound (RUS) and plain film KUB provide alternative diagnostic tools. Cost, radiation exposure, and emergency room waiting times are just some of the factors that may influence the use of these alternative tools. The aim of this study was to formulate an algorithm for ER patient selection to safely undergo RUS and KUB, and upon implementation, to determine whether it reduced the ratio of patients who underwent CT stone studies (CTSS).
Methods: The algorithm diverted patients with relevant histories or symptoms consistent with acute stone episodes to receive RUS or KUB. Eleven ICD-10 codes were chosen that correlate to symptoms related to acute stone episodes. The ratio of patients discharged with these codes and the number of CTSS ordered were compared between the 6 months before and 11 months after algorithm implementation.
Results: During the 6 months prior, 512 patients were discharged with the select diagnoses. In this period, 45 CTSS were ordered for this group. In the 11 months following implementation, 75 CTSS were ordered for 975 patients discharged with these ICD-10 codes. A 1.1% ($p = 0.046$, OR = 0.87, 95% CI 0.59 to 1.24) reduction in CTSS was seen after implementation.
Conclusion: Marginal reductions in the usage of CTSS may be achieved in select patients triaged into an algorithm to undergo RUS with presenting symptoms of an acute stone. A less conservative algorithm may increase the rate of reduction with the potential risk for more unidentified stones with a potential need for surgical intervention
Funding: N/A

Poster #28
FACTORS AFFECTING OUTCOMES FOLLOWING MINI-PERCUTANEOUS NEPHROLITHOTOMY FOR LARGE INTRA-RENAL STONES

Ilan Klein, Rahul Dutta, Marc Colaco, Jorge Gutierrez-Aceves
Wake Forest School of Medicine
Presented By: Rahul Dutta, MD

Introduction: Mini-percutaneous nephrolithotomy (mPCNL) is an alternative to standard percutaneous nephrolithotomy (PCNL) for treating renal stones with reduced complication rates. We sought to investigate peri and pre-operative variables that affected stone-free rate (SFR) in patients undergoing mPCNL.
Methods: Patient demographics, pre-operative variables, peri-operative variables, and outcomes following mPCNL by a single high-volume endourologist were retrospectively collected. mPCNL was performed using the minimally invasive percutaneous access set (MIP Storz®), which dilates the access tract to 16.5 Fr. Low-dose stone CT was performed in all patients within 24 hours of surgery, using 0 mm of visible stone fragments as a cutoff for being considered stone-free (SF).
Results: 93 patients were included in our analysis. 37.6% of patients were female with average BMI of 28.2. 45% of patients had a single stone, and average stone burden was 21mm. Mean operative time was 123.5 minutes and 83% of surgeries were performed as an outpatient procedure, with total length of hospital stay < 24 hours. Overall SFR was 30%. There were no significant differences in SFR by age, gender, body mass index, stone laterality, or ASA score. Patients with more than one stone were significantly less likely to be rendered stone free (p=0.002). By our ROC curve, the pre-operative stone burden that produced the highest sensitivity and specificity of 0.57 and 0.77, respectively, was 21.75mm. SFR was 46% and 16% above and below this size, respectively. 9.6% of patients required a secondary procedure within 2 weeks, while 11% of the remaining non-SF patients, all of whom had >3mm residual stone burden, required another procedure beyond 2 weeks. Overall, there were 3 complications greater than Clavien II (3.2%).
Conclusion: Mini-percutaneous nephrolithotomy is a safe and effective technique for removing large stone burdens. In our series, the best stone-free rates were obtained in patients with overall stone burden < 21.75 mm and with single stones.



Funding: N/A

Poster #29
OPIOID USE IN PATIENTS WITH CYSTINURIA
Nikhi Singh[1], William Poore[1], Zachary Burns[1], Dean Assimos[2], Kyle Wood[2]
[1]University of Alabama at Birmingham, School of Medicine, [2]University of Alabama at Birmingham, Department of Urology
Presented By: Nikhi Paul Singh

Introduction: Kidney stone formers may have episodes of severe pain and thus may be at increased risk of using opioids. Patients with cystinuria typically develop stones and an early age and are subject to recurrence. They are frequently subjected to multiple stone removing procedures. Thus, this patient cohort may utilize opioids more frequently placing them at risk for addiction.
Methods: The records of 28 stone formers with cystinuria who were cared for at our institution over a 6-year period were retrospectively reviewed. Demographic data, peri-operative opioid use for each stone removing procedure, and all opioid prescriptions filled within the past 6 years using the Alabama Prescription Monitoring Drug Program (PDMP) were collated and compared to age and gender matched, non-cystinuric stone formers who underwent similar stone procedures over the
Results: Average age of cystinuria (C) and idiopathic (I) patients was 35 ±17 yrs. 56% were males; 44% female. Caucasians represented 78% of the cohort. Cystinuric patients required significantly more stone removing procedures, 12.2 vs 1.8 ($p<0.001$). There were no differences in Morphine milligram equivalent (MME) per procedure between C vs I patients, 19.7 vs 17.0 ($p=0.19$); nor inpatient requirements, 42.1 vs 45.0 ($p=0.91$); nor outpatient discharge prescription, 192.3 vs 147.1 ($p=0.22$). There was also no difference in total number of discrete opioid prescribing providers for C vs I (8.7 vs 7.2); however, 36% of C had >10 discrete providers vs only 16% of I ($p<0.05$). There was no difference in total MME over the 6 years for C vs I, 34,000 vs 24,000 ($p=0.83$). However, a greater percentage of C had profound opioid utilization (> 10,000 MME) over this 6-year period, 24% of C vs only 8% of I ($p<0.05$).
Conclusion: While total opioid utilization appears to be similar in cystinuric and non-cystinuric stone formers, patients with cystinuria receive prescriptions from multiple providers and have more profound opioid utilization placing them at a higher risk for developing an opioid use disorder or addiction
Funding: N/A

Poster #30
IN VIVO ASSESSMENT OF HO:YAG LASER HEAT PRODUCTION DURING URETEROSCOPY
Russell Terry, MD[1], Kohldon Boydston, MD[1], Evan Carlos, MD[1], Brent Winship, MD, Patrick Whelan, MD[1], Derek Ho, Ph.D[2], Pei Zhong, Ph.D[2], Glenn Preminger, MD[1], Michael Lipkin, MD, MBA[1]
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Presented By: Russell Terry, MD

Introduction: In vitro ureteroscopy models have demonstrated that Holmium:YAG lasers can produce temperatures capable of causing thermal tissue injury. The flow of irrigation and the possible heat-sink effect of the ureter and surrounding tissues may play a role in mitigating laser-induced heating within the ureter, but to date this has not been examined in vivo.
Methods: A flexible or semirigid ureteroscope was placed within the mid-ureter of an anesthetized adult female pig. Wire thermocouples were placed 3mm adjacent to the laser tip within the ureter and in the immediately adjacent peri-ureteral tissues. Either a

fired for 45 seconds at pulse settings of 0.6J/5Hz, 0.8J/8Hz, 1J/10Hz, 1J/20Hz, or 0.2J/60Hz. Irrigation pressure was held constant at 100mmHg. Mean temperature changes during laser activation and for 15s following cessation were recorded. Thermal dose was then calculated assuming a baseline irrigation temperature of 37°C and using a previously described summation equation which is directional proportional to exposure time, exponentially proportional to change in temperature above 43°C, and reported in

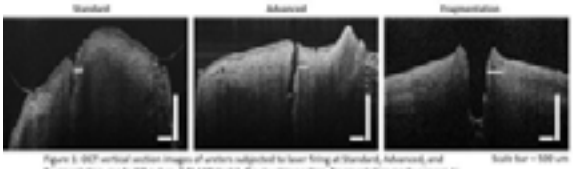
cumulative equivalent minutes at 43°C (CEM43) using 120 minutes as the threshold for injury.
Results: Semirigid scope: All tested settings yielded thermal doses below the threshold for tissue injury regardless of laser fiber size.

thermal doses below the threshold for tissue injury at both intraureteral and extraureteral

0.2J/60Hz and 1J/20Hz significantly exceeded the injury threshold. Ureteral luminal narrowing with eventual perforation was noted at these settings after 10 to 15 seconds of laser activation.
Conclusion: Ho:YAG laser activation during ureteroscopy can generate heat capable of rapid tissue injury. Fortunately, adequate flow of irrigation can mitigate this effect even when high power settings are used. Caution must be exercised when power approaches 12W and during low-irrigation situations such as the combination of a flexible
obile stone fragments with minimized flow.
Funding: N/A

Poster #31
USE OF OPTICAL COHERENCE TOMOGRAPHY TO ASSESS THE IMPACT OF PULSE MODULATION ON HOLMIUM:YAG LASER-INDUCED URETERAL INJURY
Robert Qi, MD[1], Derek Ho, PhD[2], Russell Terry, MD[1], Patrick Whelan, MD[1], Glenn Preminger, MD[1], Pei Zhong, PhD[2], Michael Lipkin, MD, MBA[1]
[1]Division of Urology, Duke University Medical Center, [2]Pratt School of Engineering, Duke University
Presented By: Robert Qi, MD

Introduction: While the overall safety of the Holmium: YAG laser has long been accepted by the urologic community, sparse investigation has been performed to characterize the potential tissue injury effects attributable to novel pulse modulation techniques.. Here, we describe our initial investigation into ureteral tissue trauma caused by three different Ho:YAG pulse modalities using optical coherence tomography (OCT).
Methods: Fresh porcine ureters were detubularized and mounted. A 400-micron laser fiber was placed perpendicularly in contact with the specimens and used to deliver 10 pulses at 0.8 joules and 10 Hertz. Standard, Fragmentation (short-pulse), and Advanced (long-pulse) modes (n = 5) were tested in separate locations along the urothelial surface of the ureter using an H Solvo 35-watt laser. Tested areas were then examined immediately using optical coherence tomography (OCT) with a Lumedica OQ Labscope for penetration depth and crater volume. Results were analyzed in R using Kruskal-Wallis test.
Results: OCT suggested that Fragmentation mode had the deepest mean penetration compared with Standard and Advanced modes (1003.5µm ± 218.1µm, 821.9 µm ± 227.4µm, and 796.6 µm ± 144.0µm, respectively, p = 0.18). On visual inspection, Fragmentation mode produced deep, broad penetrations with qualitatively wider peri-crater tissue trauma while Advanced and Standard modes had shallower, narrower penetrations with qualitatively less peri-crater trauma.
Conclusion: Our data suggests that Fragmentation mode, which is associated with shorter pulse width and therefore higher peak pulse energy, may create the deepest tissue penetration when fired in perpendicular tissue contact and therefore could potentially represent a higher ureteral perforation risk. Safety of the procedure could be ensured by keeping the fiber tip at least 1 mm from the tissue surface. Additional studies into the effects of pulse modulation on tissue injury under clinically relevant conditions are warranted.



Funding: N/A

Poster #32
LONGTERM HEALTH SURVEY OF PEDIATRIC IDIOPATHIC STONEFORMERS
Carter Boyd[1], Nikhi Singh[1], Elena Gibson[1], Dustin Whitaker[1], Pankaj Dangle, MD[2]
[1]University of Alabama at Birmingham School of Medicine, [2]Department of Urology, University of Alabama at Birmingham
Presented By: Nikhi Paul Singh

Introduction: Incidence of pediatric stone disease is rising in the United States. In adult patients; stone disease has been linked to other systemic diseases. There has been a paucity of research detailing long-term health outcomes of pediatric idiopathic stoneformers. Our objective was to examine the development of future stones and chronic medical conditions in idiopathic pediatric stoneformers.
Methods: After an Institutional review board approval, retrospective chart review (1999-2005) of all pediatric kidney stone formers was performed to determine idiopathic stoneformers. Survey information included current age, age of first stone, number of stones before and after age 18, first-degree relative history of stones, and stone management. Demographic information including sex, race, marital status, and employment status were recorded. We assessed for the development of other health issues including diabetes, hypertension, chronic kidney disease, obesity, stroke, dyslipidemia, cardiovascular disease, inflammatory bowel disease, liver disease.
Results: Of the 27 patients 28% were male and 52% were female, 96% were white while only 4% were black. Of these,48.2% were married and 52% worked full time. Average age of patients completing the survey was 29 (19-39) years old, and average age of first stone event was 11.95 (6-17) years. Average number of stone events before age 18 was 3.22 (median 3, range 1-12), and 53.6% of patients had a positive family history of stones. Average number of stones events after age 18 was 3.28 (median 2, range 0-25) requiring less than 1 procedure on average. A total of 14.8% of patients still see a provider for management of kidney stones. Most patients cite their health status as good (55.6%), 37% outstanding, 7.41% as some chronic issues, and 0% as poor. Prevalence of the diseases surveyed were diabetes (3.7%), hypertension (11.1%), chronic kidney disease (3.7%), obesity (11.1%), stroke (3.7%), dyslipidemia (11.1%), cardiovascular disease (7.41%), inflammatory bowel disease (18.52%), liver disease (11.1%).
Conclusion: These results demonstrate that pediatric idiopathic stone formers continue to have kidney stones into adulthood and should be transitioned to adult urologist. Select patients have chronic medical issues, long term multi-institutional studies are needed to assess the associations in this patient population.
Funding: n/a

Poster #33

DO THE AUA GUIDELINES FOCUSING ON SMALL RENAL MASSES PERMEATE INTO PRACTICE? IDENTIFYING AN OPPORTUNITY FOR IMPROVEMENT IN PATIENT EDUCATION AND RENAL BIOPSY PERFORMANCE

Patrick Probst, Department of Urology, Howard Hasen, Department of Urology, Christopher Ledbetter, Department of Urology, Robert Wake, Department of Urology, Anthony Patterson, Department of Urology
University of Tennessee Health Science Center - Memphis, TN
Presented By: Patrick Probst, MD

Introduction: The 2017 AUA guidelines on Renal Mass and Localized Renal Cancer (GL) have specific sections for thermal ablation (TA) and active surveillance (AS). New reports suggest a more robust role for non-nephrectomy management of small renal masses, as long-term oncologic outcomes have not deteriorated with increased utilization of surveillance alone. Additionally, the GL recommend renal biopsy (RB) prior to TA and follow-up imaging during AS within 6 months. We assessed the frequency with which these guidelines are implemented in clinical practice in order to identify areas of improvement in small renal mass management.

Methods: A ten-question survey based on the GL was distributed electronically to all SESAUA members. Participants were queried about their type and length of practice (Table 1). Responses were requested regarding the frequency that patients with cT1a masses <3cm are educated on the role of TA, have RB prior to TA, and the type of TA used. The remaining questions assessed the frequency that patients with cT1a masses <2cm are educated on the role of AS, have initial follow-up imaging, and the imaging modality used.

Results: 86 responses were collected. For cT1a renal masses <3cm, only 52.3% of urologists educate every patient about the role of TA, while 25.6% educate more than half of their patients. Additionally, only 40.7% of responders perform RB prior to all TA. For cT1a renal masses <2cm, 75.6% of urologists educate every patient about the role of AS, while 12.8% educate more than half. Finally, 89.5% of providers survey patients on AS within a 6-month interval, 60.5% using CT and 23.3% using ultrasound.

Conclusion: Regarding AS, urologists adhere closely to the GL. Just under 90% of responders educate either all or more than half of their patients about AS and perform follow-up imaging within a 6-month interval after beginning AS. However, only 52.3% of urologists are educating all patients about the role of TA, and only 40.7% of urologists who use TA routinely obtain RB. Patient education about TA and increasing RB frequency are two identified areas that could be improved to optimize small renal mass management in concordance with the GL.

Funding: N/A

Poster #34

INITIAL EVALUATION OF CLINICAL OUTCOMES BEFORE AND AFTER IMPLEMENTATION OF AN ENHANCED RECOVERY CLINICAL CARE PATHWAY FOR RENAL SURGERY

Blair Townsend, MD, MBA[1], William Worrilow, BA[1], Myra Robinson, MSPH[2], Hamza Beano, MD[1], Blair Parker, CNL[1], Halie Cartner, CNL[1], Katherine Whitton, NP[1], Jaclyn Mieczcowski, NP[1], Carol Haskin, PA[1], Lauren Childs, PA[1], Ornob Roy, MD[1], Kris Gaston, MD[1], Peter Clark, MD[1], Stephen Riggs, MD[1]

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[2]*Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, NC*

Presented By: William Blair Townsend, MD, MBA

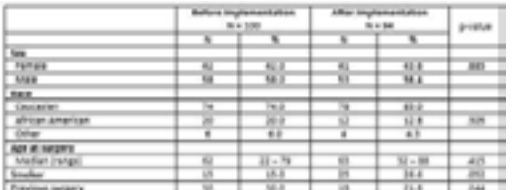
Introduction: We sought to reduce the variability in peri-operative care delivered to nephrectomy patients through implementation of a standardized enhanced recovery clinical care pathway similar to that currently used at our institution for radical cystectomy. We evaluated the association of protocol implementation with important clinical outcomes for renal surgery including length of stay, 30-day readmissions and complications.

Methods: Retrospective and prospective data was collected from two patient cohorts and entered into our Research Electronic Data Capture (REDCap) renal surgery database. The first cohort consisted of 100 patients who had a nephrectomy performed prior to 10/1/2018, before protocol initiation. The second cohort consisted of 94 consecutive patients who underwent nephrectomy between 10/1/2018-5/31/2019 following implementation. These cohorts were further divided by operation type (partial and radical nephrectomy) and approach (open and laparoscopic/robotic). Fisher's exact tests were used for categorical outcomes and median two sample tests were used for continuous outcomes.

Results: Before protocol implementation a larger proportion of patients underwent partial nephrectomy (62.0%) while a larger percentage underwent radical nephrectomy after implementation (58.5%) (p=0.006). There were no further differences in demographics or patient characteristics between the cohorts (Table 1). We found no differences in length of stay, 30-day readmission or complication rate between cohorts before and after implementation of an enhanced recovery pathway when considering all nephrectomies in aggregate (Table 2). Additionally, when looking at type of nephrectomy (partial and radical) there were no differences in length of stay, 30-day readmission or complication rate based on approach (open and laparoscopic/robotic).

Conclusion: Our initial experience reveals no significant improvement in primary length of stay, 30-day readmission or complication rate with implementation of an enhanced recovery clinical care pathway for renal surgery. Future work in this unique population will include evaluating a larger cohort to define key components and their relative merits along with cost and surgeon variability.

Funding: N/A



Poster #35

POST OPERATIVE PAIN SCORES AND TIME TO RETURN OF BOWEL FUNCTION AFTER IMPLEMENTATION OF AN ENHANCED RECOVERY CLINICAL CARE PATHWAY FOR RENAL SURGERY

William Worrilow, BA[1], Blair Townsend, MD, MBA[1], Myra Robinson, MSPH[2], Hamza Beano, MD[1], Blair Parker, CNL[1], Halie Cartner, CNL[1], Katherine Whitton, NP[1], Carol Haskin, PA[1], Jaclyn Mieczcowski, NP[1], Lauren Childs, PA[1], Peter Clark, MD[1], Ornob Roy, MD[1], Kris Gaston, MD[1], Stephen Riggs, MD[1]

[1]Department of Urology, Levine Cancer Institute/Atrium Health, Charlotte, NC,
[2]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, NC

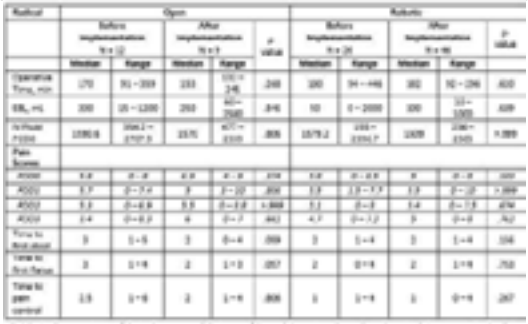
Presented By: Blair Townsend, MD, MBA

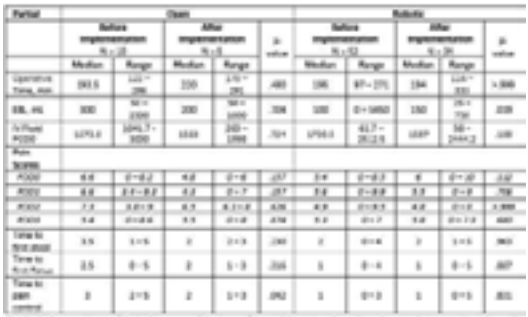
Introduction: Multimodal pain management strategies are embedded within enhanced recovery after surgery (ERAS) protocols to decrease postoperative pain, opioid consumption and enhance bowel recovery. Following initiation of ERAS in our nephrectomy patients, we sought to evaluate the effect on post-operative pain scores and return of bowel function.

Methods: Pain scores on POD 0-3 (using VAS, 0-10) and time to return of bowel function (days) were analyzed from two patient cohorts and entered into our Research Electronic Data Capture (REDCap) renal surgery database. The first cohort consisted of 100 patients who had nephrectomy performed prior to 10/1/2018 before an enhanced recovery pathway was implemented. The second cohort consisted of 94 consecutive patients who underwent nephrectomy between 10/1/2018-5/31/2019 after an enhanced recovery pathway was implemented. These cohorts were further divided by operation type (partial and radical nephrectomy) and approach (open and laparoscopic/robotic). Fisher's exact tests were used for categorical outcomes and median two sample tests were used for continuous outcomes.

Results: There were no differences in post-operative pain scores between the cohorts regardless of nephrectomy type or approach. Patients in the enhanced recovery cohort who underwent radical nephrectomy had faster time to first bowel movement than those before protocol implementation (2 v 3 days, p=0.013). Patients in the enhanced recovery cohort who underwent open radical nephrectomy trended towards decreased time to return of flatus (2 v 3 days, p=0.057) and first bowel movement (2 v 3 days, p=0.059)

compared to their counterparts before protocol implementation (Table 1). Patients in the enhanced recovery cohort who underwent open partial nephrectomy had faster time to pain control than those before protocol implementation (2 v 3 days, p=0.042) (Table 2).
Conclusion: Our initial experience suggests possible improvements for nephrectomy patients in time to pain control and return of bowel function using an enhanced recovery clinical care pathway, particularly open nephrectomies. Future work will evaluate these pain scores and time to bowel function in a larger cohort of patients.





Funding: N/A

Poster #36
SPECTRUM BIAS IN THE EVALUATION OF HEMATURIA: A SYSTEMATIC REVIEW
Christopher Wallis, MD, PhD[1], Rashid Sayyid, MD, MSc[2], Roni Manyevitch, BS[3], Nathan Perlis, MD, MSc[4], Vinata Lokeshwar, PhD[5], Neil Fleshner, MD, MPH[4], Martha Terris, MD[2], Matthew Nielsen, MD, MS[6], Zachary Klaassen, MD, MSc[2]
[1]Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN, [2]Section of Urology, Department of Surgery, Medical College of Georgia-Augusta University, Augusta, GA, [3]School of Medicine, St. George's University, University Centre Grenada, West Indies, Grenada, [4]Division of Urology, Department of Surgery, University of Toronto, Toronto, ON, Canada, [5]Georgia Cancer Center, Augusta, GA, [6]University of North Carolina Lineberger Comprehensive Cancer Center, Chapel Hill, NC
Presented By: Rashid Sayyid, MD, MSc

Introduction: Current American guidelines for the investigation of patients with hematuria do not differ based on hematuria severity, creating the potential for spectrum bias by applying data on diagnostic test performance derived among patients with gross hematuria to those with microhematuria. Our objective was to evaluate whether the diagnostic yield of axial imaging differed according to whether patients presented with gross or microscopic hematuria.

Methods: Systematic review of MEDLINE, EMBASE, and Cochrane from inception to October 2017 for studies reporting diagnostic rates of urologic malignancies (bladder cancer, upper tract urothelial carcinoma, and renal cancer) on axial imaging for adults with hematuria. Degree of hematuria was classified as “microscopic”, “gross”, or “unspecified”. Meta-analysis was performed using random effects models.
Results: Twenty-nine observational studies (6 at low-risk of bias) were included. Hematuria severity was unspecified in 12 studies (41%), included gross and microhematuria in six (21%), gross hematuria only in 5 (17%), and microhematuria only in 4 (14%). Patients with gross hematuria were significantly more likely to have bladder cancer (17.61% versus 2.35%), upper tract urothelial carcinoma (1.29% versus 0.18%), and aggregate urologic malignancies (15.38% versus 4.45%) compared to those with microscopic hematuria. Patients with unspecified hematuria had significantly more bladder (11.55% versus 2.35%), upper tract urothelial (10.44% versus 0.18%), and renal cell cancer (3.55% versus 0.98%), and aggregate urologic malignancies (19.51% versus 4.45%) compared to patients with microscopic hematuria. Notably, patients with unspecified hematuria were significantly more likely than patients with gross hematuria to be diagnosed with upper tract urothelial carcinoma (10.44% vs.1.29%) and, non-significantly, with renal cell cancer (3.55% versus 1.45%) and aggregate urologic malignancies (19.51% versus 15.38%, Table 1).
Conclusion: The severity of hematuria is associated with the likelihood of diagnosis of urologic malignancy on axial imaging. However, many studies assessing diagnostic performance of imaging tests in patients with hematuria do not specify these details. Physicians and guideline authors should recognize differing underlying risks of malignancy in patients with gross and microhematuria and investigate accordingly.

Table 1 - Pairwise comparison of diagnostic yield of axial imaging for hematuria-related urologic cancers based on the severity of hematuria.

Pairwise comparison	Pooled Diagnostic yield - Group 1 (%)	Pooled Diagnostic yield - Group 2 (%)	Difference in diagnostic yield (%)	95% CI of difference (%)
Bladder Cancer				
Gross vs micro	17.61	2.35	15.26	8.02 to 22.51
Gross vs unknown	17.61	11.55	6.064	-3.162 to 15.29
Micro vs unknown	2.35	11.55	-9.200	-16.60 to -1.808
Upper Tract Urothelial Carcinoma				
Gross vs micro	1.289	0.179	1.110	0.438 to 1.782
Gross vs unknown	1.289	10.44	-9.156	-17.71 to -0.600
Micro vs unknown	0.179	10.44	-10.26	-18.78 to -1.745
Renal cell cancer				
Gross vs micro	1.453	0.978	0.474	-0.594 to 1.543
Gross vs unknown	1.453	3.551	-2.098	-5.221 to 0.121
Micro vs unknown	0.978	3.551	-2.573	-4.747 to -0.403
Aggregate Urologic Malignancies				
Gross vs micro	15.38	4.450	10.93	2.446 to 19.42
Gross vs unknown	15.38	19.51	-4.132	-17.91 to 9.653
Micro vs unknown	4.450	19.51	-15.06	-23.78 to -6.338

Funding: N/A

Poster #37
THE ASSOCIATION BETWEEN PHYSCIAN TRUST AND DESIRE FOR SMOKING CESSATION: IMPLICATIONS FOR MOTIVATIONAL INTERVIEWING
John Benton[1], Atul Lodh[1], Archibald Watson[1], Martha Tingen, PhD[2], Martha Terris, MD[3], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[3]
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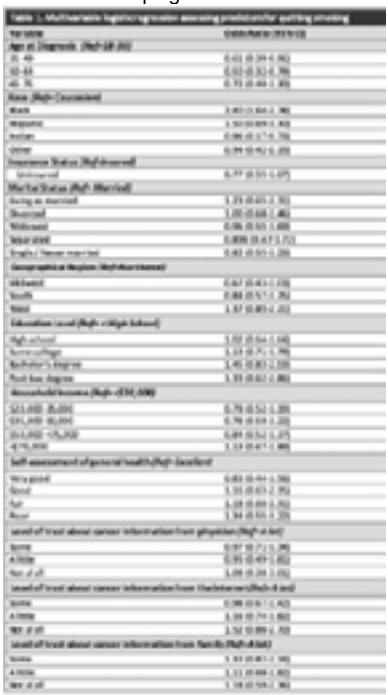
Presented By: John Zachary Benton

Introduction: Although the relationship between cigarette smoking and increased risk of malignancy has been well established, smoking remains a major public health threat in the United States. Therefore, we examined the relationship between a person’s level of trust in cancer information from their physician and the likelihood of quitting smoking in order to better understand the doctor-patient relationship in the context of smoking cessation.

Methods: The Health Information Nation Trends Survey (2011-2015) was used to identify smokers (n=2186). We primarily assessed the association between the trust a respondent had in cancer information from their physician and their desire to quit smoking. Secondary exposures were the level of trust in cancer information from the internet and from family members. The Cochran-Armitage test was used to identify significant trends for the outcome across each level of trust. Multivariable logistic regression was used to assess the relationship between trust in physicians, the internet, and family members on smoking cessation, accounting for demographic variables. All testes were two-sided, with statistical significance set at $p<0.05$.
Results: Smokers reported a significantly higher level of trust in cancer information from their physician than cancer information from the internet or family members. However, Patients with “a lot” of trust in their physician were no more likely to want to quit (623/1016; 61.3 %) than those with “some” (251/410, 61.2 %), “a little” (49/73, 67.1 %), or “not at all” (17/27, 63.0 %; ptrend= 0.55). There was also no association between level of trust in the internet or family and desire to quit smoking (ptrend= 0.52 and ptrend= 0.83, respectively). These results were confirmed by multivariate analysis (Table 1)**.**
Conclusion: While smokers have a high level of trust in health information from physicians, this increased level of trust in physician is not associated with an increased likelihood of quitting smoking. Smoking cessation rates may be improved by more careful targeting of interventions by health care providers rather than utilization of standardized information campaigns.



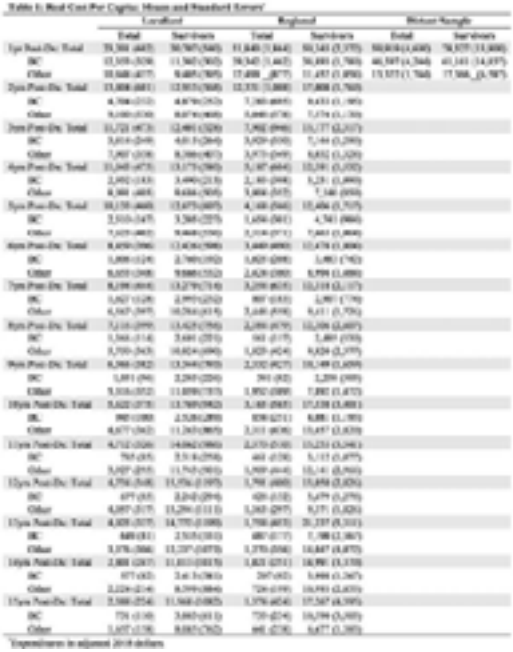
Funding: N/A

POSTERS

Poster #38
LONG TERM PATTERNS OF COST AND UTILIZATION OF MEDICARE BENIFICIARIES WITH BLADDER CANCER

Ankeet Shah[1], Frank Sloan[2], Arseniy Yashkin[3], Igor Akushevich[3], Brant Inman[1]
[1]Duke University Division of Urology, [2]Duke University Department of Economics, [3]Duke University Social Science Research Institute
Presented By: Ankeet Shah, MD

Introduction: Bladder cancer (BC) is highly prevalent in the elderly and costly to treat. This study documents cost and use of services for BC care and for other (non-BC) care received over a 15-year follow-up period by a cohort of Medicare beneficiaries diagnosed with BC in 1998.
Methods: The Surveillance, Epidemiology and End Results (SEER) Program linked to Medicare claims was evaluated with respect to diagnoses, services provided, and Medicare Parts A and B payments. Cost was defined as actual Medicare payments to providers, adjusted to 2018 US$. These were BC-related if the associated claim contained a relevant BC diagnosis code. Those without relevant diagnoses were considered non-BC care. To assess utilization, Part B-covered services were grouped into mutually-exclusive categories, and utilization rates were identified after normalizing to the number of beneficiaries with BC surviving to the year-end.
Results: The SEER population was largely white (92%) and male (73%), with approximately 70% of the population falling between 70-85 years of age. One-year survival was 81% all stages, 90% localized BC, 60% regional BC, and 14% distant BC. Over 15-years, total BC-related cost per beneficiary was $42,011 (95% Confidence Interval (CI): $42,405-$43,417) across all stages combined. Non-BC care cost was approximately double that. Intensity of BC-related care was highest during the first year following BC diagnosis, falling substantially thereafter. After follow-up year 5, there was equilibration of costs between survivors treated for local and regional disease. The costs were driven by non-BC care costs. Patients with distant disease had similarly high costs of treatment as seen in those with regional disease, but few survived beyond the first year (Table 1). There were few statistically significant changes in BC-related utilization beyond year 5 across utilization categories, including physician visits, laboratory test and imaging. This was consistent across stage-specific stratum. Utilization of non-BC care remained constant during follow-up or increased.
Conclusion: Substantial cumulative costs were incurred for non-BC care, and represented a major portion of overall cost of care after 5 years of follow up. While increasing BC survivorship is an important objective, non-BC care will remain a burden to Medicare and will need to be accounted for with the expected population trends.



Funding: Bladder Cancer Advocacy Network

Poster #39
PROLONGED LENGTH OF STAY (LOS) AFTER ROBOTIC RADICAL PROSTATECTOMY (RRP): WHAT PREOPERATIVE FACTORS INFLUENCE LOS?

Ethan Matz, Ashok Hemal, Tim Craven, Ram Pathak
Wake Forest Baptist Medical Center
Presented By: Ethan L. Matz, MD

Introduction: Mean length of stay (LOS) after robotic radical prostatectomy (RRP) is 1.7 days. The primary objective was to elucidate which preoperative factors predicted a prolonged length of stay (defined as > 2 days) utilizing the National Surgical Quality Improvement Program Database (NSQIP).
Methods: Data for surgery years 2007-2017 were downloaded from the NSQIP website and all records with Current Procedural Terminology (CPT) code 55866 (laparoscopic prostatectomy) were selected for inclusion. Univariate associations between individual preoperative factors and LOS>2 were examined using t-tests for continuous factors and chi-square tests for categorical factors. Multivariable logistic regression (LR) was used to estimate odds ratios, 95% confidence intervals (CI) and p-values in a joint model.
Results: Between 2007 and 2017, 49405 RRP were submitted to NSQIP. 5930 (12%) had prolonged length of stay greater 2 days. Table 1 below examines the pre-operative variables that caused a prolonged length of stay. Pre-operative dyspnea and hypertension were not significant.
Conclusion: Particular preoperative diagnoses correlate with prolonged length of stay. As an example, diagnosis of CHF had an almost 5x OR of predicting a prolonged LOS. Understanding patient co-morbid diagnosis and optimizing patient conditions may lessen LOS after RALP.

Variable	P value	Odds Ratio	Confidence Interval
BMI	<0.0001	1.135	1.070 – 1.203
Diabetes	<0.0001	1.188	1.098 – 1.286
Smoking	<0.0001	1.348	1.214 – 1.460
COPD	<0.0001	1.638	1.387 – 1.934
CHF	<0.0001	4.991	2.812 – 8.856
Bleeding disorder	<0.001	1.713	1.382 – 2.123
> 10% weight loss in 6 months previous	0.0004	2.435	1.486 – 3.989
Renal failure/ dialysis	0.0016	1.863	1.257 – 2.740
Low functional status	0.0005	2.392	1.466 – 3.903
ASA (Higher)	<0.0001	1.585	1.305 – 1.469

Table 1 demonstrates the preoperative variables significant for predicting LOS > 2 days.

Funding: NA

Poster #40

OPEN VERSUS MINIMALLY-INVASIVE SURGICAL TECHNIQUES IN PEDIATRIC RENAL TUMORS: A POPULATION-LEVEL ANALYSIS

Kirsten L. Simmons, Student/Trainee[1], Jason C. Chandrapal, MD[2], Steven Wolf, MS[3], Henry E. Rice, MD[4], Elisabeth E. Tracy, MD[4], Tamara Fitzgerald, MD, PhD[4], Gina-Maria Pomann, PhD[3], Jonathan C. Routh, MD, MPH[2]

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Presented By: Kirsten Lanae Simmons, BS

Introduction: Minimally invasive surgery (MIS) for adult tumor resections is well-accepted and may be associated with reduced postoperative pain and length of stay with equivalent oncologic and survival outcomes. However, the use of MIS in pediatric cancer cases has been adopted slowly. A recent National Cancer Database study of Wilms Tumor (WT) noted that only 5% of WT patients under age 5 years underwent MIS. It is unclear whether these reported data fully captured current surgical management trends among adolescents and older children, who we hypothesize are more likely to undergo will have a higher proportion of MIS than younger children.

Methods: We queried the 1998-2014 National Inpatient Sample (NIS), an all-payor database which consists of a 20% stratified probability sample of US hospitals. Inclusion criteria: Age < 18y, ICD-9 diagnostic code for renal tumor, and procedure code for open or laparoscopic (MIS) partial or radical nephrectomy. The primary outcome was surgical technique (open or MIS); secondary outcomes were in-hospital post-operative complications, length of stay, and inpatient costs. Primary predictor was age, grouped as younger children (0-9y) vs. adolescents (10-18y); Wald-Chi square test was used for differences in proportions and unadjusted weighted ANOVA was used to test for differences in means.

Results: 7,369 weighted encounters met criteria and were included. 90.9% were <10 years old and the mean age was 4 years (95% CI: 3.8, 4.2); 49.7% were female. 57.7% were white, 16.8% were black, 17.3% were Hispanic and 8.2% were other. MIS surgery was performed in 1.4% of encounters overall; there was a difference in proportions by age group (1% vs. 5%, p=0.04). Complications were noted in 14.3% of encounters overall; Mean length of stay was 9.1 days overall, and Mean costs were $25,380 overall; there was no evidence of a difference in means by age group.

Conclusion: In this preliminary descriptive analysis, we found evidence that MIS techniques are rarely used in children, but there is a higher proportion of MIS among adolescents. We did not find evidence of a difference in proportions for post-operative complications or evidence of a difference in means for length of stay or cost by age group.

Funding: N/A

Poster #41
NATIONWIDE TRENDS FOR INTERHOSPITAL TRANSFERS FOR UROLOGIC CONDITIONS FROM 2011-2017

Vi Tran, MD, Amber Bettis, MA, Alexandria Corbeau, MA, Andrew Harris, MD
University of Kentucky
Presented By: Vi Thuy Tran, MD

Introduction: Interhospital transfers (IHT), defined as transfers between acute care hospitals, remain largely unstudied in Urology. To improve the quality and safety of IHT for urologic conditions, further investigation is warranted to elucidate trends, rates, rationale, and outcomes for patients who undergo IHT. No prior study has described national trends in IHT for urologic conditions. The objective of our study is to build on our regional IHT work and characterize recent nationwide frequencies of IHT for urological conditions and assess trends amongst states.
Methods: We performed a nationwide cross-sectional retrospective analysis of IHT within MarketScan Research Databases for Truven Health Analytics during January 1, 2011 to September 9, 2017. Patients were characterized by age, gender, length of stay (LOS), and International Classification of Diseases (ICD) diagnosis code for transfer. Results were reported overall and by state including District of Columbia and Puerto Rico. Total state IHT data was divided by the average state population from 2011-2017 to account for increases in transfers due to a larger potential population of patients. State population data was obtained from the United States Census Bureau.
Results: A total of 95,274 patients were identified who underwent IHT for urologic conditions. Overall average age of transfer was 68 years (SD: 20) and LOS was 8 days (SD: 12). The most frequent ICD diagnosis code for transfer was general urinary tract infection (UTI, 38%), followed by other GU conditions including urinary obstruction, hematuria, disorder of urinary tract, retention, and incontinence (17%), shock (11%), and calculus of urinary tract (7%). Overall, California (9149), New York (8844), and Texas (7079) had the highest number of total IHT over the study period. However, when divided by average state population, New York, New Jersey, and South Carolina had the highest ratio of transfers to population. Figure 1 illustrates IHT by total state population.
Conclusion: Interhospital transfers vary by state and do not necessarily correlate with total population size. The most common reason for transfer is general UTI. Lack of standardization of transfer nomenclature makes analysis difficult. Significant variability in transfer ICD codes also exists suggesting further investigation is needed to determine best practices concerning IHT.

Funding: N/A

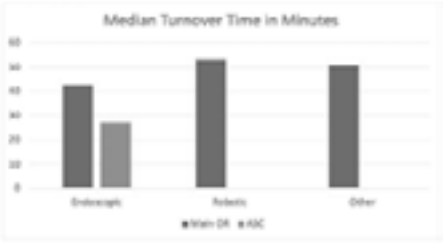
Poster #42
SOCIOECONOMIC FACTORS ASSOCIATED WITH PATIENT NO SHOWS IN THE AMBULATORY UROLOGY CLINIC.
Angela Massey, Daniel Norez, Sabine Nguyen, Mark Bandyk, Hariharan Ganapathi, Marino Robert, Koochekpour Shahriar, Costa Joseph, Balaji KC
Dept of Urology UF-Jacksonville
Presented By: Sabine Nguyen, DO

Introduction: Patient non-attendance, or no-show, to outpatient appointments, and in particular to sub-specialty clinics such as urology, is a financial burden to the healthcare system and its providers. Furthermore, patient no-shows can delay care and potentially lead to an increase in patient morbidity and mortality. In this study, we seek to identify factors that may be associated with patient no-shows in our county's ambulatory urology clinics.
Methods: A retrospective chart review was conducted on patients who were scheduled at the main urology clinics of our academic center between April 2018 and April 2019. The total number of appointments scheduled and patient attendance were computed at each clinic site. Patient attendance was further analyzed according to type of scheduled appointment, type of clinician seen, and socioeconomic status based on the patient's insurance coverage and domicile represented as health zones. Chi-square test was performed in order to determine the relationship between patient no-show and the variables for appointment and patient characteristics.
Results: A total of 1,472 (13.8%) of the 10,709 scheduled appointments were no-show patients. Statistical significance was established between patient non-attendence and the multiple appointment and socioeconomic variables. There was a higher no-show rate for: 1) non-private faculty clinics (15.1%) than private faculty clinic (9.0%), 2) clinics overseen by endourologists (17.3%) and general urologists (14.9%) compared to urological oncologist (11.2%) and reconstructive urologist (11.1%), and 3) clinics headed by advanced healthcare providers such as nurse practitioners and physician assistants (16.5%) compared to urologists (12.6%). No-show clinic patients were associated with those who had no health insurance (76.9%) and mainly those who reside in our county's health zone 1 (20%), in which the population is predominantly homeless, reported a household income of 30% below poverty level, and is only one-third high-school educated.
Conclusion: Highest rates of patient non-attendance is most notable in our non-private faculty clinic and in patients who are non-insured and live in the most socioeconomically disadvantaged sector of our county. Identifying these factors allows for addressing these patient needs, which may curtail the number of patient no-shows to future ambulatory urology appointments.
Funding: n/a

Poster #43
AN INSTITUTIONAL ASSESSMENT OF TURNOVER TIME IN UROLOGY CASES
Nourhan Ismaeel, KC Biebighauser Bens, Dattatraya Patil, Kenneth Ogan, Christopher Filson, Akanksha Mehta, Aaron Lay
Emory University
Presented By: Nourhan Ismaeel, MD

Introduction: Operating room (OR) time is a valuable commodity to health care systems. Prolonged turnover time (TT) is a common complaint amongst surgeons. As a quality improvement initiative, we analyzed the TT for urology cases at our institution's main OR and ambulatory surgery center (ASC) to identify opportunities for change.
Methods: The primary aim was to determine current TT at our institution's main OR and ASC. We included all urologic surgeries performed in April 2018. We excluded procedures that were late scheduled or "add on" procedures. We compared TT between main OR and ASC; endoscopic cases, robotic cases, and other cases; and day of week using ANOVA.
Results: We had a total of 176 cases, 86 of those cases were first start cases. As such, 90 cases had TT calculated. Results are summarized in the figure below. TT differed by

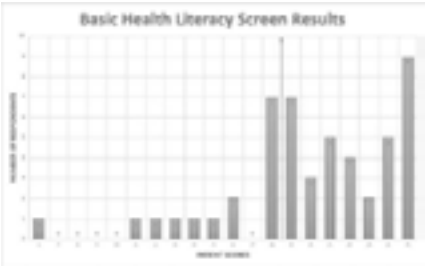
day of week, with Friday TT being lowest at 37 minutes and Wednesday being the highest at 52 minutes (p = 0.034). ASC endoscopic TT was significantly shorter than main OR endoscopic TT (27 min vs 43 min, p < 0.001). Our institutional goal TT is 30 minutes and only 16.7% of our cases met that goal. Total time spent on TT in one month in urology cases was 70 hours and 51 minutes.
Conclusion: Less than 20% of our cases met the goal turnover time at our institution. Endoscopic cases done at ASC had significantly lower TT. Meeting the goal TT would result in a savings of almost 26 hours, which would translate to maximizing OR capacity, increasing OR efficiency, improving patient care, and alleviating patient and surgeon frustration.
Funding: N/A



POSTERS

Poster #44
ASSESSING HEALTH LITERACY IN PATIENTS WITH NEPHROLITHIASIS
Anand Prabhu[1], Amul Bhalodi, MD[1], John Roger Bell, MD[2], Jason Bylund, MD[2], Andrew Harris, MD[1]
[1]*University of Kentucky,* [2]*UNIVERSITY OF KENTUCKY*
Presented By: Anand Sachin Prabhu, B.S.

Introduction: Health Literacy is a term employed to assess the ability of people to meet the increasing demands related to health in a rapidly evolving society. Low levels can affect the social determinants of health, health outcomes, and the use of healthcare services. Patients with limited health literacy have been shown to have poorer surgical outcomes. The purpose of this study was to employ a validated basic health literacy screen (BHLS) to assess health literacy in patients with nephrolithiasis.
Methods: Fifty Patients with nephrolithiasis were administered the BHLS from June 2019-August 2019. Patients were also selected based on recent history of nephrolithiasis and the premise they could listen/respond in English. The interviewer verbally administered the BHLS and patients responded verbally. Results were summed and analyzed.
Results: A precedent has been set by Jecklin et al. (2014) for attaching numeric values to responses to the validated BHLS, with the recommendation of using a score of less than 19 for the summed score to indicate low health literacy. Figure 1 shows that 30% of the patients interviewed were determined to have low health literacy. Further analysis of individual responses showed 22% of the patients always need someone (family member or staff at the clinic or hospital) to help them read medical forms. 30% of interviewed patients noted they were less than “quite confident” in filling out medical forms by themselves. 26% of interviewed patients noted they were more than “occasionally” having problems learning about their health information because of trouble understanding written health information. 16% of interviewed patients noted they were more than “occasionally” having trouble understanding what their doctor, nurse, or pharmacist tells them about their health or treatments. 36% of interviewed patients noted they more than “occasionally” have trouble remembering instructions from the doctor, nurse, or pharmacist after they get home.
Conclusion: Low health literacy levels are common in medicine. Patients with low health literacy typically have worse outcomes. Further study to find ways to increase patient understanding of disease and management is warranted.
Figure 1: Brief Health Literacy Screen Results.
Funding: n/a



Poster #45
SHOULD WE RELY ON YOUTUBE TO AUGMENT DISSEMINATION OF INFORMATION REGARDING SURGICAL PROCEDURES?
Parth Thakker, Robert Wilson, Ram Pathak
Wake Forest Baptist Medical Center
Presented By: Parth Thakker, MD

Introduction: YouTube, a video-sharing website, was created in 2005 and allows users to view, upload and share media. In fact, YouTube is increasingly being utilized in the healthcare field to disseminate medical information. The primary aim of our research is to evaluate the medical integrity of YouTube with respect to Robot-assisted Radical Prostatectomy (RARP) and its ability to provide viewers with adequate information.
Methods: A search of videos on the popular media site, YouTube, were conducted using the phrase "robotic prostatectomy". The top ten videos were accessed on 8/31/19. One video was excluded as it dealt with "simple prostatectomy". Links were sent to reviewers of differing levels of training (attending physician, resident, and medical student) with a survey of five questions pertaining to the quality of the videos (listed below) and asked to rank the video on a scale of 1-10.

- Do you think this video represents the appropriate risks and benefits of this operation?
- Were the complications explained in a clear and succinct manner?
- Were the videos easy to interpret or too complex without needed explanation?
- Do you think the video was detailed enough to answer your questions and address your concerns?
- How likely are you to recommend videos to a friend or family member getting the same surgery?

Results: 7 videos were created by single surgeons. 1 video was created by a medical healthcare network. 1 video was created by an medical institution. All of the videos were uploaded between 2010-2018. The average video length was 24 minutes and 20 seconds. The average number of views of all videos was 258,783.
Across all videos, attending physicians consistently gave lower ratings than the resident. While the resident reviewer often gave lower scores than the student, this was not always the case.
Conclusion: YouTube performs poorly when describing the complications of RARP, particularly as scores by all three raters were low. Additionally, as knowledge base increased among raters, the videos were deemed not as useful for patients. Thus, patients should be cautioned that solely relying on YouTube for making healthcare-related decisions does not accurately reflect nor replace the patient-physician consultation. Surgeons should highlight the shortcomings of YouTube during patient counseling.
Funding: N/A

Poster #46

ADMISSIONS FOR RADIATION CYSTITIS ARE INCREASING AMONG CANCER SURVIVORS IN THE UNITED STATES: ANALYSIS OF THE HEALTH CARE COST AND UTILIZATION PROJECT

William Boysen, MD, Brian Inouye, MD, Andrew Peterson, MD
Duke University Medical Center
Presented By: William R. Boysen, MD

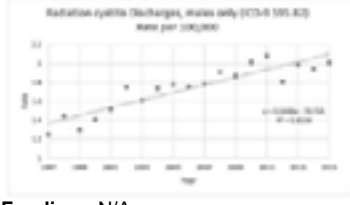
Introduction: Advances in care for patients with cancer are leading to a rapid growth in cancer survivors, with unique concerns for future healthcare. Of the 16.9 million cancer survivors, up to 40% have received pelvic radiation for treatment of prostate, colorectal, and gynecologic malignancies putting this population at significant risk for long-term side effects from radiotherapy. We sought to characterize trends in admissions for side effects of pelvic radiation (radiation cystitis), and determine the associated charges and costs.

Methods: With IRB approval, we queried the Healthcare Cost and Utilization project (HCUP) National Inpatient Sample (NIS) and the Nationwide Emergency Department Sample (NEDS) using ICD-9 codes for radiation cystitis (595.82). HCUP is the largest collection of hospital data in the US, with all-payer, encounter-level information on inpatient stays and Emergency Department (ED) visits in US hospitals beginning in 1988. Data on demographics, admission, discharge, charges, and costs were analyzed from 1996 to 2015. Subgroup analysis of male patients was performed to focus on those who were more likely treated for prostate cancer.

Results: Between 2006 and 2015, ED visits for radiation cystitis among men increased significantly from 1.46 to 1.73 per 100,000 (R2: 0.8152, $p < 0.001$). Of these ED presentations, 90.4% resulted in an inpatient admission, and this admission rate did not vary over time. Men who required admission were significantly older than those released from the ED (mean age 77.0 versus 73.6 years, $p < 0.01$). Among admitted male patients, the incidence of radiation cystitis as the discharge diagnosis increased from 1.25 to 2.00 per 100,000 patients from 1996 to 2015 ($p < 0.01$, Figure 1). Admission for radiation cystitis in 2014 was associated with a mean hospital charge of $52,530 and a mean cost of $13,196. This equates to aggregate annual charges of approximately $118 million and cost of $31.5 million for men alone.

Conclusion: The incidence of ED visits and hospital admissions for radiation cystitis is rising, with a significant associated financial burden to the health care system. Opportunities exist to dedicate resources toward prevention, education, and treatment of radiation cystitis in order to decrease expenditures while improving quality of life for these cancer survivors.

Figure 1



Funding: N/A

POSTERS

Poster #47

OUTCOMES OF PRIMARY AND REVISION ARTIFICIAL URINARY SPHINCTER (AUS) BY EITHER TRANSCORPORAL OR BULBAR URETHRAL CUFF PLACEMENT

Tad Manalo, BS[1], George Ghareeb, MD, MBA[1], Nelson Nwannunu, BS, MS[2], Dattatraya Patil, MBBS, MPH[1], Kenneth Carney, MD, PharmD[1], Niall Galloway, MD[1], Lindsey Hartsell, MD[1]

[1]Emory University School of Medicine, Department of Urology, Atlanta, GA, [2]SUNY Downstate Health Sciences, Brooklyn, NY

Presented By: Tad Manalo

Introduction: Placement of an AUS for incontinence is associated both with a high satisfaction rating as well as a high complication rate including the need for removal of the prosthesis due to erosions, infections, and device malfunctions. In patients with prior radiation or surgery, the rate of AUS malfunction or erosion is particularly high. In order to mitigate the potential complications of AUS placement in high risk patients, transcorporal cuff placement has been used with some success.

Methods: All patients undergoing AUS placement at our institution from 2006-2016 were retrospectively reviewed for indication for AUS placement, comorbidities and outcomes.

Results: Over a 10 year period, we place 117 AUS devices, of which 41 were transcorporal and 76 were bulbar urethral cuff placement.11/41 transcorporal cuff placements were for a failed prior sphincter and 30/41 were done as the primary AUS placement because the patient was deemed to be at high risk for complications. Of these high risk patients, 26 were deemed to be high risk due to prior radiation and 4 were due to prior surgery. Of the 30 primary transcorporal placements, 5 needed reoperation while 8 of the 11 secondary placements required reoperation. Reoperation was required in 32/76 in the bulbar cuff placement group.

Conclusion: Patients with a transcorporal cuff placement had a lower reoperation rate than bulbar cuff placements. In those patients who were assessed to be high risk prior to their first AUS and this first AUS was placed transcorporally, a high rate of success 83.3% was observed. In summary, it is reasonable to place the cuff in a transcorporal position in patients suspected of being at high risk for failure of the prosthesis due to a previous history of surgery or radiation and this may be associated with higher durable rates of success.

Funding: N/A

Poster #48

EVALUATION OF FACTORS POSTOPERATIVE MORBIDITY ASSOCIATED WITH EARLY VERSUS LATE DISCHARGE FOLLOWING ARTIFICIAL URINARY SPHINCTER (AUS) SURGERY IN MALES IN THE UNITED STATES

Hoang Minh Tue Nguyen[1], Igor Voznesensky[1], Mahmoud Khalil[2], Mohamed Kamel[2], Naleen Raj Bhandari[3], Nalin Payakachat[3], Rodney Davis[4], Bruno Machado[4], Wayne J. G. Hellstrom[1], Omer Raheem[1], Cooper Benson[1]

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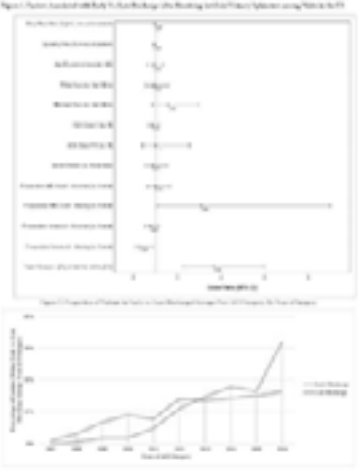
Presented By: Hoang Minh Tue Nguyen, MD

Introduction: There has been a shift towards earlier discharge after artificial urinary sphincter (AUS) surgery. However, there has not been a large-scale study evaluating factors and postoperative morbidity associated with early (24 hours) versus late (>24 hours) discharges of the male patient following AUS placement. We utilized the National Surgical Quality Improvement Program (NSQIP) database to study these factors and to compare short-term (30-day) postoperative morbidity and mortality across the two groups.

Methods: NSQIP database was queried to identify patients who underwent AUS placement. Patients were classified into groups; early discharge (ED, 24 hours) and late discharge (LD, >24 hours). Patient demographics, comorbidities, American Society

of Anesthesiologists (ASA) classification, operating time (OPTIME), preoperative white blood count, preoperative hematocrit, and complication rate were recorded and compared between the two groups using Chi-square or *t* tests. Multivariable logistic regressions determined factors associated with early (vs. late) discharge and the likelihood of having a complication in those who were discharged early (vs. late). Adjusted odds ratios and 95% confidence intervals were reported.
Results: A total of 1,176 patients were identified between 2007 and 2016. Of these patients, 232 were ED and 944 were LD. Operating time was shorter in ED group (83 minutes) than in LD group (95 minutes, p<0.001). In both groups, the most common age group was 65-74 years and most patients were white (77.8%). There was no difference in ASA class between ED and LD (50.9% ASA I/II vs 43.3% ASA I/II, p=0.115). Hypertension and diabetes were the most prevalent comorbidities in both groups (60.3% vs 69.1% and 24.1% vs 22.7% for ED and LD respectively, p<0.001 and p=0.634 respectively). Overall, the complication rate was similar in both groups (ED: 4.3% vs LD: 3.4%, p=0.498). In a multivariable analysis, year of surgery after 2012 is the only factor associated with early discharge (OR=3.66, p<0.001).
Conclusion: At national level, there are no differences in postoperative morbidity between early and late discharges. It is safe to discharge patients early after AUS surgery with non-inferior rate of complications. There is a trend towards more early discharges, specifically after 2012. A larger prospective study on the feasibility and safety of outpatient AUS is needed.



Funding: N/A

Poster #49

IDENTIFICATION OF A NOVEL STEM-LIKE CD4 T CELL IN KIDNEY CANCER

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Presented By: Maria Andrea Cardenas

Introduction Tumor infiltrating lymphocytes (TILS) are reported to have a prognostic benefit in various tumor types. CD8 T cell infiltration can independently predict survival and response to immunotherapy in kidney cancer patients. Given the importance of the CD8 T cell response in cancer, it is crucial to understand what signals promote their infiltration and proliferation to support the anti-tumor response. CD4 helper T cells may promote CD8 T cell infiltration, thus CD4 TILS could amplify the anti-tumor CD8 T cell response.
Methods Tumor tissue was collected from renal cell carcinoma (RCC) patients undergoing surgery at Emory University Hospital. Intraoperative tumor samples were processed and analyzed by flow cytometry for various T cell specific markers. Following surgical resection, fresh tissue sample was processed and sorted using fluorescently activated cell sorting (FACS) based on CD4 T cell activation markers and analyzed using 10x sequencing and *in vitro* assays.
Results The proportion of CD8 TILs, as measured by flow cytometry, was found to correlate significantly ($R = 0.8$, $p < 0.0001$) with CD4 TILS in 160 RCC patients, suggesting that CD4s may play a role in promoting the tumor-specific CD8 T cell response. In examining the phenotype of the tumor infiltrating CD4 T cells by single cell RNAseq, three main CD4 populations were described. One which expresses genes associated with stem-like and precursor CD4 T cells, while the other two subsets have a gene signature of Th1s and Tregs. To assess the functional differences of the CD4 populations in the tumor, we sorted these populations and cultured/stimulated them *in vitro* for 5 days. The stem-like CD4 subset proliferated and differentiated into a Th1 and a Treg population under appropriate polarizing conditions, while the sorted Th1 and Treg cells underwent no proliferation or lineage differentiation. Importantly, this CD4 stem-like population was associated with improved cancer-specific survival in over 150 RCC patients.
Conclusion We found a novel stem-like CD4 T cell that is associated with improved outcomes in kidney cancer patients that had not been previously described in viral infection models. This CD4 population maintains proliferative and lineage differentiation capacities and may be one of the key populations promoting the anti-tumor CD8 response.
Funding: N/A

Poster #50

NOVEL PLASMA GLYCOPROTEIN BIOMARKERS PREDICT PROGRESSION FREE SURVIVAL (PFS) IN CLEAR CELL RENAL CELL CARCINOMA (ccRCC)

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Presented By: Amanda A. Myers, MD

Introduction: There are limited data on the utilization of post-translational modifications of peptides as biomarkers for renal cell carcinoma (RCC). We employed high-throughput proteomics to evaluate expression of glycosylated peptides as novel markers for ccRCC PFS.
Methods: Plasma samples from newly diagnosed ccRCC were obtained from an established RCC tissue registry prior to their nephrectomy. Glycoproteomic analysis and identification was completed with Liquid Chromatography with tandem mass spectrometry (LC-MS/MS). Age-adjusted, Cox proportional hazard models were

constructed to observe the association between glycopeptides and progression free survival (PFS). The cutoff which optimized Harrell's c-index was employed to dichotomize expression for PFS Kaplan-Meier curves.
Results: We analyzed plasma samples 77 ccRCC patients: 48(62%) patients were male and 29 patients were female (38%). The mean age was 61 years (range: 33-79 years). Of the patients, 54 were stage I (70%), 9 were stage II (11.7%), 12 were stage III (15.6%), one was stage IV (1.3%), and one was missing. The average length of follow-up was 3.4 (range: 0.04 – 9.83) years. A total of 13 patients had recurrent disease. Glyproteomic analysis identified 48 markers with a false discovery rate less than 0.05, including 36 glycosylated peptides. Five of these glycosylated peptides had a continuous hazard ratio > 6 (range 6.3-11.6. These included G2S glycan motif from Prothrombin (HR=6.47, P=9.53E-05), G2SF motif from Immunoglobulin J Chain (HR=10.69, P=0.001), Man5 motif from Clusterin (HR=7.37, P=0.002), G2S2 motif from Complement Component C8A (HR=11.59, P=0.002), and an undecorated hybrid-type glycan from Apolipoprotein M (HR=6.30, P=0.003). Kaplan-Meier curves based on dichotomous expression of these five glycopeptides resulted in hazard ratios from 3.9-10.7, all with p-value < 0.03.
Conclusion: Glycosylated peptides appear to demonstrate promise as biomarkers for ccRCC PFS. These findings warrant further investigation and validation.
Funding: N/A

Poster #51
MIRNA OF EXOSOMES IN CLEAR CELL RENAL CELL CARCINOMA DEMONSTRATES POTENTIAL BIOMARKERS BETWEEN AGGRESSIVE AND INDOLENT DISEASE
Joshua Pincus[1], Hogyoung Kim, PhD[2], Jacob Greenberg[1], Asim B. Abdel-Mageed, DVM, PhD[2,3,4], Louis S. Krane, MD[2]
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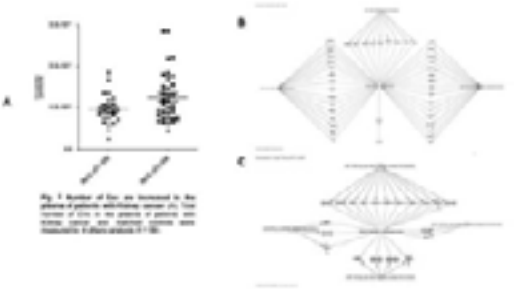
Presented By: Joshua Pincus

Introduction: Renal cell carcinoma remains an aggressive malignancy with known substantial cross talk between cells. Exosomes (exo) are small extracellular vesicles (EVs) secreted from cancer cells and play important roles in tumoral signaling, and resistance to therapy. We collected exosomes from high and low risk clear cell renal cell carcinomas (ccRCC) to determine if a signal of aggressive malignancy could be identified. We then evaluated pathways identified from these miRNA as novel therapeutic targets.
Methods: The study protocol was approved by the Biospecimen Core Laboratory (BCL) of the Louisiana Cancer Research Center (LCRC) (New Orleans, LA, USA). The 59 plasma samples of kidney cancer patients were collected from subjects, including pT1 and pT3. Venipuncture blood was collected in EDTA tubes and then centrifuged for 4°C. Plasma was aliquoted and stored at 80°C. We employed the TRPS technology (qNano IZON system; Izon, Cambridge, MA, USA) to measure the concentrations, size-distribution and diameters of the extracellular vesicles (EVs; exosomes and MVs). 50–

software. miRNA sequencing was performed using Nanostring ® according to manufacturers guidelines. Pathway analysis was performed using Qiagen Ingenuity Pathway Analysis.
Results: Patients with high risk (pT3 or greater) malignancies demonstrated higher concentrations of exosomes collected in serum (Figure 1). The most differential increases were seen in miRNA-378, mir-1253, mir-1283 and mir-21-5-p. Decreases were seen in mir1909-3p, 1304-3p, 100-5p and 876-3p. miRNA sequencing highlighted several miRNAs which may play a role in cancer progression as seen in IPA analysis (Figure 1).
Conclusion: These findings suggest that high risk renal malignancies do demonstrate a unique exosomal signature. Further validation of these markers may create blood based

markers for ccRCC aggressiveness. Analyses of pathways highlight several potential novel therapeutic treatment pathways.



Funding: N/A

Poster #52
CORRELATION OF TOPOISOMERASE II (TOPO-II) EXPRESSION LEVELS WITH CLEAR CELL RENAL CELL CARCINOMA (ccRCC) SIZE AND STAGING
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Presented By: Daniela Andrea Haehn, MD

Introduction: TOPO-II is a critical enzyme of DNA replication. It is well-known that overexpression of TOPO-II is associated with the prognosis of lung, breast, and ovarian cancers; however, it has been poorly evaluated as a biomarker of ccRCC. This study prospectively evaluates the correlation between TOPO-II expression and tumor stage (pT), grade, and Stage, Size, Grade, and Necrosis (SSIGN) score in patients with ccRCC that underwent nephrectomy.
Methods: TOPO-II expression of 47 ccRCC tissue samples were analyzed using immunohistochemistry and recorded as the number of positive cells per square millimeter. TOPO-II expression was evaluated as a continuous variable. Cutoff was set at 16.6 (high: 16.6 and low:<16.6) as previously described in a retrospective study assessing the correlation of TOPO-II expression with ccRCC and progression-free survival as previously described by Parker et al. A Spearman's rank-order correlation (rs) was used to explore the relationship between pT, size, grade, and application of the SSIGN score with TOPO-II expression.
Results: A total of 47 patients underwent nephrectomy over an 8-month period. Median age was 64 years (range,38-84) and median tumor size was 4 cm (range, 1-12). A total of 2 (4%) patients had pT1, 22 (47%) patients had pT1a, 13 (28%) had pT1b, 9 (19%) patients had pT3a, and 1 (2%) patient had pT3c. Four (9%) patients had tumor grade 1, 29 (63%) patients had tumor grade 2, 12 (26%) patients had tumor grade 3, 1 (2%) patient had tumor grade 4; 1 (1%) tissue sample was not graded. SSIGN score was high (>8) for 4 (9%) patients, intermediate (4-7) for 7 (15%) patients, and low (0-3) for 36 (77%) patients. TOPO-II expression was high in 36 (77%) patients and low in 11 (23%) patients. Correlation with TOPO II expression was strong for tumor grade (rs=0.68,p<0.001), moderate for SSIGN score (rs=0.52,p<0.001), and weak for tumor stage (rs=0.36,p=0.01), and tumor size (rs=0.40,p=0.005).
Conclusion: TOPO-II expression has a significant weak correlation with pT and tumor size, a moderate relationship with SSIGN score, and a strong correlation with tumor grade. Therefore, its impacts on progression-free survival must be due to other associations or molecular mechanisms. Further prospective studies are necessary to confirm these findings.
Funding: N/A

Poster #53

MOLECULAR MECHANISMS OF BETA-DEFENSIN 1 LOSS IN RCC

Tad Manalo, BS[1], Natalie DeMars[2], Alexa Dantzler, BS[1], Haydn Kissick, PhD[1], Carey Jansen, BS[1], Viraj Master, MD, PhD[1], John Pattaras, MD[1], Kenneth Ogan, MD[1], Rebecca Arnold, PhD[1], John Petros, MD[1]

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Presented By: Tad Manalo

Introduction: Beta-defensin-1 (DEFB1) a tumor suppressor gene with protein expression frequently lost in clinical renal cell carcinoma (RCC) (1) is a known chemoattractant for immune cells (2). The loss of DEFB1 may prevent immune recognition of the cancer leading to a more aggressive course. The molecular mechanism(s) of loss of DEFB1 expression are poorly understood.

Methods: Seventy three patients with RCC were examined by various methods. DEFB1 copy number (CN) was determined by Taqman Copy Number Assay (ThermoFisher Scientific) using either FFPE or frozen tissue from nephrectomy specimens. RNA message level was assessed by RT-PCR. Six tumors were assessed at the protein level by IHC and results compared with T-cell infiltration.

Results: The majority of DNA contained 2 copies of the DEFB1 gene. 2 tumors had unequivocal loss of one copy of DEFB1 in the tumor and an additional two cases where tumor-specific CN loss was seen but confirmation was equivocal. There were 3 cases of definitive tumor-specific CN gain (including one where the tumor had 4 copies) and two with equivocal gain from 2 to 3 copies. All three patients with definitive tumor-specific CN gain had early stage clear cell RCC that was completely excised (3-6.7 cm in greatest dimension). Complete loss of DEFB1 RNA was seen in one of 4 tumor-normal pairs analyzed, confirming our previous results (1). In the 6 tumors stained for DEFB1 and T-cell infiltration, DEFB1 expression correlated with T-cell infiltration.

Conclusion: While it has been documented that DEFB1 expression is lost or significantly downregulated in the majority of RCCs in a tumor-specific fashion, the molecular basis for this has remained poorly studied. Our findings suggest that loss may be due to allelic loss, complete loss of mRNA, or neither. Three patients with DNA copy gain all had early stage tumors that were amenable to complete surgical excision, perhaps suggesting favorable clinical characteristics. While this study did not address post-translational mechanisms, the fact that a majority of clinical cases show protein loss or down-regulation while most cases have preserved DNA and RNA levels, suggests there as a possible third mechanism of loss.

1. Lab Invest. 2003 Apr;83(4):501-5. PMID:12695553
2. Science. 1999 Oct 15;286(5439):525-8. PMID: 10521347

Funding: Institutional

Poster #54

OVERALL SURVIVAL OF BIOPSY CONFIRMED T(ONE)B AND T(TWO)A KIDNEY CANCERS MANAGED WITH OBSERVATION: INFLUENCE OF TUMOR HISTOLOGY

Jamie Michael[1], Nermarie Velazquez, MD[2], Audrey Renson, PhD[3], Hung-Jui Tan, MD[4], Tracy L. Rose, MD, MPH[5], Matt Raynor, MD[4], Stella K. Kang, MD[6], William C. Huang, MD[2], Marc A. Bjurlin, DO, MSc, FACOS[4]

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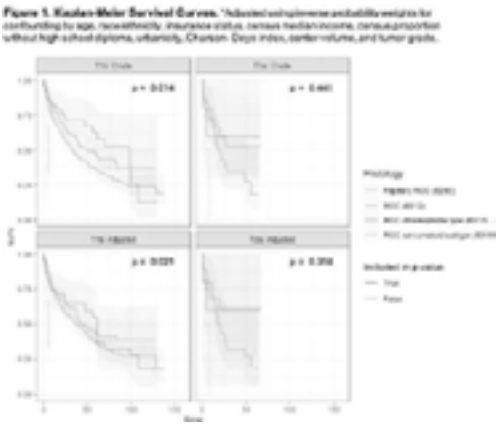
Presented By: Jamie Michael

Introduction: The natural history of observed large (T1b [4-7cm] or T2a [>7-10cm]) kidney cancers is not well known. Both increasing size and histologic subtype of renal cell carcinoma (RCC) may impact survival of those patients with large kidney cancers

being observed. The aim of our study was to determine the overall survival of patients with biopsy proven, T1b and T2a RCC.
Methods: We queried the National Cancer Data Base for the years 2004 through 2015 for patients with biopsy proven RCC which was greater than 4cm and who were managed non-operatively. OS was estimated by Kaplan-Meier curves based on histologic subtype. Cox proportional regression models were used to determine whether histologic subtypes predicted survival for each stage. Our adjusted model used inverse probability weights for possible confounding factors including age, sex, race/ethnicity, insurance status, median income, proportion without high school diploma, urbanicity, Charslon- Deyo index, and tumor grade.
Results: A total of 645 patients with T1b and 81 with T2a were identified with biopsy confirmed RCC. Of those 445 were clear cell, 202 papillary, 70 chromophobe, 8 sarcomatoid, and 1 collecting duct. In patients with T1b kidney cancers Kaplan-Meier curves demonstrated a difference in OS between histologic subtypes (p=0.021, Figure 1) with a greater median OS for patients with chromophobe (61.2 months, HR 0.68, p=0.142) and papillary (42.4 months, HR 0.77, p=0.098) compared to clear cell (38.3 months, reference group). However, in patients with T2a kidney cancers there was no significant difference in survival based on histology (p=0.314).
Conclusion: Histologic subtype appears to influence OS in observed T1b RCC where both chromophobe and papillary demonstrate better OS compared to clear cell. However, no such differences are noted for T2a tumors. Obtaining histological variant in higher stage tumors may have limited utility in predicting OS although our study likely was underpowered in this cohort given the rarity of observing these larger masses. This observational study supports the utility of renal biopsy to establish histologic subtype and inform decision making in T1b renal masses.



Funding: N/A

Poster #55
EXAMINING THE ROLE OF CONTRAST-ENHANCED RENAL ULTRASOUND IN CHARACTERIZING INDETERMINATE RENAL LESIONS IN THE SETTING OF CHRONIC KIDNEY DISEASE
Ava Saidian, Department of Urology, Taylor Tucker, Kristin Porter, Department of Radiology, Stephen Leahy, Soroush Rais-Bahrami, Department of Urology
University of Alabama-Birmingham
Presented By: Ava Saidian, MD

Introduction: The prevalence of chronic kidney disease (CKD) in the United States is estimated to be over 14%. One particular difficulty that arises when caring for these patients, is accurate diagnosis of renal lesions without the use of intravenous contrast. Contrast Enhanced Renal Ultrasound (CERUS) is a diagnostic tool with the potential to

allow for more precise imaging without the nephrotoxic effects of standard contrast in patients with indeterminate renal lesions and CKD.
Methods: A retrospective chart review of patients who underwent CERUS from 2014 to 2015 was performed at a single institution with data collection focused on renal function, prior imaging of renal lesions, and final clinical and pathological diagnoses. The main imaging modalities patients underwent prior to CERUS included Computed Tomography (CT), Magnetic Resonance Imaging (MRI), and non-contrast enhanced ultrasound. Patients were separated into two cohorts based on renal function with an eGFR<60 defining the CKD cohort. Comparisons were made between the two cohorts based on the results and findings of prior imaging modalities and follow-up CERUS performed.
Results: A total of 169 patients had undergone a CEUS from 2014 to 2015 at a single academic institution. 104 patients with eGFR<60 who were classified as having CKD. A comparative analysis of categorical variables was done using chi-squared and Fisher's exact test. CEUS provided specific diagnosis, new diagnosis and/or confirmed diagnosis of previously labeled "indeterminant renal lesions" by other imaging modalities in 41 (39.4%) of the CKD patients compared to 13 patients (20.0%) with normal renal function (p=0.0084). CEUS also resulted in a change in Bosniak classification of cysts in 2 (4.3%) of CKD patients compared to 8 (22.8%) patients with normal renal function (Fischer's Exact p=0.017). Finally, CEUS resulted in a change in the number of lesions in 2 (1.9%) CKD patients compared to 5 (7.7%) patients with normal renal function (Fischer's Exact p=0.11).
Conclusion: Though US has its limitations, CEUS can help differentiate and further classify indeterminate renal lesions that may be concerning for malignancy in patients with CKD. Further studies are necessary to validate these findings and further elucidate the mechanisms for the findings to optimize imaging selection in patients with compromised renal function.

CHANGES FROM INDETERMINATE LESIONS	CKD (eGFR<60)	Normal Renal Function (eGFR≥60)	Total (CKD + Normal Renal Function)
No Change	63	52	115
Indeterminate Lesion → Diagnosed Confirmed Lesion/New Lesion	41	13	54
Total Number of Cases	104	65	169
Percentage of Changes from Indeterminate Lesions	39.4%	20.0%	31.9%
			p=0.0084
CHANGES IN BOSNIAK CLASSIFICATION OF CYSTS	CKD (eGFR<60)	Normal Renal Function (eGFR≥60)	Total (CKD + Normal Renal Function)
No Change (or Bosniak was not assessed)	44	27	71
Cysts with Change in Bosniak	2	8	10
Total Number of Cases with Diagnosis of Cyst	46	35	81
Percentage with Change in Bosniak	4.3%	22.8%	12.3%
			Fischer's Exact p= 0.017
CHANGES IN NUMBER OF LESIONS	CKD (eGFR<60)	Normal Renal Function (eGFR≥60)	Total (CKD + Normal Renal Function)
No Change	102	60	162
Change in Number of Lesions	2	5	7
Total Number of Cases	104	65	169
Percentage of Changes in Number of Lesions	1.9%	7.7%	4.1%
			Fischer's Exact p= 0.11

Funding: UAB-UCSD O'Brien Center for Kidney Injury Research Summer Program

Poster #56
RENAL MASSES: PATHOLOGIC VARIATION IN THE DIALYSIS AND TRANSPLANT PATIENT POPULATION FOLLOWING LAPAROSCOPIC NEPHRECTOMY
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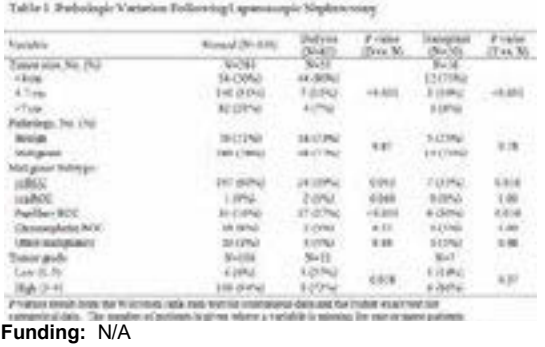
Presented By: Kevin Parikh, MD

Introduction: It has been well studied within urology literature that patients with end-stage renal disease have an increased risk of developing renal cell carcinoma (RCC) within their native kidneys compared to the general population. We conducted a retrospective single-institution study to evaluate dialysis, renal transplant, and normal

control patients who underwent laparoscopic nephrectomy for renal masses. Our goal was to determine if renal mass pathology of the dialysis and renal transplant patient population differed from the general population undergoing laparoscopic nephrectomy.
Methods: Data was collected from 412 patients who underwent laparoscopic nephrectomy at Mayo Clinic Florida over an 11 year period. Among the 412 patients, 62 were on dialysis, 20 had a renal transplant in place, and 330 were considered normal controls. Pathologic outcomes of dialysis and transplant patients were compared to controls using Wilcoxon rank sum test, Fisher exact sum test, and the Holm step down method for statistical analysis. Specific pathologic factors evaluated and compared included tumor size, malignant vs. benign, renal cell carcinoma subtype, and tumor grade.
Results: Dialysis patients vs normal controls: There was evidence to suggest that dialysis patients compared to controls had smaller tumors (<4 cm: 80% (44/55) vs. 20% (56/283); P<0.001), fewer clear cell RCC (39% vs. 60%; P=0.003), more papillary RCC (27% vs. 10%; P<0.001), and fewer high grade tumors (73% (8/11) vs. 94% (100/106); P=0.038). After adjusting for multiple testing (P<0.0056 considered statistically significant based on 12 tests), tumor size, clear cell RCC, and papillary RRC remained statistically significant. Transplant patients vs normal controls: Our data suggested that transplant patients compared to controls had smaller tumors (<4 cm: 75% (12/16) vs. 20% (56/283); P<0.001), fewer clear cell RCC (35% vs. 60%; P=0.036), and more papillary RCC (30% vs. 10%; P=0.016). Only tumor size remained statistically significant after adjustment for multiple testing (P<0.0045 considered statistically significant).
Conclusion: Dialysis and renal transplant patients have differing pathology when compared to normal controls following laparoscopic nephrectomy for renal masses. Further research is needed to understand if these pathologic variables are secondary to the molecular pathways associated with dialysis and renal transplantation or associated with biases from increased screening and diagnosis in dialysis and transplant patients.



Funding: N/A

Poster #57
ASSESSMENT OF LAPAROSCOPIC NEPHRECTOMY OUTCOMES IN PATIENTS ON DIALYSIS AND RENAL TRANSPLANT PATIENTS COMPARED TO NORMAL CONTROLS
Kevin Parikh, MD[1], Amanda Kahn[1], Ashley Shumate, MD[1], Daniela Haehn, MD[1], Essa Bajalia[1], Colleen Ball, MS[2], David Thiel, MD[1]
[1]Mayo Clinic, Department of Urology, Jacksonville, FL, [2]Mayo Clinic, Division of Biomedical Statistics and Informatics, Jacksonville, FL
Presented By: Kevin Parikh, MD

Introduction: We aimed to evaluate surgical outcomes following laparoscopic radical nephrectomy in patients on dialysis and those with renal transplant in place compared to normal controls.
Methods: Data was collected from 412 patients who underwent laparoscopic nephrectomy by a single surgeon at Mayo Clinic in Jacksonville, FL from July 2007 to

October 2018. Among the 412 patients, 62 were on dialysis, 20 had a renal transplant in place, and 330 were considered normal controls. Surgical outcomes of dialysis and transplant patients were compared to controls using Wilcoxon rank sum test, Fisher exact sum test, and the Holm step down method for statistical analysis. Specific surgical outcomes studied included operative time, postoperative complications, length of hospital stay and 90-day readmission rate.
Results: Comparing dialysis patients to normal controls: There was evidence to suggest that dialysis patients compared to controls had a shorter total operative time (median: 133 vs. 149; P=0.022). Dialysis patients compared to controls did not have any significant differences in postoperative complication rate (8% vs 5%; P=0.34), greater than 3 day hospital stay (23% vs 16%; P = 0.20), or 90-day readmission rate (8% vs 6%; P=0.56). Comparing transplant patients to normal controls: Transplant patients compared to normal controls had a statistically significant higher rate of 90-day readmission (20% vs 6%; P=0.034). Transplant patients compared to normal controls did not have any significant differences in median operative time (134 vs 149; P=0.47), postoperative complication rate (15% vs 5%; P=0.075), or greater than 3 day hospital stay (30% vs 16%; P=0.12).
Conclusion: When comparing dialysis patients to normal controls undergoing laparoscopic nephrectomy, dialysis patients did not have worse surgical outcomes. In fact, dialysis patients actually had a shorter operative time than their normal control counterparts. Transplant patients, however, did have a higher 90-day readmission rate after laparoscopic nephrectomy and slightly higher complications when compared to normal controls.

Table 1. Surgical outcomes for laparoscopic nephrectomy comparing normal controls, dialysis, and transplant patients.

Variable	Normal (N=330)	Dialysis (N=62)	P value (D vs. N)	Transplant (N=20)	P value (T vs. N)
Median total operative time (IQR), minutes	149 (123, 197)	133 (108, 183)	0.022	134 (113, 192)	0.47
Postop Complication, No. (%)					
None or Grade I-II	315 (95%)	57 (92%)	0.34	17 (85%)	0.075
Grade III-V	15 (5%)	5 (8%)		3 (15%)	
Length of stay, No. (%)					
1-3 days	277 (84%)	48 (77%)	0.20	14 (70%)	0.12
4-29 days	53 (16%)	14 (23%)		6 (30%)	
90-day readmission, No. (%)					
No	311 (94%)	57 (92%)	0.56	16 (80%)	0.034
Yes	19 (6%)	5 (8%)		4 (20%)	

P values result from the Wilcoxon rank sum test for continuous data and the Fisher exact test for categorical data. The number of patients is given where a variable is missing for one or more patients.

Funding: n/a

Poster #58
EFFECT OF 3-DIMENSIONAL, VIRTUAL REALITY MODELS FOR SURGICAL PLANNING OF ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY ON SURGICAL OUTCOMES: A RANDOMIZED CLINICAL TRIAL
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Presented By: Eric Christopher Riedinger, MD

Introduction: Localized renal masses are a growing subset of cancer. Surveillance and ablation have gained popularity; but nephron sparing surgery via partial nephrectomy (RAPN) is the standard for care for amenable masses. Limitations exist when

considering 2-dimensional imaging with computed tomography (CT) or magnetic resonance images (MRI) to understand 3-dimensional (3-D), patient-specific anatomy. We aimed to determine the impact of 3-D virtual reality (VR) models on patient outcomes.
Methods: A single-blinded randomized clinical trial was performed of 92 patients undergoing RAPN. Surgeries were performed at 6 teaching hospitals by 11 surgeons. Patients were prospectively enrolled and randomized to a control group with only CT or MRI versus an intervention group with imaging supplemented by a 3-D VR model. The primary outcome measured was operative time with secondary outcomes including clamp time, estimated blood loss (EBL) and length of hospital stay.
Non-parametric analysis was used to compare operative time, clamp time and EBL. These outcomes were then dichotomized. High vs low dichotomized outcome variables were compared using a chi square test. Multivariate analysis was performed followed by forward selection process with nephrometry score, a surrogate for case complexity. Analysis was also performed controlling for individual surgeons; allowing calculation of estimated odds ratios (OR) for each outcome at any given nephrometry score, as well as a weighted mean OR across all nephrometry scores.
Results: The 92 patients were split into control (n=48) and intervention (n=44) groups. When controlled for case complexity, patients within the intervention group were less likely to have a length of stay longer than 2 days (OR, 2.86; 95% CI, 1.59-5.14) and EBL greater than 200 mL (OR, 1.98; 95% CI, 1.04-3.78). Additionally, the estimated ORs showed improvements in operative time (estimated OR, 2.47), EBL (estimated OR 4.56), clamp time (estimated OR, 11.22) and hospital stay (estimated OR, 5.43). Surgeon experience as a secondary covariate was a predictor of reduced clamp time (OR 5.22; 95% CI, 1.86-14.6).
Conclusion: Use of 3-D VR model technology augments surgeon pre-operative planning for RAPN, allowing for improved understanding of 3-D anatomy. This understanding leads to better patient specific surgical outcomes especially as case complexity increases.
Funding: N/A

Poster #59
IS THERE A LEARNING CURVE PLATEAU FOR ACHIEVING TRIFECTA AND MINIMIZING OPERATIVE TIME (OT) FOR ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)?
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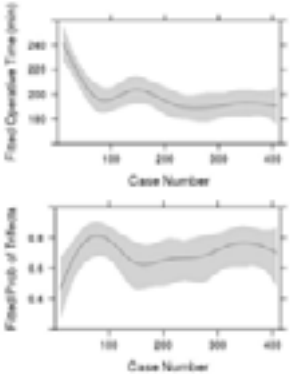
Presented By: Essa Michael Bajalia

Introduction: The complexities of RAPN can lead to a steep learning curve. We assessed the surgical learning curve and plateau point for achieving trifecta and minimizing OT in RAPN.
Methods: We evaluated 418 consecutive RAPN from a fellowship trained robotic surgeon between February 2008 and April 2019. The cases were separated into increments of 50. Cases were excluded from analysis if the patient had a prior RAPN performed at our institution (7 cases), if the patient was treated for calyceal diverticulum (4 cases), or if it was classified as a combo case (1 case). Trifecta was defined as warm ischemia time <25 minutes, negative surgical margins, and no grade 3 or higher postoperative complications. For the primary analysis we explored the correlation between surgical case number and patient outcomes using the Kendall correlation test. Restricted cubic spline regression methods were used as supplemental analyses to evaluate the learning curves. Age, sex, body mass index, tumor size, Mayo Adhesive Probability score, and R.E.N.A.L. score were all adjusted for as potential confounding variables in the spline regression methods. All statistical tests were two-sided. P values < 0.05 were considered statistically significant.
Results: Among the 406 eligible patients included in the study, 252 (62.1%) were male, median age was 63 years (range, 22 to 84), and median body mass index was 29 kg/m2

(IQR 26, 33). 272 patients achieved trifecta and average OT was 200 minutes. We found that RAPN experience (higher case number) was associated with shorter OT (P<0.001). OT (minutes) for the case increments were as follows: 1-50 (222.3±43.6), 51-100 (204.1±47.2), 101-150 (202.1±30.2), 151-200 (201.7±35.3), 201-250 (196.5±46.0), 251-300 (188.2±37.6), 301-350 (194.0±40.7), and 401-418 (186.1±40.4). Trifecta achievement for the increments were as follows: 1-50 (63%), 51-100 (82%), 101-150 (66%), 151-200 (67%), 201-250 (54%), 251-300 (71%), 301-350 (84%), 351-400 (74%), and 401-418 (72%). Although we did not find statistically significant overall increasing or decreasing trends in trifecta with surgeon experience, the restricted cubic spline logistic regression suggests peak performance with slightly under 100 cases (Figure 1B).
Conclusion: Maximizing OT performance and achievement of trifecta in RAPN appears to occur at a learning curve of about 100 cases.



Funding: N/A

Poster #60
THE MAP SCORE CAN HELP PREDICT LONGER OPERATIVE TIME IN OPEN PARTIAL NEPHRECTOMY
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Presented By: Katherine Cockerill, MD

Introduction: The Mayo Adhesive Probability (MAP) score incorporates measures of perinephric fat and fat stranding in the prediction of adherent perinephric fat (APF) at the time of renal surgery. The purpose of our study is to evaluate the association between MAP score and total operative time (OT) in patients undergoing open partial nephrectomy (OPN). We also examined the association of other preoperative variables with OT.
Methods: We performed a 10 year retrospective review of 102 patients who underwent open partial nephrectomies performed for T1 tumor by a single fellowship trained surgeon at our institution. A linear regression analysis was used to examine the association of MAP score with OT in patients undergoing OPN. We also examined the association of sex, age, BMI, patient comorbidities, history of prior abdominal surgery, renal mass size, and R.E.N.A.L. score.
Results: A total of 102 patients underwent open partial nephrectomy at a single institution from 2008-2019 for a renal mass less than 7cm. Mean patient age was 66 years (range 57-71) and mean BMI was 30.5 kg/m2 (IQR 26.1, 33.1). Ten patients (9.8%) had partial nephrectomy performed on a solitary kidney. Median tumor size was 4.0 cm (IQR 3,6). Mean total operative time was 176 minutes (SD 62). A majority of the renal tumors were located posterior (71.7%). The location of the tumor varied between upper pole (32.4%), mid pole (14.7%), lower pole (29.4%), and hilar (27.5%) in location. Ipsilateral renal MAP score was 4-5 in 39.2% of the patients and 0-3 in 60.8%. In single variable analysis, a 1 unit increase in MAP score was associated with an 8 minute

increase in OT (95% CI 2-14 minutes, p=0.01). In additional single variable analysis, only male sex (+34.8 min, p<0.001) and MAP score of 4 vs. 2 (+16 min, p=0.01) were associated with longer operative times in patients undergoing OPN.
Conclusion: Higher MAP score and male sex appear to be associated with longer operative time in patients undergoing OPN for T1 renal tumors.
Funding: N/A

Poster #61
VALIDATION OF AORTA-LESION-ATTENUATION DIFFERENCE ON PREOPERATIVE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY SCAN TO DIFFEERENTIATE BETWEEN MALIGNANT AND BENIGN RENAL TUMORS
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Presented By: Jonathan George Pavlinec, MD

Introduction: Aorta Lesion Attenuation Difference (ALAD) determined on CT scan has been demonstrated by our group previously to discriminate between chromophobe RCC and oncocytoma. The current evaluation seeks to validate these initial findings in a second cohort of nephrectomy patients.
Methods: A retrospective review of preoperative CT scans and surgical pathology was performed on patients undergoing nephrectomy for small, solid renal masses. ALAD was calculated by measuring the difference in Hounsfield units (HU) between the aorta and the lesion of interest on the same image slice on preoperative CT scan. The discriminative ability of ALAD to differentiate malignant pathology from oncocytoma was evaluated by sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and area under curve (AUC) using receiver operating curve (ROC) analysis.
Results: 221 preoperative CT scans and corresponding pathology reports were reviewed and included in the validation cohort. ALAD values were calculated during the excretory and nephrographic phases. Compared to the training cohort, patients in the validation cohort were significantly older (62 versus 59 years old), had larger tumors (3.7 versus 2.7 cm), and higher stage disease (59% versus 79% T1a disease). Nephrographic ALAD differentiated malignant pathology from oncocytoma in the training and validation cohorts with a sensitivity of 84% versus 73%, specificity of 86% and 67%, PPV of 98% versus 91%, and NPV of 33% versus 35%, respectively. The AUC for malignant pathology versus oncocytoma in the validation cohort was 0.72 (95% CI 0.63 0.82). Nephrographic ALAD was able to differentiate chromophobe RCC from oncocytoma in the training and validation cohorts with a sensitivity of 100% versus 67%, specificity of 86% versus 67%, PPV of 75% versus 43%, and NPV of 100% versus 84%. The AUC for chromophobe RCC versus oncocytoma in the validation cohort was 0.72 (95% CI 0.48 0.96).
Conclusion: The ability of ALAD to discriminate between chromophobe RCC and oncocytoma was diminished in the validation cohort compared to the training cohort, but remained significant. The current findings support further investigation in the role of ALAD in the management of patients with indeterminate diagnoses of oncocytic neoplasm on diagnostic needle biopsy.
Funding: N/A

Poster #62
THE AORTIC-LESION-ATTENUATION-DIFFERENCE: EFFECTIVE AT DIFFERENTIATING BETWEEN ONCOCYTIC LESIONS AND CHROMOPHOBE RENAL CELL CARCINOMA ON THREE PHASE CONTRAST-ENHANCED COMPUTED TOMOGRAPHY
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Presented By: Steven Lomax, MD

Introduction: In this study, we aim to evaluate the Aorta-Lesion-Attenuation-Difference (ALAD) on contrast-enhanced computed tomography (CECT) as a value that can differentiate between renal lesions that are indistinguishable as either chromophobe renal cell carcinoma (chRCC) or oncocytoma on pre-operative imaging.
Methods: Pathology from 119 patients with renal masses (chRCC N=29, oncocytoma N=62, clear cell RCC [ccRCC] N=28) was retrospectively evaluated following partial or radical nephrectomy performed by a single surgeon. To calculate the ALAD value, Hounsfield Units (HU) of the aorta and the renal mass were measured on the same plane of CECT by one reviewer. A circular region of interest, identical to the diameter of the aorta, was used to measure the HU of the renal mass. The ALAD value is expressed by the following equation: ALAD = HUaorta – HUmass. To test for clinical relevance, we evaluated ALAD's performance on CECTs in the nephrographic and excretory phases and also on CECTs that lacked distinct phases ("not specific"). Other characteristics such as a central scar, homogeneity, and calcifications were noted.
Results: Among the 119 patients, the median age was 63 (range 24 to 83) and 70 patients (59%) were male. The ALAD median was 27.6 for oncocytic lesions, 68.5 for chRCC, and 55.4 for ccRCC. There is a significant difference between the ALAD values for oncocytoma and chRCC in the nephrographic (area under the ROC curve [AUC] 0.92) and excretory (AUC 0.95) phases. ALAD values measured on CECT in "not specific" phases did not differentiate between oncocytoma and chRCC well (AUC 0.58). ALAD thresholds were generated for each phase. The excretory phase achieved the best results using a threshold of 28 with 100% sensitivity, 82% specificity, 71% positive predictive value, and 100% negative predictive value. Values higher than the calculated threshold represent oncocytomas. It was observed that every lesion with central scarring was pathologically confirmed as an oncocytoma. Lesion homogeneity did not prove to be predictive of pathology.
Conclusion: The ALAD value can successfully differentiate between chRCC and oncocytoma from evaluation in the nephrographic or excretory phases on three-phase CECT. Observation of a central scar in conjunction with an ALAD value suggesting oncocytoma may be significantly predictive of benign pathology.
Funding: N/A

Poster #63
A COMPARISION OF THE AORTIC-LESION-ATTENUATION-DIFFERENCE (ALAD) AND PEAK EARLY-PHASE ENHANCEMENT RATIO (PEER) TO PREOPERATIVELY DIFFERENTIATE BENIGN FROM MALIGNANT RENAL MASSES
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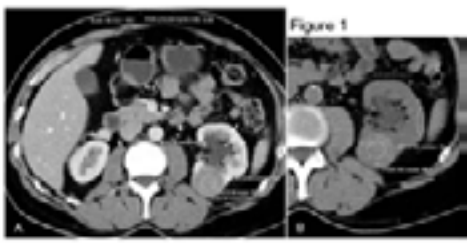
Presented By: Steven Lomax, MD

Introduction: To evaluate the efficacy of the Aorta-Lesion-Attenuation-Difference (ALAD) and Peak Early-phase Enhancement Ratio (PEER) on contrast-enhanced computed tomography (CECT) to differentiate between the appearances of chromophobe renal cell carcinoma (chRCC) and oncocytoma.
Methods: The cohort was comprised of 91 patients who presented with a renal mass and underwent partial or radical nephrectomy performed by a single surgeon. Patients were only included if a preoperative CECT scan was available for evaluation and the resected renal mass was pathologically confirmed for chRCC (N=29) or oncocytoma

(N=62). To calculate the ALAD value, Hounsfield Units (HU) of the aorta and renal mass were measured on the same plane of CECT. ALAD is expressed by the following equation: ALAD = HUaorta – HUmass. To calculate PEER, HUs of the lesion and renal cortex adjacent to the lesion are measured on CECT and non-contrast CT. PEER is expressed as (HUcontrast tumor - HUnon-contrast tumor):(HUcontrast cortex - HUnon-contrast cortex). Values were retrospectively measured from CECT by a single reviewer. Measurements were taken from the nephrographic phase for 45 patients, excretory phase for 16 patients, and CECT scans that lacked distinct phases for 30 patients.
Results: ALAD median was 27.6 for oncocytic lesions and 68.5 for chRCC. A significant difference between ALAD values of oncocytoma and chRCC was observed in the nephrographic (area under the ROC curve [AUC] 0.92) and excretory phases (AUC 0.95) but was less successful using CECT scans lacking distinct phases (AUC 0.58). The PEER median was 0.74 for oncocytic lesions and 0.37 for chRCC. PEER values significantly differed while comparing oncocytomas and chRCC in the nephrographic (AUC 0.93) and excretory phases (AUC 0.96) and was also successful on CECT scans lacking distinct phases (AUC 0.90, P=0.002). When differentiating between chRCC and oncocytoma among all CT phases, PEER (AUC 0.93) significantly outperformed ALAD (AUC 0.80) (P=0.008). Our data also suggests that the ability of ALAD to differentiate between malignant and benign lesions is dependent on CT contrast phase, whereas the ability of PEER to differentiate between chRCC and oncocytoma is consistent across CT contrast phases.
Conclusion: ALAD and PEER values can significantly differentiate between chRCC and oncocytoma on preoperative CECT.



Funding: N/A

Poster #64
ERECTOR SPINAE PLANE BLOCK AS AN ADJUNCT TO MULTIMODAL ANALGESIA IN KIDNEY SURGERY
Eric Wendel, MD, Kathleen Arias, PhD, Matthew Patterson, MD, Stephen Bardot, MD, Michael Maddox, MD
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Presented By: Eric Wendel, MD

Introduction: There is a correlation between elective surgery and new-onset persistent opioid usage. A multi-disciplinary, multimodal approach to pain control has the potential to provide optimal and safe perioperative pain control with minimal narcotics and decrease the risk for future opioid dependence. Here we review our initial experience with a multimodal analgesia protocol including a preoperative erector spinae plane (ESP) block in kidney surgery.
Methods: We implemented an opioid limited protocol during the perioperative period in conjunction with our regional anesthesia department. The protocol prioritizes scheduled non-opioid medications including celecoxib, pregabalin, and acetaminophen with methocarbamol and oxycodone as needed. An ultrasound-guided ESP block was performed using 20mL of Bupivicaine 0.375% mixed with Epi 1:200K, Decaron 1 mg and

Clonidine 50 mcg unilaterally for patients undergoing robotic and open partial and radical nephrectomy, pyeloplasty, and percutaneous nephrolithotomy (PCNL). We measured oral morphine equivalents (OME) at different time intervals of 0-8 hours, 8-16 hours, 16-24 hours, and 24-48 hours. These data were compared to our previous renal surgery population prior to initiation of this protocol.
Results: 83 patients were analyzed. 39 patients underwent the protocol with ESP block and were compared to 44 patients who underwent the standard pathway. Of the 39 patients who underwent ESP block, there were no complications or adverse reactions noted. Opioid usage was less in the ESP arm compared to control for the 0-8 hours (p= < 0.01), 8-16 hours (p= 0.08), 16-24 hours (p=0.07), and 24-48 hours (p=0.01) periods.
Conclusion: ESP blocks are an emerging and effective regional pain management technique. Our initial experience using an ESP block as an adjunct to multimodal analgesia prior to renal surgery showed promise in the ability to decrease postoperative opioid consumption.
Funding: N/A

Poster #65
REAL-TIME TRACKING OF INPATIENT AND DISCHARGE OPIOID PRESCRIBING PATTERNS AMONG UROLOGY PROVIDERS
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Presented By: Nadia Gabriela Romero, MD

Introduction: Recognizing opioid misuse and excessive prescribing is essential among prescribers. In Urology, and in most specialties, providers may be unaware of his or her prescribing patterns postoperatively. There is a necessity to improve postoperative prescribing habits to help combat the opioid epidemic. Real-time monitoring of inpatient and discharge opioid prescribing habits among providers has the potential to identify prescribing patterns and optimize opioid stewardship across Urology subspecialties. In this study, we present our real-time opioid monitoring platform.
Methods: A real-time, web-based, inpatient opioid monitoring platform in a single tertiary center was created to monitor opioid prescribing among Urology providers. We worked extensively with our Center for Clinical and Translational Science group to design this platform. The web-based platform was set up to pull data prospectively, updating every morning at 7 am.
Results: The real-time inpatient opioid monitoring platform provides median morphine equivalents (MME) prescribed and is sortable by Current Procedural Terminology (CPT) codes, date, surgeon, and prescribers as shown in Figure 1. MME provided at discharge is also available. The platform also provides exportable data for statistical analysis.
Conclusion: Opioid prescribing during hospitalization after surgery and at discharge can be monitored in a real-time fashion at a granular level allowing for consistent feedback and review of opioid prescribing patterns. It has the potential to guide Urology providers to eschew excessive inpatient and discharge opioid prescribing habits in favor of improving opioid misuse.

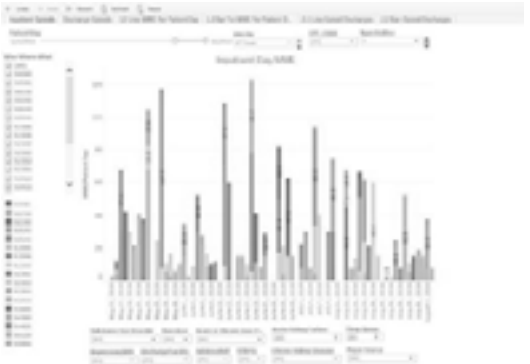

Figure 1. Image of real-time tracking platform
Funding: N/A

Poster #66
WITHDRAWN

Poster #67
IMPLEMENTING A PATHWAY FOR SAFE REDUCTION OF OPIOIDS IN PATIENTS UNDERGOING ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP): A RETROSPECTIVE ANALYSIS OF A US VETERANS AFFAIRS PATIENT COHORT
Laura Horodyski, MD[1], Brittany Ball, PharmD[2], Isildinha Reis, PhD[1], Feng Miao, MS[1], Clarence Emile, BS[1], Mara Carasquillo, PharmD[2], Adriana Rhodes, MS[2], Lunan Ji, MD[1], Joshua Livingstone, MD[2,1], Christina Matadial, MD[2,1], Chad Ritch, MD, MBA[1,2], Leslie Deane, MBBS, MS, FRCSC, FACS[2,1]
[1]University of Miami, [2]Miami Veterans Affairs Medical Center
Presented By: Laura A. Horodyski, MD

Introduction: Opioids are commonly used for control of post-operative pain, though not without risks. Our objective was to reduce opioid use following RALP.
Methods: Before implementation of this single-institution quality improvement project, local anesthesia (LA) was not used. Patients generally received oral opioids for pain control, plus IV opioids as needed. With the new pathway, LA was administered around each incision at the end of the case, both subcutaneously and into the transversus abdominus plane. Acetaminophen was scheduled, as was ketorolac if GFR >60mL/min. Outcomes were analyzed for cases over a seven month period, three months before and after the transition month. Statistical significance was achieved at a p-value < 0.05.
Results: 59 patients undergoing RALP were included in the retrospective analysis, with 31 receiving LA. There was no significant difference between the LA and no LA groups for age, BMI, or surgery duration. Bupivacaine 0.25% was used in all except in two cases when Ropivacaine 0.25% was used at an average dose of 1.6mg/kg. 83.9% of patients who received LA did not use opioids, compared to 17.9% of patients without LA ($p < 0.001$). There was a significant difference in pain scores on POD 0, 1, and 2, with patients who received LA rating their pain 2.1, 2.7, and 2.1 points lower for each day ($p = 0.003$, <0.001, 0.008, respectively). Patients receiving LA were advanced to a regular diet faster (10.2 vs 16.4 hours; $p = 0.001$). The RR was lower with LA (6.5 vs 21.4%), though this did not reach statistical significance ($p = 0.093$).
Conclusion: This demonstrates that post-RALP pain scores and opioid use can be safely and significantly reduced with use of LA and non-opioid medications, which can potentially be applied to other minimally invasive surgery.
Funding: N/A

Poster #68

IDENTIFYING AREAS FOR IMPROVEMENT WITHIN UROLOGIC RESIDENCY PROGRAMS TO COMBAT OPIOID OVERUSE AND OVERPRESCRIBING

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Presented By: Patrick Probst, MD

Introduction: Recently, healthcare professionals, hospital administrators, and government agencies have placed an emphasis on understanding and combating the current opioid epidemic. While the overuse and over-prescription of narcotics represents a concern to all healthcare providers, it is particularly worrisome to those within a surgical field. The responsibility of post-operative pain management falls directly on the surgeon and urologic residency training programs are tasked to educate future urologists in operative technique and in the post-operative care of their patients. We assessed post-operative opioid and multi-modality prescribing patterns amongst urology residents in hopes of identifying areas for improvement.

Methods: A 23-question survey was sent to all urology program directors within the US. Participating programs forwarded the survey to all urology residents for voluntary completion. Residents were queried on opioid and multi-modality prescribing practices for major open cases, minor open cases, major laparoscopic cases, ureteroscopy, and transurethral cases. Additionally, specific questions regarding institutional protocols and education about proper opioid disposal were asked.

Results: A total of 42 residents at urology programs from 17 states responded to the survey. Responses were well-distributed among all post-graduate years (PGY1, 14%; PGY2, 26%; PGY3, 19%; PGY4, 17%; PGY5, 21%; PGY6, 2%). The frequency of prescribing practices of opioid medications and multimodal pain regimens is shown in Figure 1. Following major open cases and laparoscopic cases, no institutional protocol for post-operative pain control was reported by 74% and 81% of residents, respectively. Additionally, 88% of residents stated that no patient education is provided regarding the disposal of unused narcotics.

Conclusion: While a role certainly exists for opioids post-operatively, our assessment identifies several areas urologic residency programs can target for continued improvement in combating the opioid epidemic. First, an effort can be made to minimize variability between prescribers, particularly at similar institutions for similar procedures, to avoid opioid over-prescription and overuse. Second, multi-modality pain control is under-utilized in ureteroscopy, minor open cases and both major open and laparoscopic cases as just 70% prescribe a multi-modal pain regimen more than half the time. Finally, urologic residents should be educated and encouraged to relay proper opioid disposal instructions to all patients receiving narcotics as currently only 12% of residents do so.

Frequency of Opioid Prescription	Major Open Cases	Minor Open Cases	Major Laparoscopic Cases	Ureteroscopy Cases	Transurethral Cases
Never	2 (5%)	5 (12%)	2 (5%)	8 (19%)	11 (26%)
Less than half the time	5 (12%)	11 (26%)	4 (10%)	14 (33%)	13 (31%)
Half the time	2 (5%)	6 (14%)	2 (5%)	4 (10%)	5 (12%)
More than half the time	10 (24%)	9 (21%)	13 (31%)	9 (21%)	8 (19%)
Always	23 (55%)	11 (26%)	21 (50%)	7 (17%)	3 (7%)
Frequency of Multimodal Pain Regimen	**Major Open Cases**	**Minor Open Cases**	**Major Laparoscopic Cases**	**Ureteroscopy Cases**	**Transurethral Cases**
Never	2 (5%)	4 (10%)	3 (7%)	3 (7%)	5 (12%)
Less than half the time	7 (17%)	4 (10%)	7 (17%)	6 (14%)	7 (17%)
Half the time	3 (7%)	4 (10%)	2 (5%)	2 (5%)	3 (12%)
More than half the time	8 (19%)	9 (21%)	8 (19%)	9 (21%)	6 (14%)
Always	22 (52%)	21 (50%)	22 (52%)	22 (52%)	19 (21%)

Funding: N/A

Poster #69
NITROUS OXIDE OFFERS SUPERIOR PATIENT SATISFACTION DURING OFFICE-BASED UROLOGICAL PROCEDURES AND ELIMINATES THE NEED FOR OPIOID AND BENZODIAZEPINE USE

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Presented By: Brent Alexander Sharpe, MD

Introduction: Nitrous oxide (NO) is a well-established anxiolytic and analgesic agent -based procedures but has had limited use in urology. Many urology patients require office-based procedures that have significant anxiety and pain associated with them, due to the anatomical location of the procedure. Historically, urological patients have only been offered opioid or other additive type medications for their procedures. The CDC and FDA currently recommend against combining opioid and benzodiazepines whenever possible. We report patient satisfaction with the Pro-Nox Nitrous Oxide 50/50 mix system during office-based urological procedures.
Methods: A retrospective survey was conducted on consecutive patients who utilized 50/50 NO during eight different urological office-based procedures. Fifty-one patients, 70%, responded. Patients' previous procedural histories were obtained. Overall satisfaction, pre-procedure anxiety, procedure pain, duration of effects of NO, and likelihood to utilize or recommend NO to other patients were assessed. Finally, we asked patients to compare their previous procedures with the one utilizing the nitrous oxide.
Results: We report the most diverse series using the Pro-Nox Nitrous Oxide 50/50 mix system for pain and anxiety control during in-office urological procedures. Ninety-six percent of patients stated that NO "helped" and 82% stated it "absolutely helped" during their procedure. Seventy-eight percent of patients rated their NO based procedure better than previous opioid-based procedures and 71% would choose NO for future procedures. Eighty-eight percent of patients stated they would be "very likely" to recommend NO to other patients. Patients responded that the effects of the NO lasted less than 15 minutes and less than 30 minutes in 75% and 90%, respectively. Eighty-four percent of patients said they returned to normal faster than with other analgesic medications. We had zero complications, terminations or delays with the Pronox NO system.
Conclusion: Nitrous Oxide inhalation offers superior pain and anxiety control for office-based urological procedures with a higher patient satisfaction rate. NO's excellent safety profile and fast recovery time makes it an excellent choice for office-based urological procedures. Furthermore, in the opioid crisis era, NO allows for the elimination of opioid and benzodiazepine medications for most office-based urology procedures.
Funding: n/a

Poster #70
THE BALANCED SURGEON SCORECARD

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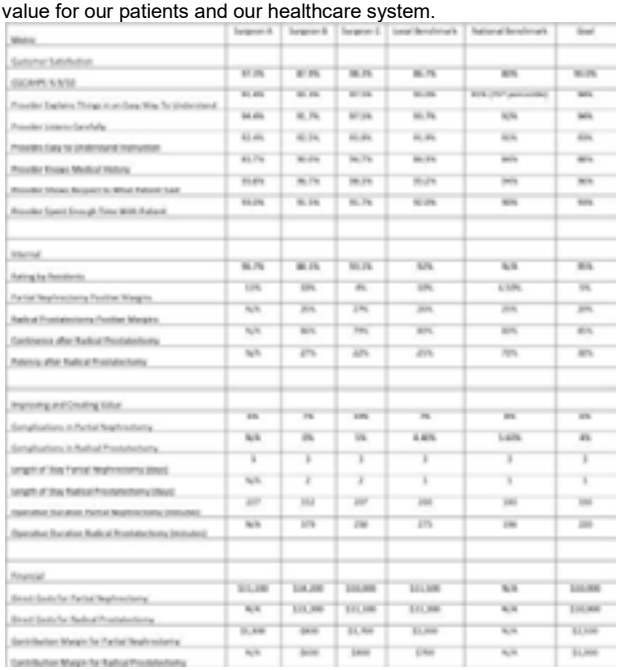
Presented By: Matthew Newsome, MD

Introduction: Balanced scorecards are used in business to allow for comprehensive performance analysis and goal setting. Examined domains include metrics from the customer perspective, the internal perspective, the innovation and learning perspective, and the financial perspective. We sought to apply this concept to develop the Balanced Surgeon Scorecard.
Methods: Balanced Surgeon Scorecard evaluates surgeons using four separate performance categories: Customer (patient) Satisfaction, Internal (promoting excellent surgery and excellent teaching), Improving and Creating Value, and Financial. Customer satisfaction included CGCAHPS data. Internal metrics included resident evaluations of

attending surgeons as well as margin data from partial nephrectomies (PNx) and prostatectomies (RP). Continence and potency data were also included. Improving and creating value metrics included complications for PNx and RP as well as length of stay (LOS) and operative duration (OD). Financial metrics included direct costs and contribution margins. Data was obtained from a NSQIP query for all radical prostatectomies and partial nephrectomies performed at our institution between 2011 and 2017, the finance department, and retrospective chart review. For comparison, our institution's outcomes were analyzed to establish a local benchmark and national benchmarks were obtained from published data.

Results: Three surgeons were included in this initial scorecard. Data from at least 60 patient ratings per provider, 18 resident ratings per provider, 228 PNx and 277 RP were included. Surgeon A performed only PNx with a complication rate of 6%, but a prolonged 3-day LOS. Surgeons B and C had continence rates comparable to national standards (79%), however potency outcomes were poor (27%) and OD prolonged for both RP and PNx. Surgeon B's financial performance lagged, with negative contribution margins for each procedure. For the complete scorecard, see Figure 1.

Conclusion: As the emphasis on delivering quality and cost-effective care grows, surgeons are increasingly required to adapt their practice to provide the best patient outcomes. We have attempted to distill the various factors that together form excellent surgical care into a centrally located, easy to understand deliverable. This will allow the surgeons to identify aspects of their practice where they can improve in order to optimize value for our patients and our healthcare system.



Funding: N/A

Poster #71

PATIENT SAFETY EDUCATION AND PERCEPTIONS OF SAFETY CULTURE IN US UROLOGICAL RESIDENCY TRAINING PROGRAMS

Vi Tran, MD[1], Andrew Harris, MD[1], Ankur Shah, MD, MBA[2], Christopher Tessier, MD[3], Justin Ziemba, MD[4]

[1]University of Kentucky, [2]Hospital of the University of Pennsylvania, [3]Oregon Health Science University, [4]Penn Medicine University of Pennsylvania

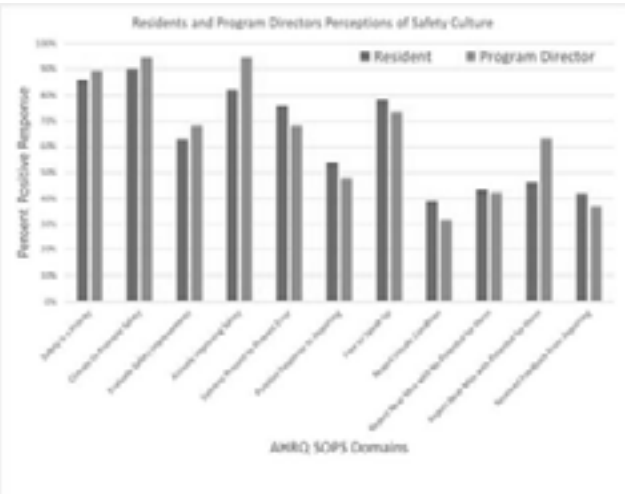
Presented By: Vi Thuy Tran, MD

Introduction: ACGME has mandated that knowledge of patient safety (PS) principles be a core competency of residency training. The perception of PS culture and the infrastructure to support PS education remains unknown. We sought to assess attitudes of PS culture and organizational support for PS education within accredited US urological residency programs.

Methods: Experts in patient safety developed a needs assessment about prior training in the PS principles, perceived value of learning PS, components of an ideal PS curriculum, and resources necessary to facilitate learning in PS. Select items from the validated AHRQ Survey on Patient Safety Culture™ (SOPS) were included to identify how perceptions of PS culture may influence available PS resources. The anonymous survey was distributed electronically (12/2018-2/2019) by the AUA to all urology residents (RES) and program directors (PD).

Results: A total of 25 PD (25/140=18%) and 100 RES (100/1,772=6%) responded. RES received more PS training than PD (79% vs 32%). The majority of RES and PD felt that PS was an important educational competency (RES=89%;PD=68%) and a pathway for academic success (RES 74%;PD 64%). For both, the preferred curricular topic was error causation models (RES=42%;PD=68%) using case-based vignettes (RES=56%;PD=63%). The median number of safety events submitted within the last year was 1 (IQR:0-2). Figure 1 shows the perceptions of safety culture and Figure 2 shows self-assessment results of core PS definitions.

Conclusion: PS education and practice are priorities of learners and educators. This study highlights the opportunities to improve knowledge in PS when developing a national PS curriculum.



Funding: Society of Academic Urologists

Poster #72
FINANCIAL LITERACY AND EDUCATION AMONG UROLOGY RESIDENTS IN SOUTHEASTERN SECTION
Winston Crute, John Fisher, Matt Sorensen, Wesley White, John Lacy
University of Tennessee - Knoxville Department of Urology
Presented By: Winston M. Crute, MD

Introduction: Urology resident education centers around core competencies including professionalism, medical knowledge, practice based learning, and patient care. While financial literacy is an increasingly important and impactful aspect of professionalism, it is unclear if it is an integral part of the formal training curriculum at most programs. To address this gap in knowledge, we designed a survey to assess Southeastern Section Urology residents' and fellows' understanding of personal finance principles as well as to elucidate the trends in financial education provided by their residency programs.
Methods: A 10 question web-based survey was distributed to residents and fellows that were members of the Southeastern Section of the AUA. Respondents were asked about various categories of savings/spending plan, retirement, debt, insurance protection, and post-residency employment planning. A 5-point Likert scale was used to assess respondents' comfort with managing these areas of personal finance as well as the amount of stress caused by debt. Lastly, respondents were queried about whether their residency programs provided education on these financial topics.
Results: We had 34 respondents to the survey. Of responding residents, 58.8% had a savings/ spending plan, 76.5% retirement savings, 58.2% had some sort of debt, 55.9% had life/disability insurance, and 70.6% had a plan to address post residency. Residents had various comfort levels in dealing with this financial topics (Likert scale from 1-5, with 1 being "Very Uncomfortable" to 5 being "Very Comfortable"); including 3.4 for saving/spending plan, 3.3 for retirement savings, 3.6 dealing with debt, 2.9 buying life/disability insurance, 3.5 in planning for post residency employment. Lastly, only a small percentage of residents received formal education on savings/spending (17.6%), retirement (26.5%), debt management (11.76%), insurance protection (20.6%), and post residency planning (29.4%).
Conclusion: Based on our survey, Urology residents have an inconsistent focus on financial literacy and lack confidence to address these needs. Few programs offer formal education on financial literacy as part of their curriculum and resident education may be enhanced by adding this component to their training.
Funding: N/A

Poster #73
OUTOCOME OF PROTECTED RESEARCH TIME IN UROLOGY RESIDENCIES ON ACADEMIC PUBLICATION PRODUCTION
Alexander Fethiere[1], Troy Larson[2], Christopher Bayne[3], Romano DeMarco[2], Vincent Bird[2], M. Louis Moy[2]
[1]University of Florida College of Medicine, [2]University of Florida Department of Urology, [3]University of Florid College of Medicine
Presented By: Troy Larson, MD

Introduction: While the Accreditation Council for Graduate Medical Education requires urology residencies to demonstrate competency in advancing scholarly activity, the way in which each program accomplishes this is left to their own discretion. We aim to investigate the effect of institutional research time design of urology residency programs on the resident academic publication production.
Methods: All ACGME accredited U.S urology residency programs were reviewed via the internet and by phone call to determine if the program had protected research time. Programs were identified as either having dedicated research time or having no dedicated research time. From August 2019 to September 2019 we searched the names of all PGY2 through PGY5 or PGY6 residents at each institution on pubmed.gov to create a list of total urologic publications. Case reports were not included. Also recorded was each publication's corresponding journal, that journal's 2018 Thomson Reuter Impact Factor, and first authorship. We were able to calculate the mean number

of publications per resident for each type of research structure described. This study was IRB exempt.
Results: All the needed information was obtained from a total of 86 ACMGE accredited U.S urology residencies. Out of those 86 urology programs 51 were categorized as having some protected research time, and 35 were categorized as having no protected research time. A PubMed search of the 931 residents from these programs was performed. A total of 1,588 publications were found. For programs with protected research time, the mean number of publications per resident was 1.98 which was significantly greater than the 1.21 publications from residents in programs with no protected research time. The Thomason Impact factor was also greater for those publications by residents in programs with protected time compared to those with no protected research time.
Conclusion: Our results suggest that dedicated research time during urology training may increase the academic productivity and impact of publications that residents participate in during residency.
Funding: N/A

Poster #74
EXAMINING THE CORRELATION BETWEEN ALTMETRIC SCORE AND CITATIONS IN THE UROLOGY LITERATURE
Alexander Nocera, MS[1], Carter Boyd, MS[1], Hunter Boudreau, MS[1], Ornin Hakim, MS[1], Soroush Rais-Bahrami, MD[2,3,4]
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Presented By: Alexander Nocera, MS

Introduction: Article citation count and journal impact factor are the traditional metrics for measuring research influence. The evolution of digital technology and social media has prompted development of the Altmetric scoring system, which analyzes the diffusion of articles among Twitter, Facebook, Reddit, and other media platforms to provide a more immediate and comprehensive view of article dissemination. Our main objective in this study was to determine if article Altmetric scores correlate with journal impact factor and citation counts in the urologic literature. We hypothesized that Altmetric scores will more tightly correlate with citation counts in articles from 2016 than articles from 2013 due to expanding utilization of social media in academics.
Methods: We identified the top 10 most-cited articles for the 15 urology journals with the highest impact factor in 2013 and 2016. Citation count and Altmetric scores were recorded for each of the articles. The journal impact factor and date of Twitter account development were recorded for each of the journals if applicable. The variables were analyzed in Microsoft Excel using Pearson's correlation coefficients and coefficients of determination.
Results: A total of 300 articles were analyzed. In 2013, Altmetric scores and citation number showed significant positive correlation ($r=0.164$, $p=0.045$), although Altmetric scores did not correlate with journal impact factor ($r=0.005$, $p=0.957$). R^2 was minimal for both correlations ($R^2 = 0.027$ for citations, $R^2 < 0.0001$ for impact factor). In 2016, there was significant correlation between Altmetric scores and citation number ($r=0.268$, $p=0.0009$), as well as between Altmetric scores and journal impact factor ($r=0.201$, $p=0.014$). R^2 was 0.072 for citation count and 0.040 for impact factor in 2016. The total citation count decreased from 15,235 in 2013 to 8,622 in 2016 whereas the total Altmetric score increased from 1,135 in 2013 to 2,563 in 2016. Longer-standing journal Twitter accounts were not significantly associated with increasing correlations between Altmetric score and bibliometrics in either 2013 ($r=0.221$, $p=0.54$) or 2016 ($r=0.083$, $p=0.819$).
Conclusion: At this point in time, Altmetric score is only weakly correlated with citation counts in the urology literature. Altmetrics and traditional bibliometrics should be utilized complementarily rather than interchangeably when determining research dissemination and impact. **Funding:** N/A

Poster #75

FINANCIAL BURDEN OF RESIDENCY APPLICATION AND INTERVIEWS: THE STAKEHOLDER MODEL AS A THEORETIC FRAMEWORK

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Presented By: Joshua Kent Calvert, MD, MPH

Introduction: The cost of medical education in the United States is a growing concern, with the average graduating medical school debt estimated at $196,520 in 2018. Additional costs are incurred by senior medical students who apply and interview for the urology match. Due to the increase in competitiveness for urology residency positions, applicants are applying to an increasing number of programs annually. This is associated with a per program application fee from the Electronic Residency Application Service (ERAS). Additionally, applicants have a significant financial burden associated with interviewing, estimated to range between $330 and $500 per interview. Programs shoulder the financial and administrative burden of reviewing hundreds of applications and interviewing applicants.

Methods: To conceptualize the parties' interests in the interview process, we utilized the socioeconomic principle of the stakeholder theory, which suggests that a company's real success lies in satisfying all its stakeholders, not just those who profit. In this case, stakeholders include applicants, residency programs, and the application clearing house.

Results: Utilizing 2018 AUA applicant data, we applied the 2019 ERAS fee-schedule to estimate costs to applicants. The average applicant applies to 71 programs, with a cost of $1585 just to submit and distribute their ERAS application ($601,090 for the applicant pool). According to 2018 AUA match data, average applicants attend 12.9 interviews at a total cost of $4290 to $6500. It costs each applicant a total of $5,875 to $8,085 to apply and interview (~$3.5 million for the applicant pool).

Conclusion: Three stakeholders (Fig. 1) have the shared goal of a successful match, defined as maximum quality applicants filling vacancies at all urology programs. At present, applicants perceive benefit from an overwhelming number of applications (i.e. more applications lead to more interviews), yet only interview at 18% of programs to which they apply. We summarize that the system needs to incentivize applicant selectivity when choosing programs to which they are best suited. This would decrease the load on program directors who often have to review hundreds of applications for only a few available positions. Finally, the role and profitability of the clearinghouse should be redefined.

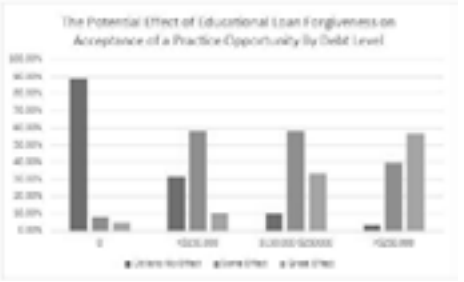
Funding: N/A

Poster #76

IMPACT OF UROLOGY TRAINEE DEBT LEVELS ON FUTURE PRACTICE CHOICES AND EXPECTATIONS

Andrew Harris, MD[1], Leslie Peard, MD[1], Davuluri Meenakshi, MD[2], Raymond Fang[3], William Meeks[3], Amanda North, MD[2]
[1]University of Kentucky, [2]Montefiore Medical Center, [3]American Urologic Association
Presented By: Leslie M. Peard, MD

Introduction: Excessive trainee debt continues to be problem plaguing our specialty. However, less is known about how debt influences practice type and location and we seek to examine this relationship.
Methods: The American Urological Association (AUA) Workforce Workgroup examined the AUA census data from 2016-2018 specifically examining debt level, future practice type, and various debt relief variables.
Results: 705 residents responded to the survey. 22% had no debt, 23% had less than $150,000 debt, 27% had $150,000-%250,000 debt, and 27% had greater than $250,000 debt. Debt level did not appear to affect future planned practice type, p=0.12. Concerning how loan forgiveness influences practice opportunity, 31% chose no effect, 42% some effect, and 27% great effect. Those trainees with greater debt appear to be more likely to accept a practice opportunity if loan forgiveness is offered, Figure 1.Furthermore, those trainees with greater educational debt level were more likely to anticipate increased annual compensation as compared to those with less debt, p=0.001.
Conclusion: Urology trainees accrue a large amount of debt. Debt level may have little effect on practice type. However, those trainees with more debt appear to value practice opportunities offering loan forgiveness and anticipate higher starting salaries than those with less debt.



Funding: N/A

Poster #77

GLOBAL SURVEY ON RISKS AND BENEFITS OF SOCIAL MEDIA FOR PRACTICING UROLOGISTS

Justin Dubin[1], Aubrey Greer[1], Premal Patel[1], Diego Carrion[2], Nahuel Paesano[3], Reda Hocine[4], Malik Haffaf[4], Diego Santillan[5], Zsuzsannaq Zotter[6], Amanda Chung[7], Jeremy Teoh[8], Kyo Chul Koo[9], Ana Maria Autrán Gómez[10], Juan Gomez Rivas[2], Ranjith Ramasamy[1], Stacy Loeb[11]

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Presented By: Justin Dubin, MD

Introduction: Use of social media (SoMe) is increasing in the field of urology. Previous studies have reported the use of SoMe for multiple purposes, including conference participation, educational activities, clinical case discussions, and research dissemination. However, SoMe use may also pose potential harms. Our goal was to perform a global survey of the perceived benefits and harms associated with SoMe use in practicing urologists

Methods: We distributed a 29-item survey about SoMe to current practicing urologists via multiple international, national, and regional Urological associations by email. The survey included study-specific constructs surrounding repercussions of SoMe and impact on the doctor-physician relationship, as well as the prevalence of Social Media Disorder (SMD) based on the 9-item Social Media Disorder Scale. Stata IC was used for statistical analysis.

Results: A total of 412 urologists from 20 countries in 4 continents responded to the survey. Overall, 84.6% use some form of SoMe, and 47.1% felt it was important to have a professional SoMe account. 36.8% felt that they had seen a benefit in their practice with SoMe. Conversely, 83.3% feared repercussions from SoMe use and 19.3% had actually experienced negative repercussions. Notably, most practicing urologists (61.0 %) were not aware of professional guidelines on appropriate use of SoMe. A total of 46.1% had been contacted by a patient through SoMe, and 17.4% had been harassed by other physicians. Urologists felt that the quality of medical information on SoMe was mostly acceptable to poor, with only 10.9% rating it good or very good. There were mixed responses on the impact of SoMe on the doctor-patient relationship. Very few practicing urologists met criteria for social media addiction (6%).

Conclusion: Most practicing urologists participate in some form of SoMe, and more than a third felt that it had benefitted their practice. However, there were widespread concerns regarding fear of repercussions and poor information quality, and lack of awareness about social media guidelines.

Funding: N/A

Poster #78
UROLOGY RESIDENCY APPLICANT PERSONAL STATEMENTS: AN INSIGHT INTO MALE AND FEMALE MEDICAL STUDENT PERCEPTIONS OF GENDER AND THEIR ROLE IN UROLOGY
Alysen Demzik, MD, Pauline Filippou, MD, Emily Mercer, BS, Eric Wallen, MD, Hung-Jui Tan, Angela Smith, MD
University of North Carolina Urology, Chapel Hill, North Carolina, USA
Presented By: Alysen Leigh Demzik

Introduction: The personal statement portion of the urology residency application is a unique opportunity for medical students to express individual rationale for a career in urology in an otherwise standardized application. Analysis of linguistic characteristics of personal statements may provide insight into the different perceptions of urology that male and female medical students hold as they enter the field.
Methods: Using Linguistic Inquiry and Word Count (LIWC), a validated text analysis program, personal statements submitted by urology residency program applicants during the 2016-2017 application cycle to University of North Carolina urology program were evaluated. Independent sample T-tests were used to compare linguistic characteristics by gender of the residency applicant.
Results: A total of 342 personal statements were analyzed, 242 written by men and 100 written by women. While overall scores of analytical thinking, authenticity and emotional tone were higher than average amongst all applicants, clout, a linguistic measurement of confidence, was below average across both genders. Male applicants used words such as we/us/our significantly more often than female applicants (p=0.04). Women had notably more female references within their personal statements (P<0.01), however there was no difference in references to men between male and female writers.
Conclusion: While male and female residency applicants convey a similarly low level of confidence as they present themselves as future urologists, there appears to be significant differences in perceived sense of belonging between male and female residency applicants to urology. Female applicants reference women more often, possibly highlighting the importance of gender concordant mentorship for women within the field.

Personal Statement Characteristics	Male applicant (mean)	Female applicant (mean)	P value
Analytic (/100)	88	87	0.13
Clout (/100)	37	37	0.49
Authenticity (/100)	63	64	0.66
Emotional tone (/100)	85	86	0.55
WE/US/Our words	0.3	0.7	0.04
Female pronouns	0.2	0.5	<0.01
Male pronouns	0.8	0.7	0.61

Funding: N/A

Poster #79
SINGLE SURGEON EXPERIENCE WITH PROCEPT AQUABEAM AQUABLATION OF PROSTATE: FIRST 40 CASES
Ali Kasraeian, MD, FACS
Kasraeian Urology, Jacksonville, FL, USA
Presented By: Ali Kasraeian, MD, FACS

Introduction: Aquablation is a novel technology for management of BPH, regardless of prostate size or shape. The Aquabeam system is an innovative combination of robotic technology, multi-dimensional real-time imaging, and heat-free waterjet to precisely and accurately remove obstructive prostate tissue in men with BPH. We report our initial experience with our first 40 cases.
Methods: Between July 2018 and May 2019, data was prospectively collected on 40 men who underwent Aquablation of the prostate. Evaluation included cystoscopy, urodynamics (UDS), and transrectal ultrasound (TRUS) to measure of prostate volume. Outcomes were prospectively collected and reported.

Results: Pre-operative demographics include mean prostate volume of 92 cc (27 to 201). Of our 40 patients, 29 had prostates larger than 80cc, 15 greater than 100cc and three greater than 150 cc. Obstructing median lobe was noted in 33 (83%) men. UDS demonstrated severe bladder outlet obstruction (BOO) in 37 of the 40 men (93%), and 19 of the 40 (48%) suffered from urinary retention with 13 (33%) requiring catheterization. Mean operative time was 57 minutes (25-108). 25 of the 40 men were discharged on post-operative day (POD) 1. No patients received transfusions. Mean pre-operative hemoglobin (Hgb) was 14.3 (8.6 to 16.7) and mean immediate post-operative and day of discharge Hgb levels were 13.2 (10 to 16) and 11.8 (7.2 to 15), respectively. Of note, 33 of 40 men reported erectile dysfunction at baseline. Post-operatively, a 16 point (5-27) mean decrease in AUA symptom score (AUASS) was noted from 22 (10 to 35), pre-operatively, to 6.6 (1-15), post-operatively. Post-operative uroflow studies after 4-6 weeks demonstrated mean maximum flow rate (Qmax) of 21 ml/s (4.3 to 44), an increase of 13 points from 7.6 ml/s (2.1 to 15), pre-operatively. Erectile function was maintained post-operatively with mean SHIM score of 12.2 (range 1 to 25) versus 11.7 (1 to 25), pre-operatively. All patient's completed successful voiding trials post-operatively, and of patients with baseline urinary retention, none currently require any form of catheterization

Conclusion: The PROCEPT AQUABEAM Aquablation is an innovative technology that offers predictable and reproducible outcomes, independent of prostate size. Aquablation has a short learning curve ad is easily reproduced regardless of prostate size or shape.

Funding: N/A

Poster #80

WATER VS WATER II: AQUABLATION FOR BENIGN PROSTATIC HYPERPLASIA

Ali Kasraeian, MD FACS[1], Naeem Bhojani, MD[2], David-Dan Nguyen[3]
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Presented By: Ali Kasraeian, MD, FACS

Introduction: Surgical options are limited when treating large (>80cc) prostates for lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH); there is a need for novel surgical approaches with shorter learning curves and effective treatment. Aquablation (AquaBeam System, PROCEPT BioRobotics, Inc., USA), an ultrasound-guided, robotically executed waterjet ablative procedure, could be this novel tool. This analysis compares the outcomes of Aquablation in 30cc to 80cc prostates with the outcomes in 80cc to 150cc prostates.

Methods: WATER is a prospective, double-blind, multicenter, international clinical trial comparing the safety and efficacy of Aquablation and TURP in the treatment of LUTS/BPH in men 45 to 80 years old with a prostate between 30cc and 80cc. WATER II is a prospective, multicenter, single-arm international clinical trial of Aquablation in men with a prostate between 80cc and 150cc. We herein report baseline parameters and 6-month outcomes in 116 WATER (W-I) and 101 WATER II (W-II) study subjects undergoing Aquablation. Students' t-test or Wilcoxon tests were used for continuous variables and Fisher's test for binary variables.

Results: Mean operative time was 33±17 minutes in W-I and 37±13 minutes in W-II. The average length of stay post-procedure was 1.4±0.7 days (W-I) vs. 1.6±1.1 days (W-II). Mean changes in IPSS and IPSS quality of life were substantial, occurring soon after treatment and averaging (at 6 months) 16.9 and 3.5 points, respectively, in W-I and 17.4 and 3.2 points in W-II (p=.6046 and .2607 respectively). By 3 months, Clavien-Dindo grade 2 or higher events occurred in 19.8% of W-I subjects and 34.7% of W-II subjects (p=.4680). One W-I subject (0.9%) and 6 W-II subjects (5.9%) required postoperative blood transfusion (p=.0517).

Conclusion: Aquablation clinically normalizes outcomes between patients with a 30cc to 80cc prostate and patients with an 80cc to 150cc prostate treated for LUTS/BPH with an expected increase in the risk of complication. It is effective in patients with large prostate glands (>80cc) with acceptable complications.

Funding: N/A

Poster #81
ANNEXIN A1 INHIBITS NLRP3 MEDIATED INFLAMMATION DURING BLADDER OUTLET OBSTRUCTION
Brent Nose, Shelby Harper, Francis M Hughes, Todd J Purves
Duke University Hospital
Presented By: Brent Denn Nose, MD

Introduction: Despite improvements in obstructive voiding symptoms, up to one-third of patients will have persistent irritative symptoms following deobstruction surgery. Our lab previously demonstrated that this bladder dysfunction is secondary to NLRP3-mediated inflammation. Recently, Annexin A1 has been shown to play a critical role in the resolution of inflammation, but its activity in the bladder or interaction with NLRP3 remains unknown. We explored Annexin A1's ability to inhibit ATP-induced NLRP3 activity and its potential to expedite the resolution of inflammation following bladder outlet deobstruction.
Methods: In vitro, urothelial cells from Sprague Dawley rats were cultured for 24 hours, washed and treated with increasing concentrations of AC2-26, an Annexin A1 analog. Following one hour of incubation, cells were treated with 0.625 mM ATP for another hour. Caspase-1 activity was then measured by fluorogenic substrate cleavage (YVAD-AFC). In vivo, bladder outlet obstruction was performed by urethral ligation around a 1 mm (o.d.) catheter which was subsequently removed. The deobstruction cohort had their urethral ligature removed after 12 days and were then provided either 1 mg/g of AC2-26 in PBS or vehicle once daily for two or three days. One hour prior to sacrifice, 25 mg/g of Evans blue dye in normal saline was injected IV. Bladders were then removed, weighed and Evans blue concentration was measured spectrophotometrically.
Results: In vitro studies demonstrated a dose-dependent decline in caspase-1 activity by AC2-26 (% maximal ATP response) with an IC50 of 0.26 mM.
In vivo, bladder weights decreased from a mean of 289.1mg after 12 days of obstruction to 211.3 mg three days after deobstruction. This was augmented with AC2-26 which resulted in a mean weight of 166.2 mg. The concentration of Evans blue similarly decreased with deobstruction from 28.1 ng EB/mg to 15.9 ng EB/mg after three days of deobstruction; and further to 11.7 ng EB/mg with AC2-26.
Conclusion: We demonstrated that Annexin A1 has a dose dependent inhibitory effect on NLRP3-dependent caspase-1 activity. The resolution of inflammation following deobstruction is augmented when treated with AC2-26. Overall these results demonstrate that Annexin A1 can enhance the resolution of inflammation following bladder deobstruction and that it likely does this through inhibition of the NLRP3 inflammasome.
Funding: Research support was provided by the National Institute of Diabetes and Digestive and Kidney Diseases (DK103534 to J.T.P.) and intramural funds from Duke University.

Poster #82
BARRINGTONS'S REFLEXES REVISITED: PROXIMAL URETHRAL ELECTROSTIMULATION CAUSES REMARKABLE EXCITATORY BLADDER RESPONSE IN SPINAL CORD INTACT RATS
Bradley Potts, M.D.[1], Matthew Fraser, Ph.D.[1,2]
[1]Duke Univesity Medical Center, Dept. of General Surgey, Division of Urology, [2]Durham VA Medical Center
Presented By: Bradley Potts, MD

Introduction: Detrusor underactivity is an important contributor to voiding dysfunction with numerous neurogenic and myogenic cause; unfortunately, there are few reliable treatment options. In the early 1900's, Barrington discovered excitatory urethra-to-bladder reflexes in cats via pudendal, hypogastric, or pelvic nerve afferents. We electrically field-stimulated nerves of the proximal urethras of spinal-intact (SI) rats

before and, in some, subsequent to acute suprasacral spinal cord injury (SCI) to determine if we could elicit these reflexes in normal and acute spinal shock conditions.
Methods: Eight urethane-anesthetized female Sprague-Dawley rats (230-290g) received ureteral diversion and transvesical catheters via laparotomy. The ventral pubis was removed to expose the urethra. Five rats were prepped with posterior vertebral dissection to facilitate acute SCI. Following continuous cystometry, static bladder volumes were set below bladder capacity (BC) and proximal urethral electrical

across the rostral and caudal proximal urethra and immediate surrounding tissue. PUES was applied for 30 sec (60 sec recovery) with 0.1msec pulse, 5-250Hz and 10-50V. Following SI stimulation, SCI was performed at T9-10 (n=5). The bladder was filled to pre-SCI BC and PUES was performed from 5-250Hz and 50-75V. Extracted data included presence/absence of bladder contraction and evidence of lower extremity motor activity. Data were assigned a score of 1 if there was a bladder without motor response, 0 for no response or both bladder and motor response, and -1 for only motor response. Data were analyzed graphically and frequencies with non-negative results were further analyzed with one-way ANOVA.
Results: Overall positive responses were observed in SI rats for frequencies of 20Hz and 50Hz. Only 20Hz demonstrated significant differences by intensity; 30 and 40V elicited significantly higher average scores than other voltages (P=0.0213-0.0365 for 10, 20, and 50V). While 50V always elicited both a bladder and motor response in SI, only motor responses were observed after SCI.
Conclusion: In the SI rat, PUES at 20Hz and 30-40V elicited reliable bladder contractions in the absence of observable motor responses. Failure to elicit bladder responses following SCI suggests supralumbar involvement in excitatory urethra-to-bladder reflex arcs.
Funding: Discretionary Research Funds

Poster #83
PROXIMAL URETHRAL ELECTRICAL STIMULATION PROFOUNDLY IMPROVES UNDERACTIVE BLADDER FUNCTION IN RATS AFTER UNILATERAL PELVIC NERVE TRANSECTION
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Presented By: Bradley Potts, MD

Introduction: We previously demonstrated reliable bladder contractions in neurologically-intact rats in response to proximal urethra electrical stimulation (PUES). We sought to investigate whether a novel stimulating mesh, placed in an anatomically-similar position to that of a urethral sling, could improve bladder function in the setting of underactive bladder (UAB) caused by unilateral pelvic nerve transection (PNx).
Methods: Twenty-five urethane-anesthetized female Sprague-Dawley rats received cystometry preparation and ventral dissection to expose the proximal urethra. A 3mm mesh with integrated bipolar electrodes was placed between the urethra and vagina. Following 3hrs of continuous cystometry, 3 single-fill cystometrograms were performed prior to right PNx (8/25 rats served as sham PNx controls). After 1hr of continuous cystometry, 3 single-fill cystometrograms were performed again. In PNx rats, the bladder was filled to the largest pre-PNx total bladder capacity (TBC) or 75% of lowest post-PNx TBC (lower of two volumes was tested first) and PUES was performed at 20, 30, 40, and 50Hz (varied randomly) at 50V for 60sec stimulation/120sec recovery periods. PUES was then repeated at the higher of the two test volumes. When voiding occurred, the bladders were emptied to calculate voiding efficiency (VE) and refilled to the test volumes. Measurements included TBC and VE before/after PNx, and the presence/absence of bladder contraction or voiding during PUES. Data were analyzed using non-parametric repeated measures 2-Way ANOVA for sham PNx vs PNx comparisons, and contingency analysis (CA) for comparisons of test fill volumes, and sequence/frequency of PUES.

Results: After unilateral PNx, mean TBC increased by 80% and mean VE decreased by 71% (P<0.0001 for both); no changes were observed in sham PNx rats. PUES elicited voids (in absence of somatomotor response) at both test volumes; CA revealed significant stimulus frequency effect (P=0.0009) with lower frequencies more effectively evoking voiding contractions (percentage voiding 52,23,10,10% at 20,30,40,50Hz, respectively, P=0.0013). Mean VE of voiding contractions was 115% of pre-PNx.
Conclusion: Our validated unilateral PNx model induces conditions of dramatically increased TBC and decreased VE which effectively proxy for UAB. Following PNx, PUES with stimulating mesh at 20-30Hz elicited voiding contractions at decreased fill volumes with a reversal of VE changes, thereby normalizing functional voiding in this UAB model.
Funding: Discretionary research funds

Poster #84
INITIAL US EXPERIENCE WITH HOLEP USING THE OLYMPUS EMPOWER H100 WATT LASER
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Presented By: Chandler David Dora, MD

Introduction: Enucleation of the prostate can be performed using multiple surgical approaches including open, robotic, and transurethral. Multiple energy sources have been utilized for transurethral enucleation of the prostate including various laser wavelengths (holmium(Ho):yttrium-aluminum-garnet(YAG), potassium-titanyl-phosphate:YAG, Thulium:YAG). Olympus recently introduced the Empower H100 Ho:YAG laser. We present the initial experience in the United States with the Olympus Empower H100 Ho:YAG laser and compare it to a cohort of patients treated with another commercially available high powered Ho:YAG laser.
Methods: Between August 3, 2018 and August 26, 2019 191 patients underwent holmium laser enucleation of the prostate (HoLEP) by a single surgeon with experience of approximately 500 HoLEPs. 49 HoLEPs were performed with the Olympus Empower H100 laser and 137 with the Lumenis P120 non-Moses protocol. 5 HoLEPs were performed using the P120 Moses and were excluded from analysis. Age, specimen weight, operative time, and energy utilization were recorded prospectively and examined retrospectively. Laser settings were 1.8 joules and 45 hertz (81 watts) for the Olympus Empower H100 and 2 joules and 45 hertz (90 watts) for the Lumenis P120 laser. The two groups were compared using two-sample t-test.
Results: The two groups (Olympus laser, Lumenis P120 laser) were similar in age (mean 72.8,72.3 years p=0.73), specimen weight (mean 74.3,69.2 grams p=0.48), and operative time (mean 88, 82 minutes p=0.23). The energy required per gram of tissue enucleated was significantly less using the Olympus H100 versus the Lumenis P120 laser (1501 j/g vs 1839 j/g p=0.034).
Conclusion: The Olympus Empower H100 is effective for HoLEP. Enucleation can be performed at lower power settings without decreasing efficiency or significantly increasing operative times. Lower energy usage particularly around the apex and sphincter is thought to result in decreased risk of incontinence following HoLEP. Optimal power settings for HoLEP have not been previously defined scientifically. The ideal energy source for enucleation delivers the least amount of energy necessary precisely to the target (fibrous connections between the adenoma and surgical capsule) with the least thermal scatter. This does not establish superiority of one laser over the other as doing so would require comparison of these same parameters using identical power settings.
Funding: N/A

Poster #85
DOES PREOPERATIVE CATHETER DEPENDENCE AND PROSTATE SIZE PREDISPOSE TO CATHETER REINSERTION FOLLOWING HOLEP?
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Presented By: Kevin Parikh, MD

Introduction: To determine if preoperative catheter dependence or specimen weight is associated with failed trial without catheter (TWOC) following holmium laser enucleation of the prostate (HoLEP). Few studies have assessed short term reinsertion of catheters after bladder outlet procedures. Although the surgeon may view catheter reinsertion as a bump in the road if the patient ultimately achieves excellent voiding, patients can view catheter reinsertion as psychologically defeating and indicative of a failed intervention.
Methods: The study population consisted of 143 consecutive men who underwent HoLEP by a single surgeon over 10 months. Ten were excluded from analysis because they did not have a TWOC on the morning following surgery. Patients were queried regarding catheter reinsertion events in the first week after discharge wether they occured at our institution or outside emergency rooms. Potential risk factors for catheter dependence were evaluated using logistic regression models. Odds ratios were established using logistic regression models. 95% confidence intervals were calculated for those odds ratio. A p-value of <0.05 was considered significant. All analysis was completed using R version 3.4.2.
Results: Of 133 men included in analysis, 23(17.3%) required catheter reinsertion. Of the 23 requiring catheter reinsertion, 6 were catheter dependent preoperatively and 17 were not. Men who were catheter dependent had a lower overall rate of failed TWOC compared to those who were not catheter dependent (15.0% vs. 18.3%, P=0.647). Mean specimen weight for men requiring catheter reinsertion was significantly lower than men who passed their TWOC (49.9gm vs. 73.1 gm, P=0.013).
Conclusion: Very few studies exist on factors associated with short-term catheter reinsertion following HoLEP or other prostatic hyperplasia procedures. We hypothesized that preoperative catheter dependence and small specimen weight would predispose to catheter reinsertion. Specimen weight was inversely related to risk of catheter reinsertion after HoLEP and preoperative catheter dependence was not associated with catheter reinsertion. In men with small prostates, consideration should be given to delayed TWOC to allow resolution of capsular edema and accumulation of clot in the prostatic fossa. Transition zone volume below which delayed TWOC should be considered is the subject of future studies.
Funding: N/A

Poster #86
INTERMEDIATE TERM FOLLOW UP OF PROSTATIC URETHRAL LIFT FOR BENIGN PROSTATIC HYPERPLASIA: A META-ANALYSIS AND SYSTEMATIC REVIEW
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Presented By: Karthik Of Tanneru

Introduction: Prostatic urethral lift (PUL), is a relatively new minimally invasive procedure gaining popularity for the treatment of benign prostatic hyperplasia (BPH). While prior systemic review demonstrated favorable clinical outcomes for one year, it is unclear whether the results were sustainable over a longer period of time. In this systematic review and meta-analysis, we analyzed all published articles with a follow-up of at least 24 months.
Methods: We performed a critical review according to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines. From a total 768 published articles that matched our search criteria, two randomized and three non-randomized studies with a minimum follow-up of 24 months were selected for comparison and data analyzed in terms of baseline characteristics, functional, and sexual health outcomes.

Results: The randomized and non-randomized studies were grouped as group A and B, respectively. From 386 patients who undergone PUL, 322 patients (83.4%) had 24 months follow-up. For a 24-months period, the mean reduction in International Prostate Symptom Score (IPSS) from baseline was 9.1 in group A and 10.4 in group B. The mean improvement in peak flow rate (Qmax) was 3.7 mL/s in group A and 3 mL/s in group B and quality of life (QOL) showed improvement by 2.2 in both groups. No compromise in sexual function was observed after treatment with PUL.
Conclusion: PUL is a well-tolerated, minimally invasive therapy for BPH that provides favorable and durable symptomatic, sexual health, and functional outcomes up to 24 months. Longer follow-up and randomized studies comparing to current standards will be needed to further confirm the long-term durability and superiority of PUL.
Funding: N/A

Poster #87
THE PROSTATIC URETHRAL LIFT FOR SUBJECTS WITH PRIOR PROSTATE CANCER THERAPY
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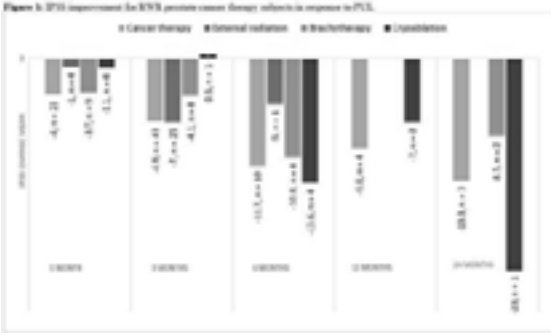
Presented By: Gregg R. Eure, MD

Introduction: Prostate cancer (CaP) frequently coexists with benign prostatic hyperplasia (BPH) and may require treatment with radiation or cryoablation. These modalities are often accompanied by adverse events lasting months to years following treatment. The Prostatic Urethral Lift (PUL) is a minimally invasive surgical therapy that has been shown to provide rapid, significant, and durable symptom improvement in patients with BPH. Utilizing outcomes from the real-world retrospective (RWR) study of PUL, a sub analysis was performed to examine effectiveness and safety in subjects with prior CaP treatment.
Methods: Retrospective analysis of 1413 patients who received PUL was performed across 14 sites in the United States and Australia. Seventy-three CaP subjects were identified who received the following treatment: external radiation (n=28), brachytherapy (n=17), cryoablation (n=10) and androgen deprivation therapy +/- chemotherapy (n=18). IPSS was evaluated at 1, 3, 6, 12, & 24 months post-procedure using paired t-tests and 95% confidence. Baseline demographics and adverse event rates were compared to non-cancer subjects.
Results: Baseline IPSS (18.6), QoL (4.1) and Qmax (11.4) for CaP subjects did not differ from non-cancer treatment subjects, and mean duration from cancer diagnosis to PUL was 4.9 years [range 0.3-248mo]. Following PUL, mean IPSS for CaP subjects improved at all timepoints [range 4-13.3 (Figure 1)] and sub-analysis revealed symptom relief across therapy cohorts. CaP treatment subjects did not experience any serious adverse events including hematuria and dysuria. No significant increases in incontinence (p=0.09), urinary tract infection (p=0.8), urosepsis (p=1.0), or urethral stricture (p=0.05) were observed compared to subjects without cancer treatment. Three patients underwent an additional surgical intervention an average of 277 days post-PUL.
Conclusion: The RWR study of PUL is the largest investigation of a minimally invasive BPH procedure in a real-world setting and allowed for examination of CaP subjects not previously included in randomized controlled trials. This preliminary analysis suggests PUL can provide safe symptom relief to patients with prior CaP treatment suffering from bothersome lower urinary tract symptoms, without increasing rates of specific adverse events that are of high concern in this population.



Funding: NeoTract/Teleflex Inc.

Poster #88

EFFECTIVENESS OF THE PROSTATIC URETHRAL LIFT FOR A BROAD ARRAY OF SUBJECTS

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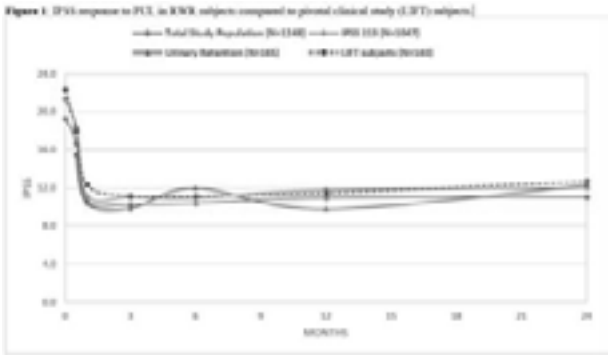
Presented By: Gregg R. Eure, MD

Introduction: Minimally invasive surgical therapy (MIST) for BPH is a dynamic field. Randomized clinical trials have been the standard for assessing safety and efficacy of new MISTs, however, establishing the effectiveness of any new technology requires analysis in an unconstrained clinical setting. The Prostatic Urethral Lift (PUL) is a MIST, which has been shown to provide rapid, significant, and durable symptom improvement in patients with BPH. Here we elucidate how PUL performs in a real-world setting by examining outcomes in a large, unconstrained dataset.
Methods: A retrospective analysis was conducted for 1413 patients (across 14 USA and Australia sites) who underwent PUL after market clearance through September 2018. Baseline demographics and symptom improvement of real-world retrospective (RWR) subjects were compared to subjects in the randomized L.I.F.T. study. IPSS, QoL and Qmax were evaluated at 1, 3, 6, 12 & 24-months post-procedure for all non-urinary retention subjects (Group A) and retention subjects (Group B). Within Group A, outcomes were further analyzed for the following characteristics: IPSS baseline 13, age, prostate size, site of service, prostate cancer treatment, and diabetic status.
Results: RWR subjects were older, had lower baseline IPSS and QoL and higher Qmax compared to those from the L.I.F.T. study. Following PUL, mean IPSS for Group A improved significantly from baseline by at least 8.1 points throughout follow up and 84% of subjects required no catheter. No significant differences were observed between Group A and B absolute symptom scores across all timepoints, and 83% of Group B subjects were catheter-free by 1-month post-procedure. For Group A cohorts, subjects with an IPSS baseline 13 behaved similarly to L.I.F.T (Figure 1). Age (<50 vs 50yr), prostate volume, site of service, and diabetic status did not affect PUL effectiveness. Most adverse events were mild-moderate, resolving in 4 weeks. When completed in a clinic office, PUL resulted in significantly fewer side effects and catheter placement compared to other sites of service.
Conclusion: This is the largest study of a MIST procedure for BPH in a real-world setting and confirms clinical study results. Patients not previously examined (e.g. in retention, with large prostates, diabetics) can be treated safely and effectively with PUL.



Funding: NeoTract/Teleflex Inc.

Poster #89

IMPLEMENTATION AND SHORT-TERM OUTCOMES OF PROSTATIC URETHRAL LIFT IN A VETERANS AFFAIRS POPULATION

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Presented By: Heather L. Huelster, MD

Introduction: To evaluate the clinical impact of implementation of prostatic urethral lift (PUL) in men with bothersome lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) within a Veterans Affairs (VA) hospital system focusing on patient selection, operative times, complications, and short-term outcomes.

Methods: Using an IRB-approved, prospectively managed database, a retrospective chart review of 79 men who underwent PUL for management of BPH with LUTS at a single VA hospital since February 2018 was performed. Patient characteristics, operative times, and postoperative complications were described. Short-term outcomes, including pre- and post-operative International Prostate Symptom Scores (IPSS), quality of life (QOL) scores, and rate of discontinuation of alpha-blockers and 5-alpha-reductase inhibitors (5-ARIs) at 2 weeks, 4 weeks, 3 months, and 12 months following PUL were assessed.

Results: Seventy-nine men aged 45-87 years (mean 67.5 years) with an average baseline IPSS of 20.81 and QOL score of 4.38, confirmed lateral lobe prostatic hyperplasia on cystoscopy, and estimated prostate size <80cc underwent PUL. Significant improvement in both IPSS and QOL scores were observed at 2 weeks, 4 weeks, 3 months, and 12 months following PUL. 52 of 73 men (71.2%) had discontinued both alpha blockers and 5-ARIs and an additional 6 of 73 (8.2%) men had discontinued one of the two BPH medications at the longest point of follow up. Six procedures (7.6%) were complicated by new-onset urinary retention requiring catheterization, four (5.1%) by hematuria requiring intervention, two (2.5%) by transient dysuria prompting additional clinical evaluation, and one (1.3%) by new onset urge incontinence. There were no reports of de novo erectile or ejaculatory dysfunction.

Conclusion: Prostatic urethral lift is a minimally invasive surgical technique that can be successfully implemented in the VA population to achieve rapid improvement in urinary symptoms, improve quality of life, and decrease medication utilization in appropriately-selected men with BPH and bothersome LUTS.

Table 1. Short-term outcomes of prostatic urethral lift at 2 weeks, 4 weeks, 3 months, and 12 months (Preoperative mean IPSS 20.81, preoperative mean QOL score 4.38)

		2 Weeks	4 Weeks	3 Months	12 months
IPSS	N	23	65	64	28
	Postoperative Mean	10.17	9.52	11.52	13.18
	Mean Change in IPSS	-12.61	-11.69	-9.50	-9.00
	Mean % Reduction in IPSS	54.24%	49.63%	41.29%	36.99%
	p value	<0.001	<0.001	<0.001	<0.001
QOL	N	23	65	64	28
	Postoperative Mean	1.65	1.72	2.15	2.43
	Mean Change in QOL Score	-3.78	-3.79	-3.36	-3.33
	Mean % Reduction in QOL Score	58.62%	54.92%	49.31%	46.96%
	p value	<0.001	<0.001	<0.001	<0.001

Funding: N/A

Poster #90

POSTOPERATIVE OUTCOMES AFTER ENDOSCOPIC UROLIFT REMOVAL

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Presented By: Samantha C. Nealon, MD

Introduction: BPH can cause lower urinary tract symptoms (LUTS), affecting quality of life and sexual function. Transurethral resection of the prostate (TURP) is considered the gold standard for management of BPH. Common complications of TURP include urinary retention, bladder neck contracture, urethral stricture, stress incontinence, and ejaculatory dysfunction. UroLift is a minimally invasive treatment which lifts and holds enlarged prostate tissue out of the urethra and has been demonstrated to have significantly reduced sexual side effects. While there are notable cure rates at 5 years, surgical retreatment for failure to cure with UroLift is 13.6%, and little is known about patient outcomes following removal of UroLift. This study examines voiding function and patient satisfaction following UroLift removal and subsequent treatment with either greenlight laser photovaporization of the prostate (GLL) or TURP.
Methods: We examined six patients who had undergone UroLift and were still having bothersome urinary symptoms. These patients had UroLift removed with subsequent GLL, TURP, or both. They were treated by a single surgeon at a single institution. Maximum flow rates, post-void residual volumes (PVR), AUA Symptom Scores (AUASS), and bother scores were examined before and after removal of UroLift. We hypothesized that removal of UroLift would result in improvement in urinary symptoms and patient satisfaction.
Results: All surgeries were technically successful without complications. Two patients had maximum flow rates measured before and after UroLift removal; both had increased flow rates with an average increase of 10.5 mL/sec. Of the three patients that had PVRs measured, two out of the three had decreased PVRs following UroLift removal with an average decrease of 215.5 mL. Five patients had AUASS before and after removal, three of which had decreased scores after removal, with an average decrease of 15 points. Bother scores were reduced in 4 out of 4 patients with scores measured before and after removal, with an average decrease of 2.3 points.
Conclusion: In this case series, removal of UroLift and treatment with either GLL or TURP resulted in improved urinary symptoms and patient satisfaction in patients who had persistent LUTS following UroLift. Prospective studies are warranted with larger sample sizes to confirm these findings.
Funding: N/A

Poster #91
COST ANALYSIS OF MINIMALLY INVASIVE BPH INTERVENTION: UROLIFT VERSUS REZUM
Eric Wendel, MD[1], Bryan Savage[2], Michael Growcott, PhD[1], Eric Laborde, MD[1], Michael Maddox, MD[1]
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Presented By: Eric Wendel, MD

Introduction: In the 2019 amended AUA guidelines, both prostatic urethral lift (Urolift) and water vapor thermal therapy (Rezum) were listed as surgical options with a moderate and conditional recommendation respectively. We investigated the comparative disposable costs of Urolift and Rezum in our health system over a five-month period.
Methods: Using Epic OpTime software, all patients undergoing either Urolift or Rezum at Ochsner between 1/1/19 and 5/31/19 were identified. Procedure specific data and disposable costs were collected in addition to reimbursement figures in order to calculate the net patient revenue (NPR) as well as the contribution to income (CTI) for each procedure. Outliers, defined as cost/reimbursement greater than 2 standard deviations from the mean, were excluded from the analysis.
Results: During the study period, 88 patients underwent a Urolift procedure with a mean of 4.8 implants per case (range 1-7) while 52 patients underwent a Rezum procedure. 22.7% of Urolift patients had commercial insurance compared to 26.9% of the Rezum population. The mean NPR for the Rezum was $4,522 compared to $7,949 with the Urolift (table 1). Two Rezum procedures and six Urolift procedures were excluded as outliers. Accounting for procedure-specific costs (excluding outliers), the CTI for Rezum and Urolift were $2,946 and $1,641 respectively.
Conclusion: Both Urolift and Rezum are minimally invasive therapies for the management of bladder outlet obstruction. In our experience despite a higher reimbursement for the Urolift, the disposable costs led to a higher CTI for the Rezum procedure. Further study is necessary to fully compare the cost of these procedures factoring in purchase costs and functional outcomes including retreatment rates.
Funding: N/A

Poster #92
MODIFIED SIMPLE PROSTATECTOMY: AN APPROACH TO ADDRESS LARGE VOLUME BPH AND ASSOCIATED PROSTATE CANCERS
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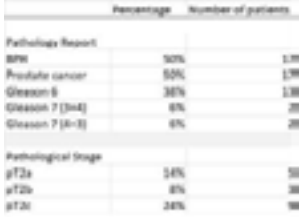
AdventHealth Global Robotics Institute
Presented By: Anamaria Parus

Introduction: Simple prostatectomy is an option for management of patients with enlarged prostates and obstructive symptoms. However, the guidelines still do not state a gold-standard treatment for men with BPH and some of these patients with BPH are also known to harbor prostate cancer. This issue can be a challenge because, in the traditional simple prostatectomy, the prostate capsule is often left in place, and that is usually the area of the prostate cancers.
With the robotic approach, our goal is to analyze the outcomes of modified simple prostatectomy (MSP) by the elimination of the entire prostate tissue.
Methods: Thirty-four patients underwent MSP for BPH diagnosis. We evaluated the pre- and postoperative clinical characteristics as well as pathological data.
MSP was performed using the DaVinci Xi robot; the entire prostate was removed. We performed full nerve-sparing bilaterally, minimal apical dissection, seminal vesicles sparing, and full vesicourethral anastomosis. The pre- and postoperative AUA scores were compared on paired T-test.
Results: The mean operative time and blood loss were 126 minutes and 160.5ml, respectively. The final pathology report described 17 patients (50%) with BPH and 17 (50%) with BPH and prostate adenocarcinoma. The mean prostate size was 145.6 grams.

After surgery, 97% had AUA score improvement. The mean AUA Symptom score was 21, and the mean improvement in the AUA score after surgery was 13 points. 80% of the patients who followed up in our clinic (24 patients) reported full continence after surgery, 3.3% reported two pads use, 13.2% more than two pads, and 3.3% underwent artificial sphincter surgery. The mean days to continence was 68.5 days.
Regarding the patients with a prostate cancer diagnosis, 97% had PSA lower than 0.01 ng/ml and only one patient had a PSA increase 5 years postop. The mean pre- and postoperative SHIM were 10 and 6.5, respectively.
Conclusion: Modified simple prostatectomy is an acceptable treatment option for men with BPH. The procedure allows for significant symptom relief and removal of chronic catheters. Our modified approach was able to eliminate the entire prostate, which was significant because 50% of these patients had prostate cancer on the final pathology.



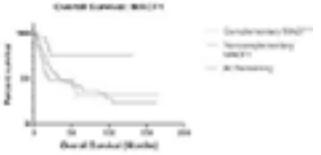
	Percentage	Number of patients
Pathology Report		
BPH	50%	1
Prostate cancer	50%	1
Gleason 6	16%	1
Gleason 7 [3+4]	8%	0
Gleason 7 [4+3]	8%	0
Pathological Stage		
pT2a	14%	5
pT2b	8%	3
pT2c	24%	9

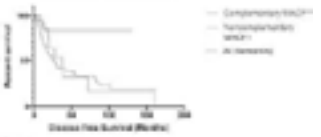
Funding: N/A

Poster #93
ELECTROSTATIC COMPLEMENTARITY BETWEEN T-CELL RECEPTORS AND MACF1 MUTANTS REPRESENTS A SURVIVAL ADVANTAGE IN PATIENTS WITH MUSCLE INVASIVE BLADDER CANCER
Kyle Michelson[1], Boris Chobrutskiy[2], Ross Simon[3], Jay Patel[3], Trushar Patel[3], George Blanck[2]
[1]SUNY Downstate Medical Center, Dept of Urology, [2]University of South Florida, Dept of Molecular Medicine, [3]University of South Florida, Dept of Urology
Presented By: Kyle Peter Michelson, BA

Introduction: Mutant amino acids in tumor cells are presumed to elicit an anti-tumor immune response mediated by T-cells. Thus, we obtained the amino acid sequences for the T-cell receptors in muscle invasive bladder cancer (MIBC) patients to determine whether computational approaches could chemically link the T-cell receptors (TCR) to such mutant amino acids. We applied this novel approach to MIBC patients with mutations in the MACF1 gene to determine if TCR-mutant amino acid chemical linkage correlates with clinical features and survival outcomes.
Methods: We acquired the amino acid sequences of the TCR-antigen binding site from T-cells of MIBC patients from The Cancer Genome Atlas (TCGA). We assessed the electrostatic charge of these amino acids sequences, termed the complementary determining region-3 (CDR3). We then obtained the net change in electrostatic charge caused by the mutant amino acids in the tumor cells of the matching patients. To determine whether the CDR3 electrostatic charges were complementary to the corresponding amino acids charges, we wrote an original Python program. Survival was analyzed using Kaplan-Meier plots and a log rank-test. Variations in clinical characteristics were examined using Chi-squared analysis.
Results: 53 of the 413 MIBC patients in the TCGA had mutations in the MACF1 gene. TCR CDR3-MACF1 mutant electrostatic complementarity was found in 23 of these patients. Patients with electrostatic complementarity had prolonged overall and disease free survival vs patients with non-complementary TCR CDR3-MACF1 mutants (p=0.007 and 0.016, respectively; Figures 1). Overall survival for patients with non-complementary TCR CDR3-MACF1 mutants was similar to that of all MIBC patients in the TCGA (p=0.233), whereas patients with complementarity had significantly improved survival vs all patients (p=0.013). Patients with complementarity were more likely to be male and white compared to all other MIBC patients (p=0.049 and 0.025 respectively; Table 1).

Interestingly, those with complementarity were more likely than non-complementary TCR CDR3-MACF1 mutants to have incidental prostate cancer (p=0.001).
Conclusion: Electrostatic complementarity between TCR CDR3 and MACF1 mutants is associated with improved survival odds in MIBC patients. Further research is needed to explore whether complementarity between TCR and cancer mutants can reliably serve as a prognostic factor for bladder cancer patients and if complementarity contributes to disparate cancer outcomes.



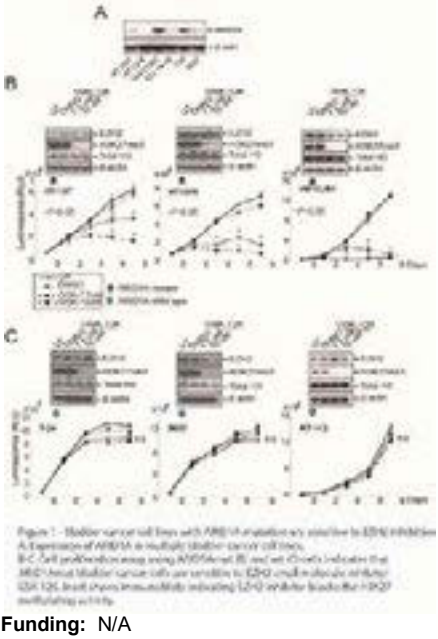


Funding: NA

Poster #94
INVESTIGATING THE SYNTHETIC LETHALITY OF EZH2 INHIBITION IN ARID1A MUTANT BLADDER CANCER
James Ferguson[1], Hasib Rehman[1], Darshan Chandrashekar[2], George Netto[2], Soory Varambally[2]
[1]UAB Urology, [2]UAB Pathology
Presented By: James E. Ferguson, III, MD, PhD

Introduction: Next-gen sequencing of bladder cancer (BCa) has revolutionized our mechanistic understanding of the disease. Genes involved in epigenetic modifications such as ARID1A (a chromatin remodeling enzyme) have been shown to be frequently mutated in BCa, both in early and late disease. Previously, we and others have shown that the histone methyltransferase EZH2, which is a transcriptional repressor, is over-expressed in cancer and functions as an oncogene. Herein, we show that ARID1A mutations sensitize BCa cells *in vitro* and *in vivo* to EZH2 inhibition with the small molecule GSK-126, which may be clinically useful.
Methods: *In silico* analysis using the TCGA dataset compared disease-free survival between patients with ARID1A mutant (ARID1A*mut*) and wildtype (*wt*) tumors. Western blot was used to compare EZH2, ARID1A, and H3K27me3 protein levels between matched pairs of bladder cancer and normal urothelium from cystectomy specimens at our institution. Cell proliferation, viability, and colony formation assays were performed in the presence and absence of GSK-126 in BCa cell lines with/without ARID1A mutations. Xenograft experiments with cell lines with/without ARID1A mutations were performed to

compare tumor growth inhibition by GSK-126. Statistics performed were t-tests, with p-values <0.05, unless otherwise specified.
Results: Patients with ARID1A*mut* BCa have worse disease-free survival compared to ARID1A*wt* patients. In bladder tumors, EZH2 and resultant H3K27me3 levels are dramatically increased, with a decrease in ARID1A protein levels. The proliferation of ARID1A*mut*, but not *wt* BCa cell lines is inhibited by EZH2 inhibitor GSK-126 [Fig 1]. ARID1A knockdown in ARID1A*wt* cells results in *de novo* GSK-126 sensitivity in proliferation assays. *In vivo*, ARID1A *mut*, but not *wt* BCa xenografts are inhibited by GSK-126. Microarray transcriptomic analysis of ARID1A mut and wt BCa cell lines in the presence and absence of GSK-126 provided a list of differentially expressed candidate genes that may provide mechanistic insight into the crosstalk between ARID1A and EZH2. These candidate genes are currently under investigation.
Conclusion: ARID1A mutations appear to be a biomarker for EZH2 inhibitor sensitivity in BCa cells and may represent a new epigenetic therapeutic target for patients.

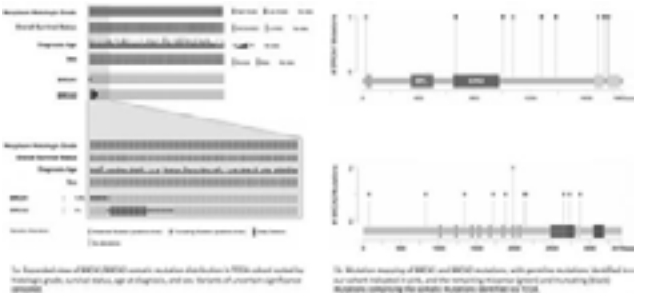


Funding: N/A

Poster #95
SHOULD UROTHELIAL CARCINOMA BE CONSIDERED PART OF BRCA1 AND BRCA2 CANCER SYNDROMES?
Ankeet Shah, Dominic Grimberg, Hannah Berg, Wei Phin Tan, Brant Inman
Duke University Division of Urology
Presented By: Ankeet Shah, MD

Introduction: Urothelial carcinomas (UC) are not usually considered part of the *BRCA* spectrum of tumors. However, we have identified several patients in whom UC was part of a germline *BRCA* mutation phenotype. We present our experience and compare our findings with those from The Cancer Genome Atlas (TCGA).
Methods: After IRB approval, we identified five patients with a personal history of UC as well as a germline *BRCA1* or *BRCA2* mutation. These mutations were compared to somatic *BRCA* mutations in the 412 patient TCGA (Cell, 2017) cohort using cBioPortal and MutationMapper. Protein-level modifications from such germline mutations were identified from DNA mutation data using Ensembl and ClinVar datasets. We evaluated

pathogenic and nominated pathogenic *BRCA* mutations found in another 411 patient TCGA (PanCancer Atlas) cohort focused specifically on germline mutations in the context of our own cohort. Mutations of uncertain significance were excluded from our analysis.
Results: Within our institutional cohort, we identified three patients with mutations in *BRCA1* and two with mutations in *BRCA2.* Four had non-muscle invasive UC and one had muscle-invasive UC. Four patients in our cohort had family histories of *BRCA*-associated malignancies, including one with a family member with UC. Unlike our institutional cohort, none of the pathogenic or likely pathogenic somatic mutations in the TCGA cohort were identified in patients with low grade cancer (Figure 1a). However, one of the two nominated variants in the TCGA (PanCancer Atlas) germline cohort was associated with low grade cancer. We compared our five patients with 17 patients (Cell, 2017) and four patients (PanCancer Atlas) in the TCGA cohorts with known or nominated pathogenic *BRCA* mutations (Figure 1b). All documented mutations were unique across cohorts aside from two patients with the same BRCA2 mutation in our institutional cohort. With respect to influence on behavior, two of the five patients in our institutional cohort were diagnosed with their *BRCA* mutation in their 30s, before diagnosis of any other malignancy. They initiated screening for *BRCA*-associated malignancies as per guidelines.
Conclusion: We identified four unique germline *BRCA* mutations associated with UC. Although rare, germline *BRCA* mutations are observed in UC patients, and identification of this mutation could impact the patient's overall screening.



Funding: NA

Poster #96
INCREASED ACCUMULATION OF LOW MOLECULAR WEIGHT HYALURON IN BLADDER CANCER TISSUE
Elizabeth Kwenda, B.S[1,2], Paul Dominguez-Gutierrez, PhD[1], William Donelan, PhD[1], Padraic O'Malley, MD[1], Paul Crispen, MD[1], Sergei Kusmartsev, MD/PhD[1]
[1]University of Florida, Department of Urology, [2]University of Florida College of Medicine
Presented By: Elizabeth Kwenda, BS

Introduction: Hyaluronan (HA) is a multifunctional glycosaminoglycan within the extracellular and pericellular matrix. Multiple cancers have increased levels of HA, suggesting abnormal HA metabolism. This study sought to elucidate the role and factors associated with increased HA accumulation within the bladder cancer tumor microenvironment.
Methods: IRB approval and patient informed consent were given before collection of normal and tumor bladder tissue during cystectomy. Using Precisionary compresstome, slice cultures were prepared. 300µM tissue slices were cultured for 3-14 days then fixed in formaldehyde before staining for HA. To asses size of HA, glycosaminoglycans were isolated from samples using an ethanol-based protocol. Polyacrylamide gel electrophoresis was used for analysis of hyaluronan size using commercial standards as controls. To test the effect of the tumor microenvironment on normal cells, mouse myeloid cells were isolated from naïve bone marrow and cultured in plates precoated

with high molecular weight HA (HMW-HA) in the presence or absence of tumor conditioned media. Cell cultures were then fixed for HA and examined using fluorescent microscopy. WES capillary Western Blotting was used to compare levels of Hyal2 expression in all cells.
Results: Cultured slices from 25 bladder cancer patients were characterized by highly fragmented HA with a molecular weight < 20 kDA. Normal bladder tissue was characterized by long structured linear pericellular HA, low inflammatory infiltrates and HMW-HA (>200 kDA). Low molecular weight HA (LMW-HA) levels were undetectable in normal bladder samples. Furthermore, tumor bladder tissue was infiltrated with Hyal2 expressing myeloid cells and increased secretion of pro-inflammatory cytokines. Hyal-2 expression in mouse bone marrow derived myeloid cells was inducible and stimulated by exposure to tumor-conditioned medium**.** Once Hyal-2 expression was up-regulated; degradation of HMW-HA into LMW-HA was observed.
Conclusion: Experimental and clinical samples of bladder cancer demonstrate high infiltration of Hyal-2 expressing myeloid cells. Increased Hyal-2 expression promotes degradation of HMW-HA into highly fragmented LMW-HA. This LMW-HA triggers inflammation via increased production of cytokines, chemokines, and growth factors within the tumor microenvironment. Future studies should focus on Hyal-2 as a potential target for bladder cancer therapy and LMW-HA as a prognostic marker
Funding: Grant 8JK05 from J E King Biomedical Research Program

Poster #97
EFFECT OF PRE-EXISTING CONDITIONS ON BLADDER CANCER DIAGNOSIS: A COHORT STUDY USING ELECTRONIC PRIMARY CARE RECORDS
Madeline Carney, BA[1], Sarah Price, PhD[2], Elizabeth Shephard, PhD[2], Luke Mounce, PhD[2], Myra Quiroga, BS, MS[1], Willie Hamilton, MD,PhD[2]
[1]USF Morsani College of Medicine, [2]University of Exeter Medical School
Presented By: Madeline Hope Carney, BA

Introduction: Comorbid diseases may delay the diagnosis of bladder cancer. This study tested the two hypotheses. First, there is an association between comorbidity burden and advanced-stage cancer, where the conditions compete for clinical attention and cancer symptoms are overlooked. Second, an association exists between having comorbid conditions that mimic the patient's first possible symptom of cancer and advanced-stage cancer.
Methods: This population-based, observational study was set in The Clinical Practice Research Datalink (a dataset of UK primary care medical records) with linkage to Public Health England National Cancer Registration and Analysis Service data. We studied adults (40 years) with an incident bladder cancer diagnosis (ICD10 code C67) between 01/01/2000 and 12/31/2015. CPRD records one year before cancer diagnosis were searched for codes indicating attendance for bladder cancer symptoms (hematuria, dysuria, and abdominal mass). Records made in the 2 years before the earliest cancer symptom were searched for diagnostic codes for common conditions (e.g., diabetes) and for conditions sharing symptoms with bladder cancer (e.g., urinary tract infection). Data were analyzed using logistic regression. The outcome variable was stage of bladder cancer diagnosis: advanced (3 or 4) vs early (1 or 2). Explanatory variables included count of pre-existing comorbid conditions, and an "alternative-explanations" variable indicating a patient's comorbid condition may explain their first possible bladder cancer symptom. The model adjusted for age, sex, and deprivation.
Results: The analysis included 1,469 (76.4% male) patients, with 270 (18.4%) having advanced-stage cancer. 1,178/1,469 (80.2%) patients (73.6% male) had 1 or more comorbid conditions. 616/1,469 (41.9%) patients (64.8% male) had alternative explanations for the first possible symptom of cancer. Women were more likely than men to be diagnosed with advanced-stage cancer (odds ratio 1.62; 95% CI 1.20 to 2.18; p=0.001). Alternative explanations for the first possible symptom of bladder cancer were strongly associated with advanced-stage diagnosis similarly in men and women (1.69, 1.20 to 2.39, p=0.003). Count of conditions was not associated with stage at diagnosis (p=0.64).

Conclusion: Existing comorbid diseases that mimic the presentation of bladder cancer are associated with advanced stage at diagnosis. Women are more likely than men to be diagnosed with advanced-stage cancer, but the effect is not driven by alternative explanations.
Funding: N/A

Poster #98
COST-EFFECTIVENESS OF RADICAL CYSTECTOMY VS. TRIMODALITY FOR TREATMENT OF MUSCLE INVASIVE BLADDER CANCER
Nathan Suskovic, Medical Student[1], Ann Raldow, Radiation Oncology[2], Trevor Royce, Radiation Oncology[3], Angela Smith, Urology[4]
[1]University of North Carolina at Chapel Hill, School of Medicine, [2]University of California Los Angelos, Department of Radiation Oncology, [3]University of North Carolina at Chapel Hill, Department of Radiation Oncology, [4]University of North Carolina at Chapel Hill, Department of Urology
Presented By: Nathan Scott Suskovic, BA

Introduction: Muscle invasive bladder cancer (MIBC) comprises 25% of all bladder cancers at the time of diagnosis. Radical Cystectomy (RC) has traditionally been the gold standard curative treatment for MIBC. Trimodality therapy (TMT) with maximal transurethral resection of bladder tumor, chemotherapy, and radiation is an alternative MIBC treatment, listed as a Category 1 recommendation by the NCCN. TMT has shown equivalent survival for carefully selected patients. However, the comparative cost effectiveness between RC and TMT is unknown. Therefore, the purpose of this study was to compare the cost-effectiveness of RC versus TMT for MIBC.
Methods: We developed a Markov model using TreeAge software to simulate a 5-year outcome for one million 65-year old hypothetical patients with MIBC undergoing either RC or TMT **(Figure 1).** Hypothetical patients in the RC treatment pathway had an adverse event, no adverse event, or immediate death after surgery. After RC, patients either had no evidence of disease or transitioned to locoregional recurrence, metastatic recurrence, or death. Hypothetical patients in the TMT treatment pathway had either an adverse event or no adverse from treatment. After TMT, patients either had disease free bladder intact survival or transitioned to locoregional failure, metastatic recurrence, or death. Patients with locoregional failure from TMT transitioned into non-salvageable disease or salvageable disease. Patients with salvageable disease prompted a salvage cystectomy. Model probabilities and utilities were extracted from the literature. Costs were derived from 2019 National Medicare Fee Schedule. The primary endpoint was the incremental cost-effectiveness ratio (ICER).
Results: RC and TMT were associated with quality adjusted life years (QALY) of 2.88 and 3.38 respectively. This comes out to an incremental QALYs of 0.5 favoring TMT. The mean costs of RC and TMT were $37,107 and $23,916 respectively. TMT was cheaper with an incremental cost of $13,191.
Conclusion: In patients aged 65 and older with MIBC, TMT was the dominant strategy as compared to RC, as it was both cheaper and associated with increased QALYs based upon model assumptions. The results of this study are the first to evaluate the cost effectiveness of RC and TMT and can inform the ongoing discussion regarding the use of TMT and RC in MIBC.

Funding: Office of Research at University of North Carolina School of Medicine

Poster #99
PATIENT OUTCOMES FOLLOWING NEOADJUVANT CHEMOTHERAPY AND RADICAL CYSTECTOMY VERSUS RADICAL CYSTECTOMY ALONE IN PATIENTS WITH MUSCLE-INVASIVE UROTHELIAL CARCINOMA OF THE BLADDER
Patrick Houghton, MD, Katherine Cockerill, MD, Nikhita Yadlapalli, Paul Young, MD
Department of Urology, Mayo Clinic, FL
Presented By: Patrick Houghton

Introduction: Neoadjuvant chemotherapy (NAC) followed by radical cystectomy (RC) is considered to be the ideal treatment strategy for muscle-invasive bladder cancer. The purpose of this study was to determine overall survival (OS) for patients at our institution who underwent RC with or without NAC for muscle-invasive urothelial carcinoma (UC) of the bladder.
Methods: A retrospective review was performed for patients who underwent RC for muscle-invasive UC of the bladder at our institution between January 2010 and July 2019. This data was stratified based upon treatment or no treatment with NAC and stage on final pathology (pT0, <pT2, or pT2). OS as of July 2019 was the primary endpoint and was calculated for all subsets of patients.
Results: 291 patients at our institution underwent RC for muscle-invasive UC between January 2010 and July 2019. 243 were pT2 at initial diagnosis. Of these 243 patients, 142 underwent NAC. Of those patients, 31 were pT0 and 26 were downstaged (<pT2) but not pT0 on final pathology with an OS of 87.1% (27/31) and 69.2% (18/26) respectively. 85 patients received NAC and were pT2 on final pathology with an OS of 47.1% (40/85). 101 patients with pT2 UC underwent RC without NAC. Of these, 4 were pT0 and 13 were downstaged on final pathology. OS was 100% (4/4) and 92.3%

(12/13) respectively. 84 patients were pT2 on final pathology with an OS of 56.0% (47/84).
Conclusion: This study demonstrates patients who responded favorably to NAC had a much higher OS where as those who had pT2 disease on final pathology following NAC had the worst OS. In the treatment of muscle-invasive UC of the bladder, further investigation needs to be conducted to differentiate which patients are most likely to benefit from NAC verses those who will not.
Funding: N/A

Poster #100
IMPACT OF SARCOPENIA IN THE ERA OF NEOADJUVANT CHEMOTHERAPY FOR MUSCLE-INVASIVE BLADDER CANCER
Goran Rac[1], Yu Zheng[1], Lara Hewett[2], Caitlin Shepherd[1], Harry Clarke[1], Thomas Keane[1], Theodore Gourdin[3], Robert Grubb[1]
[1]Medical University of South Carolina, Department of Urology, Charleston, SC, [2]Medical University of South Carolina, Department of Radiology, Charleston, SC, [3]Medical University of South Carolina, Department of Hematology/Oncology, Charleston, SC
Presented By: Goran Rac, MD

Introduction: Sarcopenia is associated with an increased risk of adverse outcomes in various malignancies, and there is evidence linking chemotherapy toxicity to the presence of sarcopenia. However, the effect of chemotherapy on development or progression of sarcopenia is unclear. We aim to determine whether sarcopenia is affected by neoadjuvant chemotherapy (NAC) in an advanced bladder cancer population and determine if the presence of sarcopenia prior to NAC is predictive of response to therapy as seen in other malignancies.
Methods: A retrospective review of 254 patients who underwent radical cystectomy at our institution between 3/2005-12/2016 was performed. 73 patients underwent NAC, of which 34 had adequate imaging and follow-up for inclusion. Skeletal muscle index (SMI) was calculated using the cross-sectional area of skeletal muscle at L3 (cm2) on CT imaging and normalizing this to the patient's height (m2). Sarcopenia was defined using previously validated cutoffs of SMI < 55 cm2/m2 for males and SMI < 39 cm/m2 for females. Response to NAC was defined as pathologic downstaging to final pathology of < pT2. Complications were assessed using the Clavien-Dindo classification system. Chi-squared tests were used to compare groups based on SMI, with p-value cutoff of < 0.05 to determine significance.
Results: Prior to NAC, 23.5% (8/34) patients were found to have sarcopenia. Overall, 79.4% (27/34) of patients experienced a decrease in SMI, with a mean SMI of 64.0 cm2/m2 prior to NAC and 56.7 cm2/m2 following NAC. This decrease was found to be statistically significant with a mean decrease in SMI of 8.9%. 44.1% (15/34) of patients that underwent NAC had new or worsened sarcopenia afterwards. There was no statistically significant difference in rates of downstaging, complications, recurrence or mortality for patients with sarcopenia prior to NAC compared to those that did not.
Conclusion: Patients who underwent NAC experienced a significant decrease in SMI; however, there was no association between sarcopenia prior to or following NAC and response to NAC. There was no difference in rates of complications, recurrence and mortality. While many patients experienced a decrease in SMI after NAC, including a progression to sarcopenia in almost half of them, this did not appear to significantly alter their clinical course.
Funding: N/A

Poster #101

RADICAL CYSTECTOMY AND ILEAL CONDUIT UNDER REGIONAL ANESTHESIA: SAFE, FEASIBLE, AND AN ACCELERATED POST-OPERATIVE COURSE IN THE AT RISK AND ELDERLY

Michael Tonzi, Matthew Watson, Amanda Carter, Amar Singh
University of Tennessee Chattanooga College of Medicine
Presented By: Michael Sean Tonzi, MD

Purpose: Radical cystectomy is a standard treatment option in the management of muscle invasive bladder cancer. It is associated with significant morbidity and mortality, prolonged hospitalization, and a complicated perioperative course. Bladder cancer patients are often elderly, with comorbidities that increase the potential for post-operative complications. Three prior studies have demonstrated the safety and feasibility of using exclusively regional anesthesia to perform radical cystectomy in high-risk elderly patients. We analyzed perioperative outcomes in patients undergoing radical cystectomy under regional anesthesia, and compared outcomes to a similar cohort that underwent the same procedure under general anesthesia.
Methods: Between September 2018 and 2019, six consecutive patients were identified who underwent radical cystectomy using exclusively regional anesthesia. These patients were declared unfit for general anesthesia due to age-associated medical comorbidities. Perioperative outcomes were evaluated, and compared against a hand-matched cohort based on ASA risk stratification who underwent radical cystectomy using traditional anesthesia. The same surgeon completed all surgeries over the same time period. Results were analyzed using a paired, two-tailed Student's T-test .
Results: All six patients underwent successful cystectomy with ileal conduit under exclusively regional anesthesia. The regional cohort was older (83 vs 72 years of age, p = 0.045), and experienced a significantly more expedient return of bowel function (Day 2.83 vs 4.5, p = 0.021) compared to the general anesthetic cohort. We observed strong trends towards shorter operative times (106.5 vs 182.6 min, p = 0.067) and shorter length of stays (5.5 vs 7 days, p = 0.068) in the regional cohort. No difference was observed among other variables including estimated blood loss, tumor histology, post-operative staging, number of lymph nodes harvested, nodes positive, and 30-day complication rates or severity.
Conclusion: Cystectomy under regional anesthetic appears to be a safe alternative in older populations with no difference in oncological outcomes or perioperative complication rates. We observed a significant decrease in time to return of bowel function in the regional cohort. We also observed strong trends towards decreased operative times and shorter hospitalizations in the regional cohort. Larger scale studies are warranted to evaluate the application of regional anesthesia towards a broader population undergoing cystectomy and ileal conduit.

Table 1. Mean perioperative outcomes in patients undergoing regional vs general anesthesia for radical cystectomy with ileal conduit.

	Regional Anesthesia	General anesthesia	p-value
Age at surgery (yr)	83.16	72	0.045
EBL (cc)	250	366.6	0.119
Length of Surgery (min)	106.5	182.6	0.067
Length of Stay (Days)	5.5	7	0.068
Return of Bowel Function (Days)	2.83	4.5	0.021
Lymph Nodes	4.16	6.8	0.188

Funding: N/A

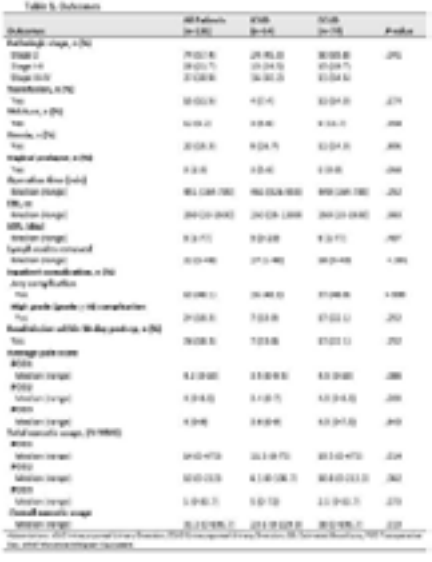
Poster #102
INTRAVENOUS LIDOCAINE TO REDUCE OPIOID CONSUMPTION AND LENGTH OF STAY IN PATEINTS RECEIVING CYSTECTOMY: A RETROSPECTIVE STUDY
Oliver Benton, MD[1], Paul Lesko, MD[1], Josh Earl, MD[1], James Bienvenu, MD[1], Jason Buehler, MD[1], Daniel Peters, MS3[1], John Pierce, MS3[1], Alexander Houck, MS3[2]
[1]UT Medical Center, [2]ETSU
Presented By: Oliver Benton, IV, MD

Introduction: Recent evidence has promoted intravenous lidocaine infusions (IVLI) as an opioid-sparing analgesic-adjunct in enhanced recovery after surgery (ERAS) protocols. This has been well supported in Colorectal surgery literature. As such, institutions are now adopting IVLI as a non-narcotic supplement to ERAS pathways. Through a retrospective review, we sought to assess IVLI's potential for decreased postoperative morphine milligram equivalent (MME) consumption and length of stay (LOS) following cystectomy to develop a more standardized ERAS protocol for prospective comparison.
Methods: A retrospective review using three ICD-10 codes was performed on patients undergoing radical or simple cystectomy at a single institution from 8-1-2016 to 8-15-2019 following IRB approval. IVLI initiated intraoperatively was given at a fixed rate of 1.5mg/kg/hr for a total of 48hrs per institutional protocol. Primary and secondary endpoints were MME reduction during inpatient postoperative phase and LOS, respectively. Surgical approach (open v. robotic), duration of surgery, type of urinary diversion (Ileal conduit v. Neobladder v. Indiana pouch), American Society of Anesthesiologists (ASA) status, duration of IVLI, and time to first bowel movement (tBM) were incorporated. Patients who underwent partial cystectomy were excluded.
Results: After review, 88 patients were identified. Of these, 27 received an IVLI and 61 served as controls. Primary and secondary endpoints were analyzed using Mann-Whitney U test as the data were not normally distributed. Pearson Chi-square or Student t-test was utilized to compare other variables. No statistical difference was identified between surgical approach (Open [26] v. Robotic [62]) (p=0.13), diversion type (p=0.54), or ASA status (p=0.61). There were not significant differences between the groups for total MMEs (p = 0.09), LOS (p = 0.42), or tBM (p=0.47). Median MME totals revealed 187 for the control group versus 90 for the treatment group.
Conclusion: Adding IVLI to the ERAS protocol following cystectomy failed to show statistically significant differences in both endpoints. However, the median reduction in MME appears to be clinically relevant and may achieve statistical significance with a larger cohort of patients receiving IVLI. Institutional and ERAS specific confounders would be better controlled in a prospective double-blind randomized controlled trial.
Funding: N/A

Poster #103
COMPARISON OF SURGICAL AND FUNCTIONAL OUTCOMES OF INTRACORPOREAL AND EXTRACORPOREAL URINARY DIVERSION FOLLOWING ROBOT-ASSISTED RADICAL CYSTECTOMY
Matt Ellis[1], Hamza Beano[1], Jiaxian He[2], Caitlin Hensel[2], William Worrilow[1], Kris Gaston[1], Peter Clark[1], Stephen Riggs[1]
[1]Department of Urology, Atrium Health, Charlotte, North Carolina, [2]Department of Cancer Biostatistics, Levine Cancer Institute/Atrium Health, Charlotte, North Carolina
Presented By: Matt Ellis

Introduction: Improvements in robotic technology and surgeon experience has made intracorporeal ileal conduit urinary diversion (ICUD) following robot-assisted radical cystectomy (RARC) a reality. This study evaluates a single surgeons experience (SBR) with ICUD compared to extracorporeal urinary diversion (ECUD) performed at a tertiary care center.
Methods: We reviewed 131 bladder cancer patients who underwent RARC with ileal conduit between January 2015 and February 2019 at Levine Cancer Institute. Data was collected using our prospectively maintained retrospective database, REDCap, to evaluate perioperative outcomes of ICUD and ECUD. Demographics, clinicopathologic

parameters, postoperative complications, readmissions, pain scores and narcotic use (in IV morphine milligram equivalents) were analyzed. Fisher's exact test was used to assess categorical variables while two-sample t-test and nonparametric Mann-Whitney U test were employed for continuous outcomes. Postoperative narcotic usage and patient average pain score were investigated using Mann-Whitney U test.
Results: 131 consecutive patients underwent RARC, with 54(41%) receiving an ICUD and 77(59%) an ECUD. The proportion of pathologic T0 was higher in the ECUD group (65.8%) compared to the ICUD group (45.3%, p = 0.041). Mean lymph node yield was higher in the ICUD (27) group compared to ECUD (18, p<0.001). Average pain score on POD2 was lower in the ICUD group (3.4) relative to ECUD (4.5, p=0.009) as was median total narcotic usage for POD1-3 (ICUD 23.6, ECUD 38, p=0.019). Median operative time (ICUD 461, ECUD 449, p=0.252), EBL (ICUD 250, ECUD 250, p=0.983) and length of stay (ICUD 5, ECUD 6, p=0.407) did not differ significantly between the groups. Rates of blood transfusion, uretero-enteric stricture, vaginal prolapse, hernia, and 30 and 90-day complications were not significantly different between the two groups.
Conclusion: ICUD exhibits similar safety and efficacy to ECUD. This study suggests a possible benefit of ICUD with regards to post-operative pain and narcotic usage. Further investigation with a larger cohort of patients is warranted to establish whether clear advantages of ICUD exist.



Funding: N/A

Poster #104
A NOVEL SMALL MOLECULE FOR TREATMENT OF MUSCLE INVASIVE BLADDER CANCER
Andrew Park, Kristy Nguyen, Jamie Messer, Ahmed Haddad, Murali Ankem
University of Louisville, Dept. of Urology, Louisville, KY
Presented By: Andrew Park

Introduction: Due to lack of mechanistic insights, muscle invasive bladder cancer (MIBC) remains incurable and one of the most lethal forms of cancer in USA. Current treatment options demonstrate a modest survival benefit. Therefore, identifying novel targeted therapies is a priority to improve outcomes in MIBC patients. Specific mRNA binding factors regulate MIBC proliferation and metastasis, which could be ideal targets for therapeutic interventions.

Methods: MIBC cell lines TCCSUP and HT1376, and primary cells (hTERT) as control were treated with increasing concentrations of ASR488, a novel small molecule. RNASeq analysis, cell viability assays, FACS analysis, immunoblotting and migration/invasion assays were performed in ASR488-treated MIBC cells. CPEB1 expression in human MIBC specimens against control was analyzed with qRT-PCR and immunohistochemistry (IHC).
Results: ASR488 treatment demonstrated significant decrease in cell viability of MIBC cells (TCCSUP; p=0.0032 and HT1376; p=0.0021). More importantly, ASR488 treatment had insignificant effect on cell viability of hTERT. Pro-apoptotic signaling was initiated in ASR488-treated MIBC cells (TCCSUP: 10.5%, p = 0.0181 and HT1376: 7.2%, p = 0.0131; 24h). Immunoblot analysis revealed ASR488 significantly inhibited both p65 and BCl2 expression in MIBC cells and promoted a time-dependent increase in the expression of BAX and cleaved poly (ADP-ribose) polymerase (PARP). DEG data from RNASeq analysis of ASR488-treated BCa cells demonstrated significant upregulation in CPEB1 expression (0.004174), which was confirmed with qRT-PCR (36 fold). CPEB1 expression was found to be low (p=0.0004) in human BCa specimens as compared to controls. IHC analysis also confirmed significantly low CPEB1 expression in MIBC specimens. Immunoblotting analysis revealed a time dependent increase in CPEB1 expression in ASR-488 treated MIBC cells. ASR-448 treatment induced cell cycle arrest in G0/G1 phase in MIBC cells. Immunoblot analysis showed that induction of p27/Kip1 and p21 expression corresponded with CPEB1 expression in ASR488-treated TCCSUP cells, irrespective of the p53 status. Interestingly, significant inhibition of migratory potential (p=0.0018), invasive capability (p=0.0024) and colony-forming ability (p=0.0013) was observed in CPEB1-overexpressing MIBC cells as compared to vector transfectants.
Conclusion: ASR488, a novel small molecule, specifically induces CPEB1 expression in MIBC cells. CPEB1 controls expression of p27/Kip1, a cell cycle regulator and this interaction may play a crucial role in inhibition of MIBC cell growth.
Funding: N/A

Poster #105
POTENTIAL USE OF AUTOLOGOUS RENAL CELLS FROM DISEASED KIDNEYS FOR THE TREATMENT OF RENAL FAILURE
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Presented By: John D. Jackson, PhD

Introduction: Chronic kidney disease (CKD) occurs when the kidneys gradually lose function. For patients with CKD, renal transplantation is the only curative treatment option. We evaluated primary renal cells obtained from diseased kidneys to determine whether their normal phenotypic and functional characteristics are retained, and could be used for cell therapy.
Methods: Renal cells were isolated and cultured from three normal kidneys (NK) and three CKD kidneys. Primary renal cells from each group were evaluated for cell growth patterns and histo-morphological analyses. To confirm renal specific phenotypes, immunofluorescent staining was performed on the cultured cells using renal cell specific markers. Scanning and transmission electron microscopy were performed for surface and ultrastructural analysis. Glutathione assay, sodium uptake function and albumin uptake assay were performed to evaluate cellular function.
Results: Primary renal cells isolated from both normal kidneys (NK) and diseased kidneys (CKD) showed similar phenotypic characteristics and growth kinetics. The expression levels of renal tubular cell markers, Aquaporin-1 and E-Cadherin, and podocyte-specific markers, WT-1 and Nephrin, were similar in both NK and CKD kidney derived cells. Using fluorescence- activated cell sorting (FACS), specific renal cell populations were identified and included proximal tubular cells (83.1 % from NK and 80.3 % from CKD kidneys); distal tubular cells (11.03% from NK and 10.9% from CKD kidneys); and podocytes (1.91% from NK and 1.78% from CKD kidneys). Ultra-structural analysis using scanning electron microscopy (SEM) revealed microvilli on the apical

surface of cultured cells from NK and CKD samples. Moreover, transmission electron microscopy (TEM) analysis showed a similar organization of tight junctions, desmosomes, and other intracellular structures. The Na+ uptake characteristics of NK and CKD derived renal cells were also similar (24.4 mmol/L and 25 mmol/L, respectively) and no significant differences were observed in the protein uptake and transport characteristics of these two cell isolates.
Conclusion: These results show that primary renal cells derived from CKD donors have similar structural and functional characteristics to their counterparts from a normal healthy kidney (NK) when grown *in vitro*. This study suggests that cells derived from diseased kidney may be used as an autologous cell source for renal cell therapy.
Funding: Tengion

Poster #106
EFFECT OF HUMAN AMNIOTIC FLUID STEM CELLS ON KIDNEY FUNCTION IN A MODEL OF CHRONIC KIDNEY DISEASE
Sunil George, Mehran Abolbashari, Tae-Hyoung Kim, Chao Zhang, Julie Allickson, John Jackson, Sang Jin Lee, In Kap Ko, James Yoo, Anthony Atala
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Presented By: John D. Jackson, PhD

Introduction: Chronic kidney disease (CKD) is a major medical problem globally. While dialysis and kidney transplantation have been used as primary treatments for renal disease, dialysis does not restore full renal function, and there is a shortage of donor kidneys for transplantation. Recent advances in cell-based therapies have offered a means to augment and restore renal function. This study aimed to examine the potential therapeutic effects of human-derived AFSCs (hAFSCs) for treatment of CKD.
Methods: Human amniotic fluid stem cells suspended in PBS were injected (total of 5×106 cells per rat) into the upper and lower poles of the renal parenchyma of both kidneys in an ischemia-reperfusion chronic kidney disease rat model. Blood was collected for measurements of blood serum creatinine at 1 week post-injection and then every 2 weeks until the end of the study (10 weeks after cell delivery). The harvested kidney tissue was evaluated for histologic, immunohistologic, and transmission electron microscopy analyses.
Results: Infusion of AFSC facilitated decreased serum creatinine levels at 2 weeks after the cell injection vehicle (P 0.14, n=4) with a trend toward improved renal function. The reduction in serum creatinine was maintained up to 10 weeks post-cell injection. Histologic analyses revealed kidney injury, including tubular damage, in control rats, while AFSC-injected kidneys showed normal tubular vascular structure similar to the sham groups. Quantitatively, the collagen deposition in cortex and medulla in the AFSC group was significantly lower than in the vehicle group (P <0.01), and no significant difference was observed in HASC vs Sham for both cortex and medulla.
Conclusion: Intrarenal delivery of AFSC promoted recovery from CKD in a rat model, based on assessments of functional and structural aspects. This study demonstrates that administration of human-derived AFSCs facilitates functional and structural improvement in a rat model of CKD, and suggests that cell therapy with AFSCs has potential as a therapeutic strategy to recover renal function in patients with CKD.
Funding: This study was supported, in part, by the State of North Carolina

Poster #107
KIDNEY REGENERATION WITH BIOMIMETIC VASCULAR SCAFFOLDS BASED ON VASCULAR CORROSION CASTS
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Presented By: John D. Jackson, PhD

Introduction: We have developed a biomimetic renal vascular scaffold based on a vascular corrosion casting technique. This study evaluated the feasibility of using this novel biomimetic scaffold for kidney regeneration in a rat kidney cortical defect model.

Methods: Vascular corrosion casts were prepared from normal rat kidneys by perfusion with 10% polycaprolactone (PCL) solution, followed by tissue digestion. The corrosion PCL cast was coated with collagen, and PCL was removed from within the collagen coating, leaving only a hollow collagen-based biomimetic vascular scaffold. The fabricated scaffolds were pre-vascularized with MS1 endothelial cell coating, incorporated into 3D renal constructs, and subsequently implanted either with or without human renal cells in the renal cortex of nude rats.
Results: The implanted collagen-based vascular scaffold was easily identified and integrated into native kidney tissue. The biomimetic vascular scaffold coated with endothelial cells (MS1) showed significantly enhanced vascularization, as compared to the uncoated scaffold and hydrogel only groups ($P<0.001$). Along with the improved vascularization effects, the MS1-coated scaffolds showed ~~a~~ significant renal cell infiltration from the neighboring host tissue, as compared to the other groups ($P<0.05$). Moreover, addition of human renal cells to the MS1-coated scaffold resulted in further enhancement of vascularization and tubular structure regeneration within the implanted constructs.
Conclusion: The biomimetic collagen vascular scaffolds coated with endothelial cells are able to enhance vascularization and facilitate the formation of renal tubules after 14 days when combined with human renal cells. This study shows the feasibility of bioengineering vascularized functional renal tissues for kidney regeneration.
Funding: This study was supported, in part, by the State of North Carolina

Poster #108
CONSERVATIVE MANAGEMENT OF RENAL TRAUMA AT THE PUERTO RICO MEDICAL CENTER
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University of Puerto Rico School of Medicine
Presented By: Vincent Xavier Rodriguez Bury, MD

Introduction: Renal injury occurs in up to 5% of all blunt and penetrating traumas. It is commonly categorized according to the American Association for the Surgery of Trauma (AAST) renal injury scale which consists of five grades (I-V), ordered in increasing severity. Current trends in care favor a more conservative approach for the management of patients with renal injury, in part due to the high rate of nephrectomy associated to surgical exploration. We reviewed our experience with the management of renal trauma at the Puerto Rico Medical Center (PRMC).
Methods: We retrospectively reviewed our database of 85 patients who presented to the PRMC Trauma Hospital with renal injury and were consulted to the Urology service from November 2015 to August 2019. There was a total of 90 renal units with sustained trauma (5 patients with bilateral renal trauma). Twenty patients in our cohort (23.5%) underwent surgical intervention during the hospital admission. Both patient and disease specific characteristics were examined.
Results: Mean age of the entire cohort was 33.5 years (range: 5 to 76). Sixty-nine patients were male (81.2%) while 16 patients were female (18.8%). The most prevalent mechanism of injury was blunt trauma in 76.7% of cases, while penetrating injury accounted for 23.3% of cases. AAST grade of renal trauma was: grade II (12.2%), grade III (42.2%), grade IV (43.3%), and grade V (2.2%). The most common procedure carried out in the intervention arm of the cohort was ureteral stent placement in 9 patients, followed by arteriogram with selective embolization in 3 patients, retroperitoneal exploration in 2 patients, nephrectomy in 2 patients, and other procedures in 4 patients. Nephrectomy rate for the entire cohort was 3.3%. Transfusion rate was 50% in intervention arm and 33.8% in the non-intervention arm. Re-admission rate within 1 month of discharge was 1.54% for the non-intervention cohort and 0% for intervention cohort.
Conclusion: Renal trauma management is increasingly more conservative. Our data shows that the majority of hemodynamically stable patients with renal trauma may be successfully managed non-operatively. Long term prospective studies should focus on renal unit function and long-term viability after conservative approach to renal trauma. **Funding:** N/A

Poster #109
PENETRATING SCROTAL TRAUMA AT A HIGH-VOLUME URBAN TRAUMA CENTER: DIAGNOSIS, MANAGEMENT, AND OUTCOMES
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Presented By: Elizabeth Tourville, MD

Introduction: Although penetrating trauma comprises less than half of all scrotal injuries, it can result in testicular loss leading to hypogonadism, infertility, and psychological harm. Therefore, timely and appropriate management of penetrating scrotal trauma should be implemented to potentially prevent devastating long-term sequelae following these injuries. We sought to determine the incidence, means of management, and outcomes of testicular injuries suffered by men with penetrating scrotal injuries over a 5-year period.
Methods: We retrospectively reviewed the medical records of patients who presented to our Level I Trauma Center from 1/1/2014 through 12/31/2018 with ICD billing codes for scrotal laceration, testicular laceration, trauma to the scrotum/testicle, contusion of the scrotum/testicle, testicular rupture, testicular hemorrhage, scrotal hematoma, testicular hematoma, and testicular avulsion. Records from initial assessment by a urologist through most recent follow up visit at the time of chart review were evaluated.
Results: The mechanism for 53 sustained penetrating scrotal traumas was GSW (94.4%), shearing injury (1.8%), and bite (3.8%). After evaluation, surgical exploration was warranted in 68% of patients due to concern for testicular injury. Of these men, 66.7% suffered a testicular injury requiring either orchiectomy or orchiorrhaphy. 19 patients (78.2%) had a unilateral testicular injury while 5 patients (21.8%) suffered bilateral testicular trauma. Of the patients with unilateral testicular injuries, 16 underwent an orchiectomy while 3 had an orchiorrhaphy. In patients with bilateral testicular injuries, 4 patients underwent unilateral orchiectomy with contralateral orchiorrhaphy while 1 patient had a bilateral orchiorrhaphy. There were 8 patients (15%) with a concomitant urethral injury and 4 patients (7.5%) with a simultaneous corporal injury. The follow-up rate was 55% with an average length of 109.4 days. The patient who experienced a shearing injury developed necrosis of the scrotum requiring re-operation for debridement with eventual skin grafting. One patient developed chronic orchalgia following orchiorrhaphy and eventually underwent orchiectomy.
Conclusion: GSW is the main mechanism by which patients suffer testicular injuries. Although one-third of patients who underwent surgical exploration did not have a testicular injury, the morbidity associated with surgical intervention was low. Prompt surgical intervention should remain the mainstay of treatment in penetrating scrotal trauma with the goal of preserving testicular tissue when possible.
Funding: N/A

Poster #110
GEOGRAPHIC DISPARITIES IN LITIGATION FOR URETERAL INJURY DURING PELVIC SURGERY
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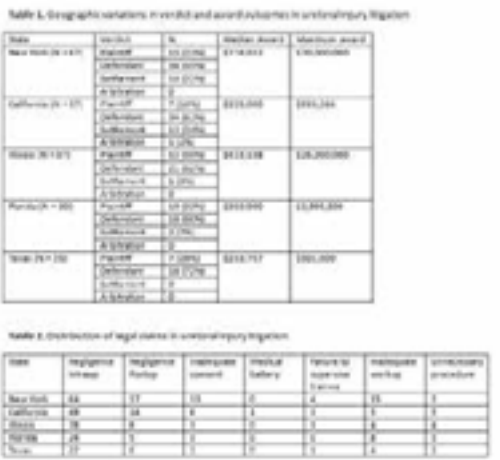
Presented By: Ajay Gopalakrishna, MD, MHS

Introduction: Latrogenic trauma during open, laparoscopic, or endoscopic surgery is the most common cause of ureteral injury. Iatrogenic ureteral injuries are often subtle and an unrecognized or mismanaged ureteral injury can result in significant complications, such as urinoma, stricture, abscess, loss of the ipsilateral kidney, and death. Malpractice laws are variable across the United States. There is little published on geographic disparities in litigation for ureteral injury.
Methods: The legal database WestLaw was queried for all publicly available case dockets related to iatrogenic ureteral injury during open, minimally invasive, and

endoscopic pelvic surgery performed by any specialty throughout the United States. Dockets were mined for demographics, state, litigation claims, litigation outcomes (plaintiff victory, defendant victory, settlement, or arbitration), award amount, and clinical variables. Exploratory analyses were performed using RStudio Version 1.2.1335.
Results: A total of 523 cases were identified. The states with the five highest number of cases were: New York (67), California (57), Illinois (37), Florida (30), and Texas (25). In all five states, the most common outcome was a ruling in favor of the defendant. Amongst cases with a ruling in favor of the plaintiff, there was significant variation in the award amount, with the highest median award in New York ($774,022). The most common claim in all five states was intraoperative negligence. Medical battery was the least common claim in all five states. These results are highlighted in Tables 1 and 2.
Conclusion: New York had the highest number of lawsuits related to iatrogenic ureteral injury. The most common outcome was in favor of the defendant. There was significant geographic variation in monetary award in cases that were ruled in favor of the plaintiff. Awareness of the variation in litigation patterns and outcomes may affect medical practice patterns and approach to the management of iatrogenic ureteral injury.



Funding: N/A

Poster #111
IMPACT OF TRANSPLANT URETERAL STRICTURE LOCATION AND TYPE OF URETERAL REVISION ON LONG-TERM GRAFT SURVIVAL AND PATIENT OUTCOMES IN KIDNEY TRANSPLANTATION.
Caitlin Shepherd, Christinia Holbrooks, Robert Cameron, Angello Lin, Satish Nadig, John McGillicuddy, Derek Dubay, David Taber, Prabhakar Baliga, Vinayak Rohan
Presented By: Caitlin W. Shepherd, MD

Introduction: Ureteral strictures (US) are a cause of morbidity following kidney transplantation and require surgical revision including ureteroureterostomy (UU) and neocystoureterostomy (NC). Our objective was to determine the long term graft survival and outcomes based on the site of US and type of revision surgery.
Methods: We conducted a retrospective longitudinal cohort study of kidney recipients that developed urological complications necessitating surgical intervention following transplantation over 10 years.
Results: 27 patients were identified, 4 had proximal US, 1 had a mid-ureteral stricture, 18 had distal US, and 4 had pan-ureteral strictures. Readmission rates and renal function pre- and post-revision were similar among groups. Pan-ureteral strictures tended to have more recurrent US (4/9 vs 4/18, p=0.233) and less likely to develop

infections (5/9 vs 11/18, p=0.077). Rejection rates were similar among proximal US (25%), distal US (42.8%) and pan-ureteral strictures (25%). When comparing NC with UU, there was no difference in readmission rates (13/24 vs 2/4, p=0.735) or pre- and post-revision Cr (mean 2.67 vs 1.59mg/dL); however, those with NC were more than twice as likely to develop infections (16/24 vs. 1/4, p=0.114) but were only half as likely to develop recurrent US (7/24 vs. 2/4, p=0.409). Overall, graft survival was 85.7% and patient survival was 96.4% with a mean follow-up of 6.2 years. Average baseline creatinine was 2.6 mg/dL prior to surgical revision with an average nadir creatinine of 1.5 mg/dL post revision. There were 4 graft failures over the study period, all in the NC group with average time to graft failure of 8.1 years. When comparing patients who received a kidney from a deceased donor (N=20) vs. a living donor (N=7), rates of infection (12/20 vs. 4/7, p=0.895) and readmission (10/20 vs. 4/7, p=0.745) were similar. However, deceased donors were more likely to develop rejection (7/20 vs. 1/7, p=0.302), graft failure (4/20 vs. 0/7, p=0.199), and US recurrence (7/20 vs. 1/7, p=0.302) after ureteral revision.

Conclusion: US location and revision type do not impact renal function or readmission rates, but may influence US recurrence and infections. However, long-term graft and patient survival is better than expected in this cohort of patients undergoing surgical intervention for complicated US.

Funding: N/A

Poster #112

MEDICAL MANAGEMENT OF PENILE AND URETHRAL LICHEN SCLEROSUS WITH TOPICAL CLOBETASOL IMPROVES LONG TERM VOIDING SYMPTOMS AND QUALITY OF LIFE

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Presented By: William R. Boysen, MD

Introduction: Lichen sclerosus (LS) is a chronic inflammatory skin disease that can cause considerable voiding symptoms and distress in men with penile or urethral involvement. Management can be challenging, with limited options for reconstruction due to high recurrence rates. We examined our experience of non-operative management of penile and urethral LS with topical, high potency clobetasol cream. Our hypothesis was that medical management results in long term improvement in quality of life.

Methods: We identified male patients referred to our tertiary reconstructive clinic for management of presumed LS from 2011 to 2019. All patients underwent biopsy to confirm diagnosis. We reviewed data on demographics, biopsy results, patient reported AUA symptom scores and quality of life index, and management. Statistical analyses included descriptive statistics, Wilcoxon signed-rank test of means, and sign test of matched pairs.

Results: Between 2011 and 2019, 60 men underwent penile biopsy for presumed LS, with diagnosis confirmed in 52 men (86.7%). One patient was found to have squamous cell carcinoma (1.6%) and the remaining 7 had benign findings. Men with biopsy proven LS had mean age of 51.9 years (SD 15.0), mean BMI of 33.6 (SD 7.1), and were predominantly Caucasian (75%). The majority (75%) had undergone at least one prior operation, and 21 (40.4%) had undergone two or more. Only 12 patients (23.1%) had been prescribed topical steroids prior to referral. Topical clobetasol 0.05% was recommended to all patients, and was the only treatment needed in 45 men (86%, Table 1). In the men treated with steroids alone, there was a significant improvement in AUA symptoms score (mean 17.5 baseline versus 8.7 post-treatment, p<0.01) and quality of life index (median 4 “mostly dissatisfied” versus 2 “mostly satisfied”, p<0.01). Mean follow up was 19 months (SD 23.8).

Conclusion: Treatment of LS with topical, high potency steroid cream alone results in significant improvement in AUA symptom score and quality of life index. The majority of patients were referred without an initial trial of topical steroids, and could potentially avoid the burden of travel to a tertiary care center if medical therapy were initiated prior to consideration for referral when LS is suspected.

Table 1. Summary of LS Treatments

Treatment	N	(%)
Clitoridectomy	45	(89.5)
Extended meatotomy	2	(3.8)
Perineal urethrostomy	2	(3.8)
Circumcision [LS limited to prepuce]	2	(3.8)
Urethroplasty	1	(1.9)

Funding: N/A

Poster #113

PREVALENCE OF COITAL URINARY INCONTINENCE IN NULLIPAROUS WOMEN

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Presented By: Siobhan M. Hartigan, MD

Introduction: Coital urinary incontinence (CUI) is a clinical problem with significant impact on quality of life, yet continues to be infrequently studied and under-diagnosed. CUI has been shown to have a prevalence of 10-66% in women with urinary incontinence but it has not been well-studied in a nulliparous population. The aim of our study was to examine the prevalence and associated factors of CUI in nulliparous women.

Methods: An IRB approved, cross-sectional survey was administered to women 18 years old with a secondary analysis aimed to evaluate coital incontinence. We included all non-pregnant, nulliparous, female participants who completed the survey. We queried the prevalence of CUI and associated risk factors.

Results: Our cohort included 2036 nulliparous women, mean age 34.7 years (SD 13.8, range 18-87). CUI was present in 8.21% of nulliparous women. Nulliparous women with CUI had a mean BMI of 26.5 (SD 6.37, range 10.5-55.0) while the mean BMI of those without CUI was 26.0 (SD 6.6, range 17.2-48.4). There does not appear to be an association between CUI and increasing BMI in nulliparous women however, CUI was found to be associated with the presence of DM.

Conclusion: A low but significant percentage of nulliparous women experience CUI which does not appear to be associated with increasing BMI. CUI is associated with the presence of DM. Further research is needed to study CUI in this population in order to identify risk factors, degree of bother, and treatment strategies for an under-diagnosed condition.

Funding: N/A

Poster #114

SIMULATION TRAINING FOR CORRECTION OF MALE STRESS URINARY INCONTINENCE: ASSESSMENT OF SURGICAL KNOWLEDGE AND CONFIDENCE FOLLOWING CADAVERIC LABORATORY TRAINING

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Presented By: Jason Chandrapal, MD

Introduction: Transobturator retrourethral slings (TORUS) and artificial urethral sphincters (AUS) are the gold standard for surgical treatment of male stress urinary incontinence. Familiarity with these procedures during residency training is important, however exposure may vary across training programs. Simulation surgical training has proven to be a valid and an increasingly popular method to teach surgical skills and enhance resident performance in the operating room. The aim of our study is to determine if a focused training course on prosthetic surgery for male incontinence can improve resident knowledge and confidence.
Methods: As part of the 2018 SUPS and the Sexual Medicine Society of North America Annual Meeting, urology residents participated in a structured course which included didactic lectures and a hands-on cadaveric laboratory. Participants completed surveys before the lab as well as 2 weeks and 6 months after. Surveys consisted of 30 multiple-choice questions to assess procedural knowledge and self-confidence regarding prosthetic surgery for male stress urinary incontinence. Analysis assessing pre and post lab responses were performed using the Wilcoxon signed rank test for matched pairs. Secondarily, resident training year and previous AUS and sling experience were assessed.
Results: A total of 32 urology residents participated in the course. Median age [IQR] was 29 [27-34] and a majority were at the PGY 4 (63%) or PGY 5 (20%) level. Most of participants had minimal previous AUS or sling experience with 50% and 94% reporting less than 5 cases respectively. Overall score from the knowledge assessment was significantly improved between the pre-lab vs 2-week post-lab ($p=0.02$) and pre-lab vs 6-month post-lab ($p=0.01$). Similarly, procedural confidence was improved between pre-lab vs 2-week post-lab ($p<0.001$) and pre-lab vs 6-month post-lab ($p<0.001$). On descriptive analysis, knowledge and confidence assessments were not different between year of residency training or pre-lab experience.
Conclusion: Simulation training of urologic residents improves both knowledge and confidence in prosthetic surgery for male stress urinary incontinence. Furthermore, the benefit is maintained at least 6 months following course completion. In the current climate of educational constraints and limited prosthetic educator availability, simulation courses play an important role in providing valuable hands on education.
Funding: N/A

Poster #115

A 7-MINUTE CONTINUOUS BLADDER IRRIGATION INFORMATIONAL LECTURE SHOWS IMMEDIATE AND SUSTAINED IMPROVEMENT IN NURSING KNOWLEDGE

Patrick Probst, Department of Urology, Kristen Marley, Department of Urology, Howard Hasen, Department of Urology, Christopher Ledbetter, Department of Urology, Anthony Patterson, Department of Urology, Robert Wake, Department of Urology
University of Tennessee Health Science Center - Memphis, TN
Presented By: Kristen Marley, MD

Introduction: Continuous bladder irrigation (CBI) is first line therapy for severe bladder and prostate related hematuria. Besides the potential for bladder injury, other non-clinical but important adverse effects of incorrect CBI use include extended length of hospital stay and a negative impact on patient experience. Often, Registered Nurses (RNs) are unfamiliar with CBI setup, use, and troubleshooting which may increase the likelihood of

undesired and avoidable events. We hypothesized that a short educational session would significantly improve RNs immediate and long-term knowledge of CBI setup, use, and troubleshooting.
Methods: In a single session, Intensive Care Unit (ICU) RNs were queried before and after an educational session focused on CBI. Pretesting consisted of seven multiple choice and true or false questions regarding set-up, use, and troubleshooting. The nurses were blinded to individual pretest scores and correct answers. Education consisted of a 7-minute lecture discussing indications, contraindications, supplies, setup, common issues, troubleshooting, and a brief question and answer session. An immediate and 3-month posttest was then performed to assess understanding of educational content and mirrored the pretest examination.
Results: 36 RNs participated in the study. Pretest scores ranged from 0-71% with a mean of 49%. Only 6 RNs (17%) achieved a score of >70% on the pretest. No RNs achieved a score of 100% on the pretest. After education, immediate posttest scores ranged from 43-100% with a mean of 90%. A score of >70% was achieved in 35/36 RNs (97%). Improvement in test score was observed in 35/36 RNs (97%). Compared to the mean pretest score (49%), the mean posttest score (90%) was significantly improved, $P < 0.0001$. 3-month posttest scores ranged from 57-100% with a mean of 75.8%. A score of >70% was achieved in 30/36 RNs (83%). Compared to the mean pretest score (49%), the mean 3-month posttest score (83%) was significantly improved, $P < 0.0001$.
Conclusion: A 7-minute informational session regarding CBI setup, use, and troubleshooting significantly improves both immediate and long-term knowledge. This educational program has the potential to improve patient safety and decrease adverse events related to CBI use.
Funding: N/A

Poster #116
EVALUATION OF PERIOPERATIVE OUTCOMES AND COMPLICATIONS OF PHEOCHROMOCYTOMA SURGERY: COMPARING ROBOTIC, LAPAROSCOPIC, AND OPEN APPROACHES TO ADRENALECTOMY
Andrew Fang, MD[1], Jennifer Rosen, MD[1], Sejong Bae, MD[2,3], Fabio Tanno, MD[4], Jose Chambo, MD[4], Jonathan Bloom, MD[5], Jennifer Gordetsky, MD[1,6,7], Victor Srougi, MD[4], John Phillips, MD[5], Soroush Rais-Bahrami, MD[1,3,8]
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Presented By: Andrew Fang, MD

Introduction: While multiple studies have demonstrated that minimally-invasive surgical (MIS) techniques are a safe and efficacious approach to adrenalectomy for pheochromocytomas (PC), these studies have only been small comparative studies. The aim of this multi-institutional study is to compare perioperative outcomes between open and MIS, stratified by robotic and conventional laparoscopic, techniques in the surgical management of PC.
Methods: We retrospectively evaluated patients who underwent adrenalectomy for PCs from 2000 to 2017 at three different institutions. Clinical and perioperative parameters were analyzed using *t-test*, chi-square, and Fischer exact statistical measures.
Results: Of the 156 adrenalectomies performed, 26 (16.7%) were in the open group and 130 (83.3%) in the MIS group. Of the MIS procedures, 41 (31.5%) were performed robotically and 89 (68.5%) performed laparoscopically without robotic assistance. Demographic and clinical parameters were similar between the open and MIS groups. Patient, who underwent MIS procedure had a lower complication rate (p=0.04), shorter

hospitalization (p=0.02), shorter operative time (p<0.001), and less blood loss (p=0.002) than those who underwent open surgical resection. Conventional laparoscopic and robotic operative approaches resulted in similar complication rates, length of hospitalization, and blood loss.
Conclusion: Our study is one of the largest cohorts comparing the perioperative outcomes between conventional laparoscopic and robotic adrenalectomies in patients with PC. Our results demonstrate that MIS techniques result in lower morbidity compared to open techniques, while laparoscopic and robotic approaches have similar perioperative outcome benefits.

Table 1: Comparison of clinical and perioperative parameters between laparoscopic and robotic adrenalectomy

Parameters	Lap (n=69, mean +/- SEM)	Robo (n=41, mean +/-SEM)	P value
Age (years)	46.2 ± 17.0	55.9 ± 15.4	0.004
Gender (male/female)	38/31	22/19	0.244
CCI≥1	1.4 ± 1.8	2.2 ± 2.2	0.137
Hypertensive Crisis	35 (39.3%)	8 (15.1%)	0.025
CK Initiation	7 (9.1%)	10 (24.4%)	0.014
Side (L/R/Bilateral)	33/33/3	18/23/0	0.130
BMI	24.5 ± 4.9	29.8 ± 6.5	< 0.001
OR fluids	1468 ± 981	1662 ± 1257	0.660
EBL	134 ± 243	173 ± 404	0.546
OR time	157.9 ± 58.1	210.4 ± 103.0	0.004
OR Start Mean BP	95.2 ± 17.0	87.3 ± 23.1	0.138
OR Max SBP	175.3 ± 25.4	169.8 ± 24.2	0.404
OR Min SBP	86.1 ± 16.7	79.8 ± 17.9	0.134
OR end BP	88.4 ± 16.0	88.0 ± 18.1	0.917
Any Complication	23 (25.8%)	11 (26.8%)	0.905
Low vs High Comp	6 (6.7%)	4 (9.8%)	0.734
ICU Stay	1.5 ± 1.6	0.7 ± 1.2	0.002
Hospital Stay (days)	3.7 ± 3.8	3.0 (2.1)	0.200
Mass (grams)	75.6 ± 105.4	87.0 ± 138.9	0.847
Specimen Size (cm)	6.9 ± 1.9	8.3 ± 2.1	0.001
Tumor Size(cm)	4.8 ± 2.5	6.2 ± 3.6	0.245
Margin	1 (5.6%)	2 (7.4%)	1
PASE	4.8 ± 3.6	3.7 ± 2.1	0.699
Familial (+ admin Endocrine)	29 (36.9%)	4 (9.8%)	< 0.001

Funding: N/A

Poster #117
A SURVEY EVALUATING THE FEASIBILITY AND SATISFACTION OF TELEMEDICINE IN PEDIATRIC UROLOGY
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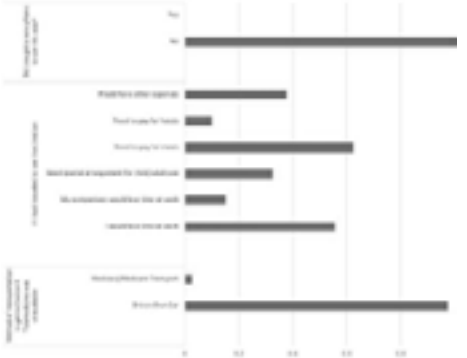
[1]LSU Health New Orleans School of Medicine, [2]LSU Health New Orleans School of Public Health, [3]Children's Hospital New Orleans
Presented By: Brendon J. Gros

Introduction: Telemedicine can be employed as a means to provide care without the need for physical office visits. This can provide patients with increased access to care and decreased costs associated with travel to a clinic appointment. LSU Health and Children's Hospital New Orleans employs the Hale Health App as a HIPAA-compliant telemedicine platform for providing care. This pilot project aims to evaluate the feasibility of the Hale Health App to provide access to care. Additionally, patients' perceptions and satisfaction with the Hale Heath App will be evaulated.
Methods: Data was collected using a 22-item survey administered to parents of patients of a urology clinic in New Orleans, LA from August 2018 to February 2019. The survey includes questions on sociodemographic information as well as specific questions about their experience with the Hale Health App, relationship and communication with the provider, costs involved with seeing a healthcare provider, and the perceived differences between using telemedicine versus a traditional visit with the healthcare provider. Descriptive analysis was performed to evaluate patients' perceptions and satisfaction.
Results: 40 surveys were collected. The typical respondent was a white female with either Medicaid or private insurance that had one telemedicine visit in the past 12 months. Nearly all respondents reported ease of app usage and comfort during the appointment. The majority (80%) of respondents indicated that without the use of telemedicine, they would have had to travel over 50 miles to see the doctor; more than 67% of participants would have spent between $10 and $50 on the travel/transportation

costs. In addition, more than half of respondents indicated that the use of telemedicine prevented them from missing work and incurring costs from purchasing meals during the trip to the pediatric urologist.
Conclusion: Telemedicine in pediatric urology is a successful avenue to treat patients due to both the ease and comfort of using the Hale Health app. Telemedicine may reduce the amount of time patients have to wait for appointments and defray costs of traveling to see the physician, while providing the same level of comfort and communication as an in-person visit.



Funding: N/A

Poster #118
ASSOCIATIONS WITH ADVERSE OUTCOMES FROM PYELOPLASTY
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Presented By: Thomas Michael FitzGibbon, Jr., MD

Introduction: Pyeloplasty is one of the most common major pediatric urological procedures. We studied which factors may alter the outcomes of open and minimally-invasive (laparoscopic and robotic) pyeloplasties.
Methods: De-identified data from 135 pediatric hospitals were queried using the American College of Surgeons National Surgical Quality Improvement Program Pediatric (NSQIP-P) for patients between the ages of 2 and 17 undergoing open or minimally-invasive pyeloplasty between 2012 and 2017. Patients with either missing data or a diagnosis of malignant neoplasm were excluded. Patients were stratified according to age (2-5, 5-10, and 10-17), race, sex, BMI (according to WHO categories), and surgical approach; associations with outcomes were studied using Chi-square and Fischer Exact tests. Primary outcomes included 30-day re-operation rate and 30-day readmission rate; secondary outcomes were operative time and length of stay.
Results: 1,969 patients that met the criteria were identified: 1,042 underwent minimally-invasive procedures and 927 underwent open pyeloplasty. Overall readmission and reoperation rates were 2.3% and 6.5%, respectively. Patients with ages of 5-10 demonstrated an increased risk of re-operation (OR 1.002, $p < 0.05$) and ages 10-17 were associated with decreased risk of readmission (OR 0.96, $p < 0.01$). The most common procedure was cystoscopy with stent insertion (11/46). Operative times were increased with increasing age (171 min, 183 min and 205 min; $p < 0.001$) and with increasing BMI (181 min, 198 min, 213 min, and 219 min; $p < 0.001$) for all approaches. Minimally invasive approaches had an increased operative time ($p < 0.001$) and

decreased hospital stay ($p < 0.001$). Operative time was longer for open pyeloplasty with increasing BMI ($p = 0.001$), but not for a minimally-invasive approach ($p = 0.264$).
Conclusion: Overall pyeloplasty is a safe operation with low re-operation and infrequent readmission rates. Patients aged 5-10 are more likely to have a second operation and ages 10-17 are less likely to be readmitted. Overall, increasing age and BMI were associated with significantly increased operative time. Increasing BMI significantly increases operative time for open pyeloplasty, but does not affect length of stay, 30-day readmission rate, and 30-day re-operation rate. Minimally invasive approaches may be superior in overweight and obese patients.
Funding: N/A

Poster #119
MITROFANOFF VS SUPRAPUBIC BUTTON CYSTOTOMY IN PEDIATRIC UROLOGY: A COST AND COMPLICATION ANALYSIS
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Presented By: Colin S. Linke, DO

Introduction: The Mitrofanoff procedure has been a standard for management of chronic urinary retention when CIC per urethra is not feasible. However, there is significant risk and complications associated with this surgery and it has a limited life-span in most. Suprapubic button cystotomy is now being utilized as a less invasive alternative to a Mitrofanoff in select patients. We compared the direct costs and complication rates documented in the literature of the Mitrofanoff procedure versus our center's experience with suprapubic button cystotomy.
Methods: A retrospective analysis was performed from 2016-2019 to identify all patients who had a suprapubic button cystotomy at our institution. Indications and complications were recorded. Direct reimbursement of catheter supplies (150 per month) and the cost of the suprapubic button (1 per month) were obtained from the Louisiana Medicaid fee schedule to act as a surrogate of cost.
Results: Eleven unique patients with twelve button placements were identified (Table 1). The long term supply cost of having a Mitrofanoff lies in the monthly catheter costs. Assuming the use of 5 catheters per day, the cost was determined to vary between $190-$675 per month depending on the catheter brand and accessary supplies needed. Moreover, the monthly cost to exchange a suprapubic button was found to be $110 for a savings of $80-$565 per month.
Contemporary literature shows between 23-40% of Mitrofanoffs to have at least 1 post-operative complication. 20% experienced difficult catheterization, 12.6% experienced stomal stenosis, 4.2% experienced stomal leakage, and 1.7% experienced stomal prolapse. Our experience with suprapubic button cystotomy shows a total major complication rate of 0% (Table 1.) Five patients (5/12) experienced a solitary minor urinary tract infection. One patient (1/12) had minor excess granulation tissue surrounding the button site which responded fully to betamethasone treatment.
Conclusion: Suprapubic button cystotomy, in the properly selected patient, should be given serious consideration as a cost effective, minimally invasive, and convenient alternative to Mitrofanoff as either a short term or long term solution.

Funding: N/A

Poster #120
ASSOCIATION BETWEEN ETHNICITY AND SKIN COMPLICATIONS FOLLOWING HYPOSPADIAS REPAIR
Hasan Jhaveri, University of Florida, Jeremy Bergamo, University of Florida, Christopher Bayne, University of Florida, Romano DeMarco, University of Florida
Department of Urology
Presented By: Hasan Jhaveri

Introduction: Intrinsic differences in skin with increased melanin, particularly African Americans, Latinos, and Asians, is associated with a robust inflammatory response following surgery and increased risk for postoperative scarring. Based on anecdotal experience, we surmised that boys with more pigmented skin would have an increased rate of skin complications following hypospadias repair.
Methods: We performed an IRB approved retrospective analysis of boys at our institution who had a primary hypospadias repair between 1/2014-1/2019 by a single surgeon (RD). Patients were assigned to the following racial groups, Caucasian, African American, Latino/Hispanic, Asian, and other, based on a combination of self-identification and EMR data/photography.
Results: A total of 141 boys with an average age of 16 months (median 7 months) at the time of primary hypospadias repair were reviewed. Eighty-one (57%) were identified as Caucasian, 39 (28%) were African American, 5 (3%) were Asian, and 8 (6%) were other. Twenty-eight (20%) boys had skin complications. Twenty (14%) were considered minor and involved ventral skin scarring which improved with application of corticosteroid ointment. Of these patients 11 (55%) were Caucasian and 9 (45%) non-Caucasian. Eight (6%) patients required additional surgery for a skin related complication. Of these children, 7 (88%) were non-Caucasian. Three of these patients (African American, Caucasian, other) required minor surgery, circumcision revision, takedown of penile skin bridges, and recurrent chordee correction. Five patients (3 African American, 1 Latino, 1 other) had a serious skin complication involving ventral skin dehiscence and/or skin loss following second stage hypospadias repair using Byars flaps requiring complex skin flap creation or full-thickness skin grafting for ventral shaft coverage.
Conclusion: We found a higher rate of skin complications following hypospadias repair in ethnic groups with increased melanin content, particularly in proximal hypospadias repairs. Minor skin complications responded well to corticosteroid ointment. Skin dehiscence following a second stage hypospadias repair occurred only in boys with increased melanin content. These findings warrant consideration of an alternative ventral skin resurfacing technique to Byars flaps in boys with more pigmented and limited ventral shaft skin.
Funding: N/A

Poster #121
HOW RACE, DEMOGRAPHICS, AND SOCIOECONOMIC STATUS IMPACT TIME TO PRESENTION FOR TREATMENT OF GENITAL PAIN IN PEDIATRIC MALES
Katherine Fratino[1], David Nelwan[1], Deepak Ayyala[1], Rabii Madi[1], Sherita King[1], Durwood Neal[1], Zachary Klaassen[1], Martha Terris[2], Bradley Morganstern[1]
[1]Medical College of Georgia, Augusta University, Augusta, GA, [2]Medical College of Georgia, Augusta. University, Augusta, GA
Presented By: Katherine Fratino, MD

Introduction: Prior studies of patients with testicular torsion have noted the association of delayed time to presentation from symptom onset with higher rates of orchiectomy. At our institution, African American male patients 18 years old evaluated for testicular torsion seem to have delayed presentation to the Emergency Department compared to Caucasian males, engendering the question of whether race and socioeconomic status play a role in the time to presentation for all genital pathology.
Methods: This retrospective chart review evaluated all male patients 18 years old who received ICD-10 diagnoses (or the ICD-9 equivalents) of N43, N44, N45, N49, or N50 within the past 5 years at our institution. All patients whose presentations could be

determined as acute (<24 hours), subacute (<2 weeks), or chronic (>2 weeks) were included, as well as their specific time to presentation if known. Two-way comparison between factors was performed using Pearson's chi-squared test.
Results: A total of 552 patients met entry criteria, of which 44 were testicular torsion patients. Among testicular torsion patients, African Americans were equally likely to present acutely or subacutely, whereas Caucasians and patients of other races were more likely to present acutely (P=0.04). Among the torsion patients whose specific time of symptom onset was known, African Americans delayed medical attention compared to Caucasians (49.66 ± 57.45 vs 11.53 ± 16.30 hours, P=0.01). However, when comparing race with overall time to presentation for the combined genital pathology diagnoses, there was no statistically significant difference between African Americans, Caucasians, and Others. When comparing race vs. orchiectomy in those with testicular torsion, there was no statistical significance found. Interestingly, patients who had previously been given education about genital pathology were more likely to present acutely/subacutely vs. those who had not, who had a higher chance of being diagnosed as chronic (P= 0.005).
Conclusion: African American patients, in comparison with other races, present later for evaluation of testicular torsion. However, no statistical significance was found when comparing race vs. orchiectomy, which could be due to selection bias. Overall patients who were educated about genital pathology were more likely to seek early medical care, and thus education directed towards pediatric African American patients may prevent morbidity.
Funding: n/a

Poster #122
IMPACT OF HOSPITAL TRANSFER ON TESTICULAR TORSION OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS.
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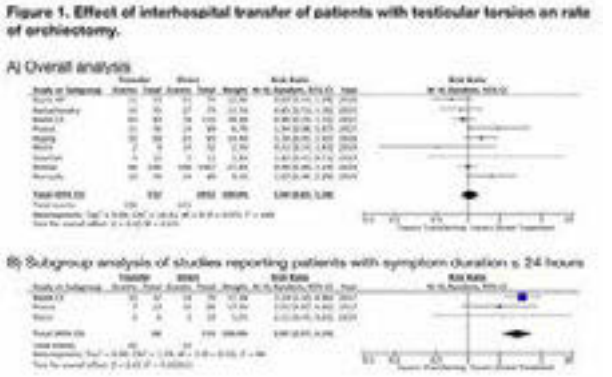
Presented By: Elizabeth Kwenda, BS

Introduction: Testicular torsion is an emergent condition requiring prompt treatment. Previous studies have suggested transfer of pediatric testicular torsion cases might be detrimental to patient outcomes. However, no study has quantitatively analyzed all literature reporting outcomes for transferred torsion patients. The aim of this study was to elucidate the impact of hospital transfer on pediatric testicular torsion outcomes through a systematic review and meta-analysis.
Methods: A predefined study protocol was developed according to PRISMA. A comprehensive literature review of articles investigating outcomes for pediatric testicular torsion for transferred and non-transferred patients with orchiectomy as the primary outcome was conducted by systematically searching PubMed and Embase. Potential studies were screened against a predefined study protocol registered with Prospero. Meta-analysis using a fixed random effects model was performed using Review Manager 5.3 software.
Results: Of 18 eligible studies, 9 retrospective studies comprised of 2,564 patients (532 transferred and 2032 non-transferred) were suitable for quantitative analysis. Main analyses did not show transfer status having a significant effect on torsion outcomes when compared to non-transferred patients (RR 1.04 [95% CI 0.85-1.28]). Subgroup analysis for torsion patients presenting within 24 hours of symptom onset favored testicular salvage (RR 2.95 [95% CI 2.07-4.19]), with delay of treatment greater than 24 hours being almost three times more likely to report orchiectomy as the primary outcome.
Conclusion: In this meta-analysis, interhospital transfer did not affect outcomes for pediatric patients with testicular torsion. However, time from symptom onset to hospital presentation significantly affected testicular salvage rates. This review highlights the importance of symptom duration as a prognostic marker. Future studies should focus on interventions to help shorten the time to initial hospital presentation and establishing

guidelines to help physicians assess the risk to benefit ratio for patients when considering transfer for torsion cases.



Funding: N/A

Poster #123

COMPARISON OF ROBOTIC-ASSISTED LAPAROSCOPIC PROSTATECTOMY: SP VERSUS XI, A SINGLE SURGEON EXPERIENCE

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Presented By: Matthew J. Watson, DO

Introduction: There is a paucity of data regarding Single Port (SP) robotic-assisted laparoscopic prostatectomy (RALP). Our objective was to measure SP RALP outcomes and then compare them to XI RALP outcomes. Finally, we sought to examine whether SP operative outcomes improved as a function of time as the surgeon became increasingly familiar with the platform.
Methods: All patients had biopsy confirmed prostate cancer. All surgeries were performed by a single surgeon. The cohort of 46 consecutive SP cases performed from December 2018 to July 2019 were selected for analysis. The 46 consecutive XI cases were selected for comparison, with these surgeries occurring between March 2018 and July 2019. Patients with previous prostate cancer therapies were excluded. Variables were analyzed using SPSS software using paired t-tests and chi squared tests, while regression analysis was performed on Graphpad.
Results: There were no statistically significant differences between the SP and XI cohorts in terms of mean age (64 v 64.6 years, p=0.69), average BMI (31.3 v 29.8 kg/m2, p=0.31) and ASA score dichotomized as 2 or 3 (x2=2.07, p=0.15). There were no differences in the mean procedure time (154.2 v 159.5 min, p=0.97) and estimated blood loss (159.8 v 153.6 mL, p=0.88). On histopathological analysis there were no meaningful differences in grade group, pathological tumor stage or positive surgical margins between the two cohorts (x2=4.9, p=0.30, x2=1.6, p=0.21 and x2=1.6, p=0.31, respectively). The average number of nodes removed were similar (3.2 v 3.7 nodes, p=0.34). Two patients in each cohort experienced a Clavien grade 2 and Clavien grade 3a complications. Mean length of stay was similar (1.5 v 1.6 days, p=0.81). No trends emerged for SP procedure time, EBL, LOS and number of nodes as a function of time.
Conclusion: To date, this reports on the largest cohort of patients who underwent SP RALP. It is the first study to compare perioperative variables between the SP and XI platforms. There were no statistically significant differences seen. Furthermore, as a function of time, there was not a meaningful trend seen in SP operative variables. These findings provide evidence that surgeons competent on the XI platform can confidently perform SP RALPs without compromising patient outcomes. **Funding:** N/A

Poster #124

COMPARISON OF PERIOPERATIVE OUTCOMES BETWEEN SINGLE-PORT AND MULTI-PORT ROBOTIC ASSISTED RADICAL PROSTATECTOMY: A SINGLE INSTITUTIONAL EXPERIENCE

Andrew Fang, MD[1], Ava Saidian, MD[1], Ornin Hakim[2,3], Cristina Magi-Galluzi, MD[4], Jeffrey Nix, MD[1,3], Soroush Rais-Bahrami, MD[1,3,5]

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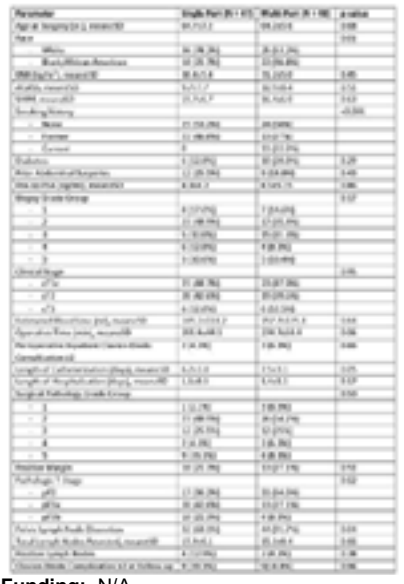
Presented By: Ava Saidian, MD

Introduction: Surgical approaches to the radical prostatectomy (RP) have evolved over the past few decades due to advances in minimally-invasive surgery, with the most common approach involving multi-port (MP) robotic systems including the da Vinci® Si and Xi (Intuitive Surgical, Sunnyvale, Ca, USA) robotic platforms. The recent FDA approval of the first single-port (SP) robotic system, the da Vinci® SP robotic platform, has led to a few small cohort studies supporting its safety and feasibility for RP in patients with prostate cancer. However, there is limited data on its perioperative outcomes compared to the standard MP robotic approach.

Methods: All patients who underwent RP at our institution between October 2018 and June 2019 by two high-volume robotic surgeons specializing in urologic oncology were retrospectively reviewed. Preoperative demographic data, operative parameters, and perioperative outcomes were collected and analyzed using t-test, chi-square, and Fischer exact statistical measures.

Results: A total of 95 patients who underwent RP at our institution were included in our study with 47 patients using the SP approach and 48 with the MP approach. Demographic and clinical parameters including age, body mass index (BMI), history of prior abdominal surgery, and biopsy Grade Group were similar between the two groups. No significant differences in estimated blood loss (169.2±114.2 versus 157.7±125.4ml, p=0.64), operative time (255.9±44.1 versus 274.7±50.4min, p=0.06), length of hospitalization (1.1±0.5 versus 1.4±1.1 days, p=0.17), and rate of perioperative inpatient Clavien-Dindo complications 2 (4.3% versus 6.3%, p=0.66) were noted between the SP and MP approaches, respectively. Furthermore, no significant difference was noted in pathologic positive margin rates between the SP and MP approaches (p=0.51) although there was a significantly higher pathologic T-stage in the SP cohort (p=0.02).

Conclusion: The da Vinci SP robotic system is not only a safe and feasible approach to RP but has comparable operative and perioperative outcomes to the standard MP robotic approach. However, further research with longer follow-up and larger population-based data is needed to establish non-inferiority between the two robotic approaches to RP.



Funding: N/A

Poster #125
OPIATE-FREE POST-OPERATIVE PATHWAY AFTER ROBOTIC RADICAL PROSTATECTOMY: FEASIBILITY IN A VETERANS AFFAIRS MEDICAL CENTER (VAMC)

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Wake Forest School of Medicine
Presented By: Rahul Dutta, MD

Introduction: Minimizing post-operative narcotic use has become increasingly salient in Veterans, a population that is both particularly susceptible to substance abuse disorders and is often prescribed opiate pain medications. We sought to evaluate the feasibility of an opiate-free pain control regimen by measuring post-operative pain in patients undergoing robotic radical prostatectomy (RRP).
Methods: Data were prospectively collected from patients undergoing RRP at a single center from October 2018 – August 2019. Prior to January 2019, patients received either tramadol or another opiate (either hydrocodone-acetaminophen or oxycodone-acetaminophen) post-operatively. After 2019, an opiate-free pathway including scheduled Tylenol, gabapentin, and ketorolac was instituted for all patients undergoing RRP. Pain scores (scale 0-10, with 0 being no pain and 10 being the worst pain imaginable) were collected in a on both post-operative day 0 and 1.
Results: Prospectively collected data were analyzed from 28 patients, 5 of which who were non opiate-free and 23 who utilized the opiate-free pathway. There were no differences in demographics or pre-operative variables between patient cohorts, including prostate cancer risk stratification (all $p < 0.05$). Additionally, there were no differences between pathology and peri-operative variables, including patients' Gleason sum by RRP specimen, estimated intra-operative blood loss, or length of hospital stay (all $p < 0.05$). Finally, there was no statistical difference in average post-operative day 0 pain scores between the non-opiate free (score 2.6) and opiate free (1.3) cohorts ($p = 0.2209$). The same held true for post-operative day 1 pain scores (0 vs 0.4, $p=0.4303$). There was one complication > Clavien II in the opiate-free cohort, a single patient requiring operative reduction of a port site hernia without bowel resection.

Conclusion: A narcotic-free pathway may be safely utilized post-operatively for Veterans undergoing robotic radical prostatectomy without compromising patient pain control.

Variable (average unless otherwise specified)	Non-opiate free	Opiate free	P-value
N	5	23	
age (years)	62.6	65.5	0.3295
Body Mass Index	26.4	28.0	0.8609
Race			0.5600
African American	3	10	
Caucasian	2	13	
Prostate cancer risk category			0.1306
Low	0	4	
Intermediate	5	12	
High	0	7	
ASA Score			0.8928
II	2	9	
III	3	13	
IV	0	1	
Pre-operative PSA (ng/mL)	8.6	9.8	0.6107
Prostate volume by transrectal ultrasound (gm)	30.3	38.4	0.3656
Gleason sum at RALP			0.3464
6	0	3	
7	3	14	
8	0	2	
9	2	2	
RRP specimen weight (gm)	29.0	40.3	0.0643
Estimated blood loss (cc)	100	137	0.4129
Length of stay (days)	1.4	1.8	0.6603
Post-op day 0 pain score	2.6	1.3	0.2309
Post-op day 1 pain score	0.6	0.4	0.4303

Funding: N/A

Poster #126

URETHRO-VESICAL ANASTOMOTIC DISRUPTION: STRATEGIES FOR MANAGING DELAYED HEALING OF URETHRO-VESICAL ANASTOMOSIS FOLLOWING RADICAL ROBOTIC PROSTATECTOMY

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Presented By: Laith Alzweri, MD, MRCS, FESCM

Introduction: Radical prostatectomy is a well-established treatment option for patients with localized prostate adenocarcinoma. Currently, there is no consensus in the recent published literature on the management of urethro-vesical anastomotic leak (UVAL) following radical prostatectomy. Multiple factors have been associated with increased risk of this seemingly underreported complication, including, but not limited to, pelvic anatomy variations, developing pelvic hematoma, obesity, surgeon's level of surgical skills and experience, the size of the prostate gland, TNM stage of the prostate cancer and, potentially, the surgical approach: open, laparoscopic or robotic, in addition to the surgical technique and suture material used to reconstruct the urethro-vesical anastomosis (UVA).
Methods: We performed a retrospective analysis of our Department's experiences in performing minimally invasive radical prostatectomy since 2002 and how we managed the rare cases of UVAL. We highlighted two recent cases of UVAL and their surgical management strategies, while reviewing the related recent published literature.
Results: The underreported UVAL incidence in the literature varies significantly across different studies (4.5% -7.5%) and (25.7%) post salvage radical prostatectomy procedures; it was (0.3% - 15.4%) for the period from 1985-2011. We recommend following our suggested flow chart with risk stratification of cases into low and high risk, early recognition of UVAL in the post-operative course, and prompt utilization of surgical options to minimize the risk of long-term complication and improve outcomes.
Conclusion: UVAL could be underreported due to lack of consensus on definitions and subsequent management. Partial disruption of the UVA is monumentally different from complete disruption. Any adverse outcome of the UVA poses a significant long-term consequence for the patient. Minimal leaks can be managed with maximum drainage and prolonged catheterization, while significant leak and disruption would require surgical intervention to fully drain the urinoma, removed the devitalized tissue affected by the urinoma and redo the anastomosis.

Funding: N/A

Poster #127

ANALYZING THE ASSOCIATION BETWEEN RENAL TUMOR COMPLEXITY AND FUNCTIONAL VOLUME LOSS (FVL) IN ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)

Essa Bajalia[1], Kevin Parikh[1], Daniela Haehn[1], Amanda Kahn[1], Colleen Ball[2], David Thiel[1]

[1]Department of Urology, Mayo Clinic, Jacksonville, FL, USA, [2]Division of Biomedical Statistics and Informatics, Mayo Clinic

Presented By: Essa Michael Bajalia

Introduction: FVL is defined as the amount of healthy parenchyma excised during RAPN. We hypothesized that an increase in tumor complexity would lead to an increase in FVL during RAPN.

Methods: We evaluated 406 consecutive RAPN performed by a single surgeon between February 2008 through April 2019. The standard formula for calculating FVL was used: FVL -
was defined as the RENAL score of patient's tumors. RENAL score was categorized as easy (4-6), moderate (7-9), or hard (10-12). P-values less than 0.05 were considered statistically significant without adjustment for multiple testing. In addition to age and sex, we controlled for the following factors based on their known relationship with FVL: body mass index (BMI), American Society of Anesthesiologists (ASA) Score, and Mayo Adhesive Probability (MAP) Score. The adjusted expected difference in the geometric mean of FVL estimates were calculated using a multivariable linear regression model.

Results: Among the 406 patients included in the study, 252 (62.1%) were male, median age was 63 years (range, 22 to 84), and median FVL was 9.9 mL (IQR 3.9 to 17.7 mL). Of the 406 patient's RENAL scores, 122 (30%) were categorized as easy, 214 (52.7%) as moderate, and 70 (17.2%) as hard. The median FVL and IQR for each RENAL category was 3.7 mL (2.0, 7.9), 12 mL (5.7, 19.4), and 16.2 mL (7.9, 24.3), respectively. All p values for median FVL were <0.001. The association of RENAL score and tumor size with FVL remained statistically significant following multivariable analysis (P<0.001). The adjusted % difference in the geometric mean of FVL (95% CI) was 199% when comparing moderate to easy RENAL scores and 261% when comparing hard to easy RENAL scores.

Conclusion: Increased tumor complexity and tumor size is associated with higher FVL during RAPN resulting in greater loss of healthy renal tissue in more complex tumors.

Funding: N/A

Poster #128

RELATIONSHIP OF FUNCTIONAL VOLUME LOSS (FVL) TO POST-OPERATIVE RENAL FUNCTION FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)

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Presented By: Essa Michael Bajalia

Introduction: FVL is the amount of healthy renal parenchyma excised in addition to the renal mass during RAPN. The aim of this study was to determine if an increase in FVL leads to an adverse effect on estimated glomerular filtration rate (eGFR) following RAPN.
Methods: We evaluated 406 consecutive RAPN performed by a single surgeon between February 2008 and April 2019 (2 kidney model). The standard formula for calculating FVL was: -
was grouped into four categories: 3.9 mL, 4.0-9.9 mL, 10.0-17.7 mL, and >17.7 mL. eGFR was evaluated preoperatively, postoperative day 1 (POD1) and 1 month postoperatively. Postoperative eGFR was considered to be returned to baseline values if it was within 10% of the preoperative value. Longitudinal mixed effects regression models with random person effects for intercepts and slopes were used to evaluate the association of FVL with eGFR at POD1 and 1 month postoperatively. Age, sex, body mass index, and R.E.N.A.L. scores were adjusted for as potential confounding variables in multivariable analysis. P-values less than 0.05 were considered statistically significant without adjustment for multiple testing.
Results: Among the 406 patients included in this study, 252 (62.1%) were male and median age was 63 (range, 22 to 84). Postoperative eGFR return to baseline values for all four FVL groups were as follows: 3.9 mL (57% POD1, 65% 1 month postoperatively), 4.0-9.9 mL (39% POD1, 59% 1 month postoperatively), 10.0-17.7 mL (29% POD1, 50% 1 month postoperatively) and >17.7 mL (26% POD1, 25% 1 month postoperatively). In single variable and multivariable analysis, higher FVL was associated with more severe changes in eGFR at POD1 and 1 month after RAPN (P 0.001).
Conclusion: Increased FVL during RAPN is associated with a greater decline in renal function at day 1 and 1 month postoperatively.
Funding: N/A

Poster #129

EVALUATION OF ANGIOTENSIN CONVERTING ENZYMES INHIBITORS (ACEIs), ANGIOTENSIN RECEPTOR BLOCKERS (ARBs), AND STATINS ON POSTOPERATIVE ESTIMATE GLOMERULAR FILTRATION RATES (eGFR) FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY (RAPN)

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Presented By: Daniela Andrea Haehn, MD

Introduction: This study aimed to evaluate the association between the use of ACEIs/ARBs and statins preoperatively and changes in eGFR post-RAPN.
Methods: We evaluated all patients who underwent RAPN at our institution from February 2008 through April 2019. Patients who underwent bilateral RAPN were excluded. A linear regression model was used to evaluate the association of ACEIs/ARBs and statin use with preoperative eGFR(mL/min/1.73m2). Associations of ACEIs/ARBs and statin use with postoperative eGFR was explored using a linear mixed-effects regression model with random patient-specific intercepts. We included eGFR measurements at the following time-points: preoperatively, POD1, 1-month postop, 6-

months postop, and 12-months post-op. P-values <0.05 were considered statistically significant.
Results: 69/389 (17.7%) patients were on preoperative ACEIs/ARBs therapy, 65(16.7%) were taking statins, 102(26.2%) were taking ACEIs/ARBs and statins, and 153(39.3%) were not taking ACEIs/ARBs or statins. Patients taking statins were older when compared with those taking ACEI/ARBs, ACEIs/ARBs and statins, or neither of the medications [66(8.6)vs.63.1(9.5)vs.65.9(8.0)vs.54.5(12.1)]. Patients taking ACEIs/ARBs and statins had higher rates of comorbidities when compared with those taking ACEI/ARBs, statins, or neither of those medications, including diabetes mellitus (40.2%vs.21.7%vs.18.5%vs.11.8%) and hypertension (99%vs.91.3%vs.56.9% vs.24.2%). Preoperative eGFR was lower among those taking ACEIs/ARBs [74(18.3)] or statins [74.6(17.2)] compared to those patients taking neither of those medications [85.2(18.9)], p<0.001). There was no evidence of a difference in postoperative eGFR between patients taking both statins and ACEIs/ARBs, ACEIs/ARBs only, and those taking statins only, P>0.36. Among those taking neither statins nor ACEIs/ARBs, the mean change in eGFR from baseline was -9.99(95% CI, -11.92 to -8.07) at POD1, -6.96(95% CI, -9.00 to -4.92) at 1 month postop, -8.30(95% CI, -10.55 to -6.06) at 6-months postop, and -10.3 (95% CI, -12.83 to -7.81) at 12-months post-op. There was no evidence of an association of statin or ACE/ARBs use on change in eGFR postoperatively (Table 1, likelihood ratio test P>0.99).
Conclusion: Patients on ACEIs/ARBs only, ACEIs/ARBs and statins, and statins only undergoing RAPN had lower eGFR preoperatively compared to those not taking those medications. There was no evidence of an association between preoperative ACEI/ARB and statin use and change in post-RAPN eGFR.

Table 1. Association of ACE Is/ARBs and Statin Use on Postoperative Renal Function, coefficient (SE)

	Association of ACE/ARB and Statin Use on Postoperative Renal Function, coefficient (SE)			
	Neither ACE/ARB nor Statin	ACE/ARB Only	Statin Only	ACE/ARB and Statin
POD1	Reference	-4.94 (1.74)	-1.66 (1.8)	-1.84 (1.51)
1 Month postop	Reference	-4.14 (1.97)	-0.51 (1.91)	-1.01 (1.66)
6 Months postop	Reference	-1.51 (2.09)	-0.87 (2.11)	-0.35 (1.76)
12 Months postop	Reference	-2.16 (2.34)	-0.14 (2.43)	-0.35 (1.97)

Funding: N/A

Poster #130
ASSOCIATION OF RADIOMICS AND PATIENT CHARACTERISTICS WITH FORMATION OF PSEUDOANEURYSM FOLLOWING ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY
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Presented By: Ashley Shumate, MD

Introduction: To evaluate radiomic data (R.E.N.A.L. score, Contact Surface Area [CSA] score, and Mayo Adhesive Probability [MAP] score) in addition to patient and operative variables with their association of formation of pseudoaneurysm following robotic-assisted partial nephrectomy (RAPN).
Methods: We analyzed 405 consecutive RAPNs performed by a single surgeon at a tertiary center. We evaluated patient variables, intraoperative outcomes, and tumor variables including tumor radiomic data (R.E.N.A.L. score including each component, CSA scores, and MAP scores) for their association with pseudoaneurysm after RAPN. We used single variable logistic regression models to estimate unadjusted odds ratios (OR) and 95% confidence intervals (CIs). P 0.05 was considered statistically significant.
Results: Among 405 patients, 17 (4.2%) had a pseudoaneurysm after RAPN. There was no association between pre-operative patient characteristics (age [p=0.61], sex [p=0.46], body mass index [p=0.58]; diagnosis of hypertension [p=0.47], cardiovascular disease [p=0.39], or diabetes mellitus [p=0.71]; creatinine [p=0.08], or hemoglobin

[p=0.57]) and pseudoaneurysm after RAPN. There was no association between R.E.N.A.L. score (p=0.30), MAP score (grouped 0-3 and 4-5) (p=0.48), CSA (p=0.49), renal mass size (p=0.68), tumor depth (p=0.22), or proximity of renal mass to collecting system (p=0.75) with formation of pseudoaneurysm following RAPN. There was no association of intraoperative variables, including collecting system entry (p=0.98), hemostatic surgical bolster use (p=0.14), total operative time (p=0.48), warm ischemia time (p=0.71), estimated blood loss (p=0.23), intraoperative complications or conversion to open partial nephrectomy (p=0.81), or final pathology (p=0.44) with pseudoaneurysm after RAPN.
Conclusion: In a large single-surgeon cohort, there is no radiomic data, patient characteristic, or operative variable that predicts pseudoaneurysm following robotic partial nephrectomy.
Funding: N/A

Poster #131
USE OF INTRAOPERATIVE INDOCYANINE GREEN PERFUSION TESTING IN RADIATION-RELATED URINARY DIVERSION
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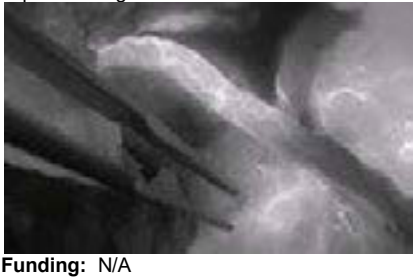
University of South Florida
Presented By: Samantha C. Nealon, MD

Introduction: Reconstructive urologic procedures are dependent upon adequate blood flow. Radiation therapy causes poor vascularity and fibrosis. Failure of repair or stricture in this setting is thought to be related to poor blood flow. Objective measure of vascularity is lacking, especially of small blood vessels. We present a novel application of Indocyanine Green Fluorescence Angiography (ICGFA) perfusion testing for this patient population.
Methods: Nine patients, previously radiated for pelvic malignancy, underwent various reconstructive urologic procedures including cystectomy with bowel conduit and revision of bowel conduits. 2mL of 5% Indocyanine Green (ICG) was given intravenously and a SpyPhi (Stryker, Kalamazoo, MI, USA) ICG-detection camera with sterile probe was used for angiography. Intraoperatively, this technique was used to assess the blood flow to the ureters, bowel segments including anastomoses, and omentum. Tissue viability was first assessed visually, followed by ICGFA.
Results: 3/9 patients had a change in their management based on ICGFA. Despite normal visual appearance, two patients had additional ureter resected to achieve well-perfused uretero-intestinal anastomoses. Similarly, one patient had re-maturation of a colon conduit and omentectomy based on poor ICG uptake. All patients had uneventful postoperative courses without uretero-intestinal anastomotic, bowel anastomotic, or stomal complications.
Conclusion: Indocyanine Green Fluorescence Angiography is a useful adjunct to visual inspection to assess the blood flow of radiated urological reconstructions at the time of surgical intervention. Further study is needed to see if changes in management result in improved long-term outcomes.



Funding: N/A

Poster #132
EFFICACY AND SAFETY OF ALVIMOPAN USE IN BENIGN URINARY TRACT RECONSTRUCTION
Patrick Hensley[1], Margaret Higgins[1], Alison Rasper[1], Ali Ziada[1], Shubham Gupta[2]
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Presented By: Patrick Hensley, MD

Introduction: The use of alvimopan, a peripheral mu-opioid receptor antagonist, to expedite gastrointestinal recovery after cystectomy and urinary diversion for oncologic indications is well established and part of the AUA Guideline. Its use in benign urinary tract reconstruction has not been described. We analyzed outcomes and post-operative complications in treatment and non-treatment groups undergoing benign urinary tract reconstruction.
Methods: Patients who underwent urinary reconstruction utilizing harvested bowel segments for benign conditions from 12/2014-7/2019 were retrospectively reviewed. From 5/2018-7/2019 our institution approved perioperative alvimopan in the aforementioned patients (N=11), who were then paired 2:1 with patients from a retrospective cohort of alvimopan-eligible patients who did not receive the drug (N=22). Patients were paired by (1) type of reconstruction and (2) presence of neurogenic bowel/bladder (NBB). Statistical analysis was performed using the Fisher's Exact test for proportions and the Kruskal-Wallis test for comparison of medians.
Results: Of the 70 patients who underwent urinary reconstruction during the study periods, 46 patients (66%) were eligible to receive alvimopan. 11 patients were treated with perioperative alvimopan, including 7 supraptrigonal cystectomies with ileal conduit urinary diversion, 2 continent cutaneous pouches/augments, 1 ileocystoplasty with tapered catheterizeable channel, and 1 ileal ureter interposition. Neurogenic bladder comprised 4/11 (35%) of study patients. Length of stay was shorter for the alvimopan group compared to the non-alvimopan group (median 5 days [IQR 4-5 days] vs. 8 days [IQR 6-11 days]; P=0.002). Time to first bowel movement was also shorter for the alvimopan group (median 4 days [IQR 3-4 days] vs. 6 days [IQR 4-7], P=0.001). No patient treated with avimopan required an NG tube for post-operative ileus compared to 7 (32%) patients requiring NG tube decompression in the non-treatment group (P=0.067). Clavien 3 post-operative complications and 30 day readmissions between alvimopan-treated patients and non-treated patients were similar (10% complication rate for both groups, P=1.0; 27% vs. 18% readmission rate, P=0.066, respectively).
Conclusion: The use of perioperative alvimopan in benign urinary tract reconstruction expedited return of bowel function and decreased length of stay compared to a matched cohort of untreated patients. Further investigation into physiologic differences in response to alvimopan in the NBB is necessary.
Funding: N/A

Poster #133
ROBOTIC REVISION OF URETERO-ILEAL ANASTOMOTIC STRICTURE FOLLOWING ROBOTIC RADICAL CYSTECTOMY.
Rabii Madi, MD, MBA
Augusta University Health
Presented By: Rabii Madi, MD, MBA, FACS

Introduction: Stricture at the uretero-ileal anastomosis is a well-known complication of radical cystectomy. We report our experience with robotic revision of uretero-ileal stricture in 5 patients who developed an anastomotic stricture that failed endoscopic or radiologic intervention.
Methods: From January 2012 to May 2019, 5 patients underwent robotic revision of uretero-iliac anastomotic stricture. All those patients had previous robotic radical cystectomy for bladder cancer and subsequently developed stricture that failed endoscopic intervention. Four patients had ileal conduit and one patient had neobladder. All anastomosis were Bricker type except of one Wallace.

Results: All five patients had successful repair of the stricture. The diseased ureteral segment was excised and a fresh uretero-ileal anastomosis was made. There was no intra-or peri-operative complications in all 5 patients. Median console time was 130 minutes, and median length of stay was one day. One patient had recurrence of the stricture which was managed by endoscopic dilatation.
Conclusion: Robotic revision of uretero-ileal anastomotic stricture is safe, feasible, and should be considered as a permanent solution for strictures that fail endoscopic intervention.
Funding: N/A

Poster #134
THE ROLE AND OUTCOMES OF ILEAL URETER INTERPOSITION IN CONTEMPORARY PRACTICE
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Presented By: Margaret M. Higgins, MD

Introduction: Pedicled bowel segments have been used to replace complex ureteral strictures for over a century; however there is a paucity of large cohort data in a contemporary setting. Our aim is to add our recent experience using ileal ureter interposition to the growing body of research in the modern surgical era.
Methods: An IRB-approved, retrospective database was queried to identify all patients who underwent an ileal ureter interposition (CPT 50840) between July 2014 and July 2019 at our institution. Cases were performed by a single surgeon. Bilateral repairs were performed using a reverse 7 technique and unilateral repairs were performed with or without omental flaps or ileocystoplasties, depending on bladder capacity. Data on etiology, patient characteristics, intraoperative details and outcomes were collected. We performed subgroup analysis comparing patients with history of radiation against non-radiated patients.
Results: 11 patients underwent ileal ureteral interposition, 9 females and 2 males. Median age at time of surgery was 56 years. Four patients had combination iatrogenic, radiation, and infectious etiologies. 3 were primarily radiation related and 4 were purely iatrogenic injuries. Median Charlson Comorbidity Index was 3. Patient had percutaneous nephrostomy tubes placed for ureteral rest in 8/11 cases, for an average of 17.3 weeks prior to reconstruction. Nine were unilateral, three bilateral; and three patients had combination surgery with colorectal or plastic surgery. The median time to return of bowel function was 5 days, and median length of hospital stay was 8 days. Median length of follow-up was 5mo. There were 2 complications among the cohort: one was an anastomotic leak that required nephrostomy tubes and the second was a misplaced stent that required repeat stent placement. Otherwise, there was one 30-d readmission for pain. There was no significant decline in renal function. Table 1 compares additional characteristics between patients with a history of radiation and those with no radiation history.
Conclusion: The use of ileum to replace long-segment ureteral injuries is safe and durable in our medium length follow-up cohort study. We observed minimal complications and no change in long-term renal function.

Table 1: A comparison of patients with history of radiation against those with no radiation history. Of note, the direct etiology of arterial damage was not purely related to radiation in that irradiated group...

	History of radiation (N=9)	No history of radiation (N=4)
Median time from insult to stricture (d)	540 (range: 0-8830)	10 (range: 0-1095)
Median time from stricture/injury to reconstruction (mo)	10 (range: 6-138)	4 (range: 28-124mo)
Laterality (N)	Bilateral = 3 Unilateral = 6	Unilateral = 4
Length of injured segment (cm)	13	6
Median time of PCNT use prior to repair (mo)	21 No PCNT use, N=2	12 No PCNT use, N=1
Median EBL (mL)	150	200
Median operative time (min)	315	307
Median ROM (d)	6	6
Median LOS (d)	7	9
Combined surgery	3	0

Funding: n/a

Poster #135
IMPACT OF PLACENTAL STEM CELLS DOSE ON ERECTILE FUNCTION RECOVERY IN A NEUROVASCULAR INJURY RAT MODEL.
Parth Thakker[1], Xin Gu[2], Ryan Terlecki[3], Yuanyuan Zhang[2], Anthony Atala[1], John Jackson[2]
[1]Wake Forest Baptist Medical Center, [2]Wake Forest Institute of Regenerative Medicine, [3]Wake Forest Baptist Medical Center
Presented By: Parth Thakker, MD

Introduction: Erectile dysfunction (ED) is a consequence of prostatectomy. The advent of nerve-sparing procedures has reduced its incidence of impotence. Pharmacotherapy is typically the first line treatment and prostheses can also be considered. Recently, intracorporal stem cell injection immediately after neurovascular injury has been shown to be effective in regenerating erectile function. Placental stem cells (hPSCs) have been shown to be superior in recovering erectile function. Herein, we sought to determine if hPSCs could illicit functional recovery in immunocompetent rats and if so what dose was optimal. We evaluated tissue sections using H&E, immunofluorescence staining and *in vivo* imaging (IVIS).
Methods: Animals were assigned to one of four dose groups (0.3, 1, 2.5 and 10x106 cells/0.2mL). Neurovascular injury was induced and stem cells were injected. After 6 weeks, functional recovery was measured by obtaining intracavernous pressure and mean arterial pressure (ICP/MAP). Tissues were sectioned and stained. Age-matched (AMC) rats were used as a control group and a phosphate buffered saline (PBS) injection was used for negative controls. For IVIS imaging, 2 animals were assigned to each of 4 groups (1d, 3d, 7d, and 14d). The aforementioned model was created with a mixture of 2.5x106 (0.1mL) renLuc-mKATE, dual-labeled hPSCs. Each animal was imaged and a necropsy was conducted. Tissues were sectioned and stained using fluorescent microscopy.
Results: There was a significant difference between the average recovery in the negative control and the 0.3x106 dose group (0.35 and 0.47) Additionally, there was no statistically significant improvement in erectile function between 0.3, 1, and 10x106 (0.47, 0.45 and 0.54) groups. IVIS imaging shows cells localized to the corpora immediately after injection and periprostatic localization 1 day post-operatively. No fluorescence was visualized 3 days post-operatively and beyond.
Conclusion: Therapy with intracavernosal injection of PSCs is a effective means of functional recovery in immunocompetent rats. Dose of hPSCs does not have a statistically significant impact on the degree of functional recovery in rats with neurovascular injury as all doses illicit a similar regenerative effect. hPSCs are not detectable in the pelvis or peritoneum beyond 1 day using IVIS.
Funding: N/A

Poster #136

BEYOND THE PILL: PRELIMINARY DATA LOOKING AT A COMBINATION OF PHOSPHODIESTERASE INHIBITORS WITH LOW DOSE BIMIX INTRA-URETHRAL GEL FOR THE MANAGEMENT OF ERECTILE DYSFUNCTION

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Presented By: Daniel R. Martinez, MD

Introduction: Intracavernosal injections (ICI) and Intraurethral Bimix Gel (BMG) are great therapies for erectile dysfunction (ED). Both are more invasive than oral phosphodiesterase inhibitors (PDE5-I). Unfortunately, PDE5-I sole therapy may not be strong enough for moderate-severe ED. A combination of PDE5-I with a low dose intraurethral gel may be more attractive than sticking a needle into one's penis. BMG's versatility is such that it can be used as sole therapy, or in combination with oral therapy, PDE5-I. This data provides preliminary data on the combination of BMG and PDE5-I for the treatment of ED.
Methods: Twenty patients were chosen from a registry of 236 patients who were prescribed BMG. Patients were unsatisfied with PDE5-I solo therapy. They were not interested in ICI. They all had attempted BMG as a solo treatment modality and reported an improvement in the quality of their erections but with an uncomfortable "burning sensation" in the urethra at high dosages. These patients were then instructed to take one-hour prior to intercourse either 20mg Cialis, 100mg Viagra or 200mg of Stendra followed by 0.25ml of BMG, 5-10 minutes prior to intercourse.
Results: Comparing pre-PDE5-I+BMG and post-PDE5I+BMG Sexual Health Inventory for Men (SHIM) scores, the average was 5.3 and 15.8, respectively. The pre-PDE5-I+BMG scores represent patients off all ED therapy. Favorite aspect of the therapy was its needle-free drug delivery system, and lack of the "burning sensation" at this low dose. No adverse events were reported.
Conclusion: When given the option of injecting their penis with a needle or taking a pill plus a low dose intraurethral gel, most patients would pick the later. The most common complaint of the intraurethral gel is the "burning sensation" associated with it. This is usually not as noticeable in low dosages. Moderate to severe ED is usually not adequately treated with sole PDE5-I therapy. The combination PDE5-I+BMG seems to be adequate enough to treat more advanced ED, and more tolerable than high dose BMG solo use. We showed a change in the mean SHIM score of 10.5, comparable to high dose solo BMG therapy, without the urethral "burning sensation". These results are favorable, yet further clinical data is still necessary.
Funding: N/A

Poster #137

EVALUATING THE IMPORTANCE OF TIMELY SURGICAL INTERVENTION IN LONG-TERM ERECTILE AND URINARY FUNCTION AFTER TRAUMATIC PENILE FRACTURE

Caleb Natale, Niklos Moring, Laith Alzweri, Amit Reddy, Jacob Greenberg, Ayad Yousif, Cooper Benson, Omer Raheem, Wayne Hellstrom
Tulane University School of Medicine
Presented By: Caleb Natale

Introduction: Penile fracture (PF) is a traumatic injury that often necessitates timely surgical intervention. This study aims to examine the impact of an early vs delayed surgical interventions for PF on the long-term erectile and urinary outcomes.
Methods: Patients who underwent surgical treatment for traumatic PF from March 2010 to October 2019 at our institution were evaluated to characterize demographics, surgical interventions and long-term outcomes. Patients with non-traumatic PF were excluded. International Index of Erectile Function (IIEF-5) utilized for objective post-operative erectile assessments.

Results: A total of 23 patients were evaluated with mean follow-up of 11.6 months. The mean age was 38.5 years and mean BMI was 28.6. There was no history of erectile dysfunction (ED) or Peyronie's disease (PD) prior to trauma. Majority of patients 18/23 (78%) had surgical interventions within 24 hours (early repair), whereas 5/23 (22%) patients received surgical repair beyond 24hrs (delayed repair). In both groups, the preferred approach at the time of PF repair was the degloving incision 18/23 (78%), compared to ventral raphae incision 5/23 (22%). All patients underwent unilateral or bilateral corpora cavernosa repair of PF, and 6/23 patients (5 vs 1 patients in early vs delayed group) underwent anastomotic urethroplasty for concomitant corpora spongiosum rupture. Although the most common complication following surgical repair of PF was ED (62%), erectile function recovery after six months were 15/18 (83%) vs 1/5 (20%) in the early vs delayed repair groups, respectively ($p<0.05$) (Table 1). Seven patients (3 in early and 4 in delayed groups) developed severe and persistent ED (IIEF-5: 5-7). Eight (17%) patients complained of post-operative penile curvature (6/18, 33% vs 2/5 40%), with deviation <30 degree in all cases. One case of subjective penile shortening was reported in each group. In the delayed repair group, there was one case each of required reoperation for urethral stricture and transient priapism.
Conclusion: Early surgical repair of PF provides satisfactory long-term outcomes with adequate recovery of erectile and urinary functions. Majority of patients preserve erectile and urinary functions without the development of debilitating long-term sequalae. Large multi-institutional prospective follow-up is warranted to further elucidate the relationship between time to surgical intervention aiding the surgical decision making.

Outcomes	Early Repair (≤24hrs) N= 18 (78%)	Delayed Repair (>24hrs) N= 5 (22%)	P value
Surgical approach			
Degloving circumcision	14	4	P>0.05
Ventral raphae incision	4	1	NS
Penile fracture components			
Unilateral corpora cavernosa rupture	11	4	NS
Bilateral corpora cavernosa rupture	5	1	P>0.05
Concomitant corpora spongiosum rupture	1	1	P>0.05
Outcomes			
Erectile Dysfunction	4 (22%)	2 (40%)	NS
Erectile Function recovery at 6 mos	15 (83%)	1 (20%)	P<0.05
Penile curvature (<30 degree)	6 (33%)	2 (40%)	NS
Penile shortening	1	1	NS
Reoperative intervention	1	1	NS
Urethral stricture disease	1	1	NS
Transient priapism	1	1	NS

NS, not significant

Funding: n/a

Poster #138
IMAGING IN TRAUMATIC PENILE INJURY: EVALUATING SONOGRAPHY AS AN OPTION AT THE UNIVERSITY OF PUERTO RICO
Ramphis Morales-López, MD, Ariana López-García, MD, Beatriz Junqueira-Ibañez, MS, Kermith Ayala-Muñiz, MD, Antonio Puras-Baez, MD
Urology Section, University of Puerto Rico
Presented By: Ramphis A. Morales-Lopez, MD

Introduction: Although Magnetic Resonance Imaging (MRI) is commonly utilized for the evaluation of patients with penile trauma (PT), the 2017 AUA guidelines on Urotrauma state that "clinicians may perform penile ultrasound on patients with equivocal signs and symptoms for penile fracture". Given our center's volume of trauma and limited MRI availability, we present our early experience with ultrasonography in the diagnosis of PT.
Methods: We performed a retrospective evaluation of cases of PT form 2016-2019. Demographic data was collected and an evaluation was made on existing imaging studies. Patients with imaging were analyzed in regards to modality, and if taken to the OR we evaluated if imaging correlated with findings.
Results: 65 males make our cohort. Median age was 36 years-old (16-66 years-old). 89.2% (n=58) of patients had PT related to intercourse, 7.1% (n=6) had penetrating injury, and 3.7% (n=1) had blunt PT. 33.8% (n=22) of patients had recorded imaging. 36.4% (8/22) had MRI, 31.8% (7/22) had ultrasound, and 31.8% (7/22) had CT scan. 62.5% (5/7) of MRI patients were initially reported to have a fracture, compared to

14.3% (1/7) of sonogram patients, and 28.6% (2/7) of patients with CT. A total of 3 patients with CT scans had normal imaging while having a corporal injury during operation. 75% (6/8) of MRI correlated with definitive diagnosis; in n=1 a negative MRI was found to be positive intraoperatively and n=1 positive MRI was found to have no fracture intraoperatively. 1/7 patients with ultrasound was found to have a tunical injury which was confirmed intraoperatively. All patients with negative ultrasound (n=6) were followed at clinics with no evidence of symptomatology. In our series, 84.6% (n=55) were taken to the OR, of those 60% (n=33) had corporal injury. 59.1% (13/22) of patients with no intraoperative findings of corporal injury were operated without imaging. Imaging did not prove to delay treatment significantly as to increase complications.
Conclusion: Imaging may have a role in limiting the morbidity associated with penile exploration in equivocal cases of PT. In centers with limited MRI availability, ultrasound provides a great diagnostic tool for PT. Prospective studies, and education on ultrasound may further change the diagnosis and treatment of PT.
Funding: N/A

Poster #139

DOES DOPPLER CLASSIFICATION OF PEYRONIE'S DISEASE AFFECT SURGICAL INTERVENTION PURSUED BY PATIENT?

Katherine Cockerill, Jordan Bullock, James Schnell, Andrew Hendrix, Gregory Broderick
Mayo Clinic Jacksonville
Presented By: Katherine Cockerill, MD

Introduction: Our institution utilizes a unique classification system for Color Doppler Duplex Ultrasound (CDDU) evaluation and grading of Peyronie's disease. The purpose of this study is to examine the relationship between the grades assigned during initial CDDU encounter for Peyronie's disease (PyD) and ultimate intervention pursued for treatment of the primary PyD defect.
Methods: During work-up for PyD, 522 patients were examined using penile CDDU performed by a single surgeon at our institution from 2005 to 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. Retrospective review allowed identification of treatments pursued in each case.
Results: 522 patients were evaluated with median age of 60 years (IQR 54, 65). Degree of curvature measured at the time of CDDU was < 30 degrees in 10.8%, > 30 and <45 degrees in 14.2%, > 45 and <60 degrees in 27.2%, > 60 and <90 degrees in 15.1%, and > 90 degrees in 11.6%, with 21.1% of patients having an hourglass defect. A number of patients had concomitant Doppler diagnosis of arterial insufficiency (19.7%), CVOD (35.6%), or mixed arterial and venous insufficiency (9%). Review of Doppler imaging with application of the grading criteria for 522 patients resulted in the primary diagnosis of Grade I ultrasonographic appearance in 237 (45.4%) of patients, Grade II in 104 (29.9%) of patients, Grade III in 91 (17.4%) of patients, and Grade IV(a) and IV(b) in 83 (15.9%) and 7 (1.3%) of patients. Only 187 patients ultimately had invasive treatment for their PyD, with 50 patients undergoing xiaflex, 40 undergoing penile plication, 49 undergoing plaque incision and grafting, and 48 undergoing IPP placement. Our study did not find evidence of trends in surgery with increasing or decreasing CDDU classification score (p=0.83). Most patients (334, 64.1%) did not pursue invasive treatment for their PyD.
Conclusion: Most patients in our cohort did not pursue invasive treatment for their PyD. There was no trend in surgery pursued based on classification score.
Funding: N/A

Poster #140
UROLOGIC SURVEY OF PORNOGRAPHY ADVERTISEMENTS FOR ONLINE CONSUMERS
Jennifer Kuo, MD, Troy Larson, MD, Jeremy Bergamo, MD, M. Louis Moy, MD
Presented By: Jennifer Kuo, MD

Introduction: Internet pornography is purportedly one of the fastest growing industries in the world with one website reporting a total of 33.5 billion visits in 2018. The large audience viewership has attracted a variety of advertisers, including an online food service, a top fashion brand, and even a congressional candidate. Given the natural intersection between pornography and the field of urology, our objective was to analyze the descriptive content of advertisements on pornography websites to better understand associated healthcare implications on providers and patients.
Methods: Top 10 most visited pornography websites were identified using SimilarWeb analytics. Each website homepage was accessed 20-times at minimum or until no new advertisements were identified. Descriptive analysis of each advertisement included the product or service, images or animated graphics, text containing health benefits or risks, and text containing scientific claims. Advertisements pertaining to the healthcare industry were further evaluated by accessing linked affiliated marketing and seller websites.
Results: Top 10 most visited pornography websites included PornHub, XVideo, XNXX, XHamster, RedTube, YouPorn, Tube8, Porn.com, YouJizz, and Tnaflix. Advertisers included 4 male enhancement supplements, 1 telemedicine company, 1 discount online pharmacy, 6 pornography websites, ten online games, and 7 dating services. Advertisements used pornographic images, animated graphics, and provocative statements with little to no information regarding the company, product or service. Advertisements for male enhancement supplements were linked to affiliate marketing websites presented in the style of an online news outlet or a weblog. Seller websites included ingredient lists with scientific claims; and patient and expert testimonials. The discount online pharmacy provided comprehensive information from medication package inserts. The telemedicine company reported on health benefits and patient testimonials, but did not discuss risks.
Conclusion: Pornography websites serve as a unique space for advertisers to reach a large, targeted audience. Highly-visible, catchy advertisements included potentially harmful over-the-counter supplements with misleading science claims and “expert” testimonials; an online discount pharmacy making medications accessible without prior medical evaluation, counseling, or prescriptions; and a telemedicine company advertised under the guise of a safe, alternative form of healthcare delivery. Urologists should be informed about these products and services as they may affect patient perception, healthcare decisions, and subsequently their health outcomes.
Funding: n/a

Poster #141
SURVEYING THE EPIDEMIOLOGY, SYMPTOMATOLOGY AND TREATMENT OF A RARE ORGASM DISORDER: POST-ORGASMIC ILLNESS SYNDROME
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Presented By: Caleb Natale

Introduction: Post-orgasmic illness syndrome (POIS) is a rare disorder with debilitating physical and psychological sequela. We sought to characterize the epidemiology of this condition in the hopes of creating a disease-specific questionnaire to help guide therapeutic investigation through data about the symptomatology, disease course, comorbid conditions, precipitating factors, associated behavioral changes, prevalent treatments, and basic demographics within an online community of patients suffering from POIS.
Methods: An encrypted survey instrument was designed to be administered to the only known online community for patients suffering from POIS. The survey characterizes the condition using the five diagnostic criteria described previously by Waldinger and

stratifies cases into one or more of seven proposed symptom clusters. Respondents were queried to obtain additional data described above.
Results: We received 180 responses. Symptoms of POIS were most commonly reported following masturbation with ejaculation (174 respondents, 96.7%), intercourse with ejaculation (138, 76.7%) and nocturnal emission (105, 58.3%). Symptoms were likely to occur frequently. 137 (76.1%) respondents reported symptoms following 90-100% of ejaculation events. Symptom onset was rapid, occurring within 30 minutes in 102 respondents (56.7%) and within six hours in 152 respondents (84.4%). Symptoms tended to peak within 12 hours to two days and last for two to seven days. The most common symptoms included difficulty concentrating (159, 88.3%), extreme fatigue (153, 85.0%) and muscle weakness (132, 73.3%). Behavioral modifications made frequently or always included avoiding masturbation (130, 72.2%) and avoiding sexual intercourse (113, 62.8%). The most commonly reported comorbidities were premature ejaculation (81, 45.0%), depression (45, 25.0%) and generalized anxiety disorder (33, 18.3%). Erectile dysfunction was relatively uncommon (24, 13.3%). Of respondents who sought medical treatment (100, 55.6%), 86 consulted a generalist (86.0%), 61 consulted a urologist (61.0%) and 21 consulted a non-physician medical professional (19.8%). Common treatments included antihistamines (60, 33.3%) and SSRIs (30, 16.7%).
Conclusion: POIS is a distressing condition that has variable symptomatology but a relatively constant syndrome onset of less than 12 hours and duration of two to seven days. Respondents to the survey indicated considerable disruption to their lives in addition to physical pain and discomfort. Many respondents sought medical treatment, although treatment is neither standardized nor routinely effective.

5 Preliminary Diagnostic Criteria		7 Symptom Clusters	
Criterion	Respondents	Cluster	Respondents
1: ≥1 Common symptoms of POIS	180 (100%)	1: General Cluster	129 (71.7%)
2: Post ejaculation, symptoms occur <1 minute	33 (18.3%)	2: Flulike Cluster	20 (11.1%)
<30 minutes	102 (56.7%)	3: Head Cluster	56 (31.1%)
<6 hours	153 (85%)	4: Eyes Cluster	42 (23.3%)
3: Symptoms follow 90-100% of ejaculations	138 (76.2%)	5: Nose Cluster	34 (18.9%)
4: Symptoms persist 2-7 days	112 (61.9%)	6: Throat Cluster	17 (9.4%)
5: Symptoms disappear spontaneously	101 (55.8%)	7: Muscle Cluster	80 (44.4%)

Funding: n/a

Poster #142
ASSESSMENT OF TESTICULAR HEAVY METAL TOXICITY USING 2D CELL CULTURE AND 3D HUMAN TESTICULAR ORGANOIDS
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Presented By: Adam Bret Cohen, MD, BS

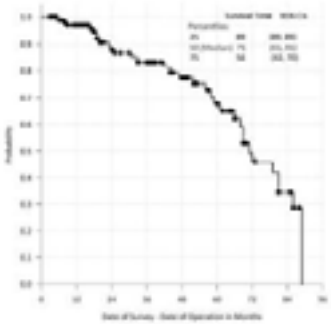
Introduction: Reproductive toxicity of heavy metals is a major global health concern. In the male germline, oxidative stress caused by exposure to heavy metals is thought to have ill effects on spermatogenesis, but the exact events are so far unknown. Studies using 2D cultures and animal models encounter significant limitations in evaluating the impact of exposure as they do not accurately mimic the pathophysiolology of the human testis. We have established a 3D human testis organoid (HTO) that has shown increased resistance compared to 2D culture to chemotherapeutic agents. In this study, our aim was to compare the effect of heavy metal exposure on different types of testicular cells in 2D culture and 3D HTO.
Methods: Testicular cells were isolated from cryopreserved testicular tissue harvested from a 10-year-old donor and propagated in long standing culture. These cells were harvested, characterized as spermatogonia, Sertoli, Leydig, and peritubular cells, and used to form HTOs using decellularized testis extracellular matrix, plated 10,000 cells/well in low adhesion 96 well U bottom plates. The 2D SSC culture and HTOs were then exposed to increasing concentrations of mercury, thallium, and lead for 48 hours, and the IC50 values measured using ATP assay. Digital PCR was performed at IC50 concentrations for PLZF and STAR to determine effects of exposure on spermatogonia and Leydig cells, respectively.

Results: IC50 values were calculated for Mercury, Thallium, and Lead in both 2D and 3D culture methods. The calculated IC50 values were found to be significantly different between 2D and 3D models, with the 3D model more resistant to the heavy metals. The effects of the heavy metals on expression of PLZF and STAR were cell specific.
Conclusion: This preliminary data shows the ability of a 3D human testis in vitro model as an effective replicant for in vivo response in lieu of 2D or animal models. Further studies are needed to strengthen the validity of this model, including not only lethality to the constituent cells but also effects on hormone production and spermatogonia differentiation. Figure. Live (green)/Dead (red) staining on human 3D testis organoids after exposures to heavy metals.
Funding: N/A

Poster #143
A SURVEY OF USAGE OF PENILE PROSTHESIS
Paul Knoll, Resident, Shriharsha Talluri, Resident, Samarpit Rai, Resident, Ross Micciche, Resident, Andrew Park, Resident, Thomas Fitzgibbon, Resident, Ganesh Rao, Attending, Murali Ankem, Department Chair
Department of Urology University of Louisville School of Medicine
Presented By: Paul Brian Knoll, MD

Introduction: Implantation of a three-piece inflatable penile prosthesis (IPP) has high success and satisfaction rates and remains the preferred treatment of erectile dysfunction (ED) refractory to conservative measures. Ample research has focused on postoperative outcomes of IPP implantation such as erosion, infection, device malfunction, and satisfaction rate. There is a paucity of evidence examining patient selection criteria for IPP implantation, and factors that determine discontinuation of its utilization postoperatively.
Methods: We conducted a retrospective chart review and surveyed all patients who underwent an IPP implantation by a single high-volume surgeon between 10/2012 and 11/2018. After application of inclusion and exclusion criteria, a total of 114 patients formed the final cohort. Patients were initially surveyed via mail with a questionnaire; those who did not respond were surveyed via a telephonic survey. The factors determining patient selection for IPP implantation included suitability for general anesthesia, manual dexterity to use the device by the patient or their partner on a demonstration device, presence of refractory ED, HbA1C below 8.5, or need for a revision of previously placed IPP. Universally, a three-piece AMS 700 Series ™ implant was placed via a penoscrotal approach.
Results: The survey participation rate was 97%. The mean age of patient was 63.6 years (range 34 – 83 years) and the mean time between surgery and completion of survey was 3.0 years (range 0.25 - 7.4 years). Kaplan-Meier curve demonstrated that 68% of the patients were using the IPP at 5 years after implantation. Age of 70 was used a cut-off, to analyze usage of IPP above and below it. 18 (22%) of the patients below 70 and 14 (42%) of the patients above 70 discontinued using the IPP (P = 0.029). Reasons for discontinuing use of IPP were poor health to engage in sexual activity (2.6%), loss of companion (9%), loss of interest in sex (2.6%), and device malfunction (14%).
Conclusion: Our study shows a high rate (28%) of non-usage of penile prosthesis, more so in older men. Multicenter studies focusing on reasons for not using the device could help with better selection of patients needing an IPP, and potentially provide significant cost savings to our healthcare system.

Kaplan-Meier survival curve



Funding: N/A

Poster #144
DOC, WILL MY
SHORTER OR THE SAME
GRANULAR ASSESSMENT OF

Evan Carlos, MD, Dominic Grimberg, MD, Brent Nosè, MD, Leah Davis, MS, Aaron Lentz, MD
Duke University Medical Center
Presented By: Evan C. Carlos, MD

Introduction: Recent data suggest penile prostheses(PPs) can act as tissue expanders. However, these studies have been limited to infected PPs, severely fibrotic corpora or based on industry databases not designed to account for patient nuances. In non-infected PPs, we aim add more granular evidence to the theory that PPs do act as a tissue expander. We also framed our study to address a common patient question, 'Doc, will my second PP be longer, shorter or the same size?'
Methods: PPs placed during removal/replacement revisions between 7/2011-10/2017 were reviewed. PPs exchanged for infection were excluded. Demographic, medical and surgical histories were compared. Differences in total device length(cylinder + rear tip extender) were compared between 1st and 2nd implants. We used T-tests for continuous and Chi-square for categorical variables.
Results: 53 men met inclusion criteria. Mean age at 1st PP implantation was 57.9 and mean time to 2nd PP was 5.9 years. 37(70%) patients had longer devices placed for their 2nd PP while 2(4%) had shorter, each by 1cm. Patients were more likely than not to have a longer PP placed on their 2nd surgery(p=0.005). Of those upsized, increases were: 0.5-1cm(49%), 1.5-2cm(24%), >2cm(27%) (p=0.051). Time to revision was no different between those who did or did not have longer devices placed(6 vs 5.6 years,p=0.720). The following variables were not associated with a change in the likelihood of longer device placement(all p>0.082): age at first PP, race, diabetes(yes/no), smoking status(current, former, never), body mass index < or 30, etiology of erectile dysfunction, initial device length, and cavernotome use. Among common inflatable models there was no proportional difference in those who did or did not lengthen(p=0.345, Coloplast Titan, American Medical Systems 700 CX or LGX).
Conclusion: We can now counsel our patients prior to non-infectious revision that, in our practice, 70% of patients receive a longer device and the risk of downsizing is minimal and small when present. Additionally, we add to the evidence that PPs can act as a tissue expander. Among prior studies, our work is unique in its granular assessment that a larger PP can be placed irrespective of many common demographic, medical and surgical patient factors. **Funding:** None

Poster #145

NOVEL TECHNIQUE FOR EXTRA-CORPORAL PLACEMENT OF PENILE PROSTHESIS IN CIS AND TRANSGENDER MALE: THE MODIFIED USE OF ADVANCE MALE SLING FOR PROXIMAL ANCHORING

Laith Alzweri[1], Christopher Koller[1], Ayad Yousif[1], Scott Peterson[2], Wayne J. G. Hellstrom[1]

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Presented By: Laith Alzweri, MD, MRCS, FESCM

Introduction: Placement of penile prosthesis (PP) is technically demanding in men with corporal fibrosis post ischemic priapism and infection, and in cis and transgender men with a neophallus, due to difficulty re-establishing corporal cavity. We suggest utilizing a novel approach in these special populations.

Objective: To assess the feasibility of a novel surgical approach for extra-corporal (outside the corpus cavernosum) placement of PP in cisgender men, using native phallus as a neophallus and optimal proximal anchoring of PP cylinders in cisgender man phallus and transgender man neophallus through modified use of the AdVance™ Male Sling System (Boston Scientific).

Methods: Cadaveric surgery was performed on pelvic specimens of cisgender male (n=1) to assess extra-corporal placement of the cylinders and proximal anchoring as a surrogate for transgender neophallus. Cisgender female (n=1) was also utilized to assess the proximal anchoring in the transgender man pelvis as a proof of concept.

Results: Perineal approach exposed the junction between with inferior pubic ramus and ramus of the ischium bilaterally; measurement was taken from that point to the glans in the phallus and neophallus for cylinders size, then a holster with a slit in a leaflet was fashioned from mesh for the rear-tip extender (RTE). After passing trans-obturator male sling on one side lateral to the urethra, the other limb is passed through the slit in the RTE holster leaflet and the holster is fixed against the pubic ramus. The other limb of the sling is re-tunneled under the skin to be sutured to the other limb at the entry point on the same level. Furlow device is used to tunnel the cylinders in the extra-corporal space parallel to the urethra and under the skin of the phallus to the level of the glans and the proximal ends are attached to the RTEs in the already fixed holsters (Figure.1).

Conclusion: Extra-corporal placement of PP cylinders with proximal anchoring is a novel, feasible, and potentially practice-changing approach in men with severe corporal fibrosis through the modified use of trans-obturator male sling. It can also be applied in transgender man neophallus with apparent very good stability with and without axial loading.

Funding: N/A

Poster #146

SYSTEMATIC TRACKING OF OPIOID RECEIPT AFTER PLACEMENT OF PENILE IMPLANTS

Ethan Matz, Resident[1], Jyoti Chouhan[2], Parth Thakker, Resident[1], Kara McAbee, Resident[1], Ryan Terlecki, Associate Professor[1]
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Presented By: Ethan L. Matz, MD

Introduction: The opioid epidemic is a matter of national concern and analysis has demonstrated 20% of the cities with highest rates of abuse are in North Carolina (NC). Postoperative analgesics have come under increased scrutiny, with recent passage in NC of the Strengthen Opioid Misuse Prevention (STOP) Act. We sought to determine the rate of initial and subsequent opioid prescription fulfillment among men following inflatable penile prosthesis (IPP) surgery with use of a statewide tracking system.
Methods: Our IRB-approved, single surgeon database of urologic prosthetic cases was reviewed for IPP placements performed between February 2015- July 2018. Virgin cases, removal/replacements, explantation, and revision surgeries were included in the analysis.Patients residing outside the state of NC were excluded. Identified patients were cross-referenced with the North Carolina Controlled Substance Database. Standard protocol after IPP involves discharge with a prescription for either 15-30 tablets of acetaminophen/codeine (300mg/30mg), with some patients receiving tramadol as an alternative due to allergy or preference.
Results: A total of 281 men undergoing IPP placement during this interval were identified, with 217/281 meeting the NC residency requirement. Mean age was 63.1 (35-85) years and mean BMI was 30.2 (17.7-49.5) kg/m2. 179/217 (82.5%) fulfilled at least one opioid prescription in the 30-day postoperative period. Among the entire cohort, 40 (18.4%) obtained a second prescription. However, only 9 (22.5%) were prescribed by the urology department for continued post-operative pain. Thus, the rate of identified second prescription fulfillment for post-operative pain was 4.1%.
Conclusion: The majority of NC-resident men undergoing IPP surgery at our center fulfill their initial opioid prescription, but nearly 20% do not. Additionally, less than 20%of men fulfill a second opioid prescription in the 30-day postoperative window, but most did so outside of the treating surgical practice and possibly received this medication for unrelated conditions. Future efforts are warranted to determine the quantity of medication actually used to avoid overprescribing and potential misuse of opioids.
Funding: N/A

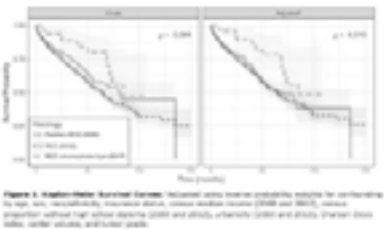
Poster #147

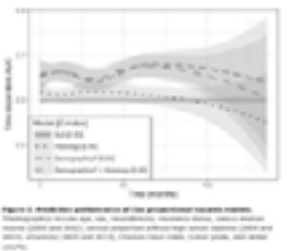
IMPACT OF HISTOLOGIC SUBTYPE ON OVERALL SURVIVAL OF OBSERVED T(ONE)A KIDNEY CANCERS IMPLICATIONS FOR BIOPSY AS A RISK STRATIFICATION TOOL

Jamie Michael[1], Nermarie Velazquez, MD[2], Audrey Renson, PhD[3], Hung-Jui Tan, MD[4], Tracy L. Rose, MD, MPh[5], Matt Raynor, MD[4], Stella K. Kang, MD[6], William C. Huang, MD[2], Marc A. Bjurlin, DO, MSc, FACOS[4]
[1]UNC School of Medicine, Chapel Hill, NC, [2]Dept of Urology, NYU Langone Health, New York City, NY, [3]Dept of Population Health, NYU Langone Health, New York City, NY, [4]Dept of Urology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [5]Dept of Hematology/Oncology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [6]Dept of Radiology, NYU Langone Health, New York City, NY
Presented By: Jamie Michael

Introduction: Pathologic information obtained via renal biopsy may guide decision-making for small kidney cancers (T1a). However, data is lacking on the ability of histologic subtype to predict overall outcomes in non-operative management in T1a kidney cancers. For biopsy to be used as a risk stratification tool in selecting surveillance vs treatment, the prognostic value of differing renal cell carcinoma (RCC) histologic subtypes must be assessed. We aimed to determine the impact of histologic subtype on overall survival (OS) in patients with observed, biopsy proven, T1a kidney cancers.

Methods: We queried the National Cancer Data Base from 2004-2015 for biopsy proven RCC patients managed non-operatively. OS was estimated by Kaplan-Meier curves based on histology. Cox proportional regression models were used to determine whether histology predicted survival. Our adjusted model used inverse probability weights for possible confounding factors including age, sex, race/ethnicity, insurance status, median income, proportion without high school diploma, urbanicity, Charslon-Deyo index, and tumor grade.
Results: Of 132,958 T1a renal masses identified, 1,614 had biopsy proven histology and were managed non-operatively. Of those, 61% were clear cell, 33% papillary, and 6% chromophobe. Adjusted Kaplan-Meier curves demonstrated a difference in OS between histologic subtypes (p=0.010, Figure 1) with greater median OS for patients with chromophobe (85.1 months, HR 0.45, p=0.005) compared to clear cell (64.8 months, reference group); no difference was observed between papillary (68.1 months, HR 0.93, p=0.5) and clear cell. However, predictive models using cox proportional hazards failed to demonstrate predictive power of histologic subtype with C-index 0.54 which approached the null (Figure 2).
Conclusion: RCC chromophobe histology demonstrates better prognosis and longer median OS compared to either clear cell or papillary in non-operatively managed T1a kidney cancers. However, incorporating biopsy proven histologic subtype into a risk stratification model to predict OS appears to have limited utility. Competing risks appear to drive OS. As such, biopsy data may be incorporated into a larger risk stratification system to ultimately assist informed decision making.





Funding: N/A

Poster #148

VARIATION IN ESTIMATED GFR VALUES PRIOR TO NEPHRECTOMY BASED ON CYSTATIN C, CKD-EPI, COCKCROFT-GAULT, AND MDRD FORMULAS

Gordon Hong, Mark Henry, Fangyi Lin, Ian Cooke, Farha Pirani, Dattatraya Patil, Kenneth Ogan, Michael Connor, Mehmet Bilen, Donald Harvey, Viraj Master
Presented By: Ian Cooke

Introduction: Preoperative renal function remains one of the main patient-specific factors that impacts the decision whether to pursue partial or radical nephrectomy for patients with renal masses. Reduction of renal volume results in a decline of glomerular filtration rate (GFR) and places patients at greater risk for future chronic kidney disease (CKD). Decreased GFR is also independently associated with increased mortality and cardiovascular morbidity. We assessed variation in four estimated glomerular filtration rate (eGFR) formulas, the Cockcroft-Gault (C-G), Modification of Diet in Renal Disease (MDRD), Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI), and Hoek Cystatin C (Cys C) equations in a population of patients undergoing pre-operative evaluation for renal mass extirpative surgery.
Methods: Baseline demographics, comorbidities, and lab values were prospectively obtained on patients being considered for extirpative renal surgery. Exclusion criteria included patients with a past medical history of CKD and patients rendered anephric after surgery. Descriptive statistical analysis was performed, as was the calculation of the Pearson correlation coefficient (PCC) for each eGFR.
Results: Fifty-eight patients were enrolled: 67% male, 22% African American, with a mean age of 62 years. The greatest average eGFR (mL/min/1.73m2) was 83.5 as calculated by the Cys C equation, followed by CKD-EPI at 73.6, C-G at 73.5 mL/min, and MDRD at 70.8. eGFR range was highest for C-G (27-169), followed by Cys C (36-156), CKD-EPI (28-114), and MDRD (32.5-109).
When assessing correlation of eGFR values in a single patient, eGFR varied greatly depending on the equation. 34% of patients had values that ranged > 30 points. eGFR distribution and CKD staging also varied with each equation. 31% of this cohort was determined to have an eGFR 30 to 59 (CKD Stage 3) by C-G, 29% by MDRD, 22% by CKD-EPI, and only 19% by Cys C.
Conclusion: There is considerable variability in calculated eGFRs in our patient population depending on the equation used. Direct clinical implications of these differing results include decision-making regarding extent of surgical resection, anticipated tolerability of chemotherapeutic agents, and inclusion in clinical trials. It is imperative for surgeons to understand the distinctions between these differing results in order to have the best possible assessment of their patients' pre-operative renal function.

Funding: N/A

Poster #149

SINGLE-INSTITUTION RETROSPECTIVE ANALYSIS OF PATIENTS UNDERGOING RADICAL NEPHROURETERECTOMY FOR ADVANCED UPPER TRACT UROTHELIAL CARCINOMA (UTUC)

Robert Wilson[1], Rahul Dutta, MD[1], Ashok Hemal, MD[1], Tim Craven[2], Ram Pathak, MD[1]
[1]Wake Forest University Baptist Medical Center Department of Urology, [2]Wake Forest University Baptist Medical Center Department of Biostatistics
Presented By: Robert Russell Alexander Wilson, BS

Introduction: Advanced upper tract urothelial carcinoma (UTUC) has a poor prognosis with pT4 patients having < 10% 5-year specific survival. We sought to evaluate oncologic outcomes of patients undergoing radical nephrouretectomy with advanced UTUC defined as pT3/T4 disease. Secondary objectives include receipt of chemotherapy – in the neoadjuvant or adjuvant setting.

Methods: A single-institution, multi-surgeon, retrospective review of 242 patients was queried. Patients with pT3/T4 pathology on final specimen were notated. Surgical approach included open, laparoscopy or robotic assisted. The bladder cuff was obtained via open, laparoscopic, endoscopic or robotic means. Patients were followed until the time of death. Overall survival (OS) was calculated utilizing Kaplan-Meier survival estimates and plots.

Results: After selecting for patients with pT3 and pT4 disease, 61 patients (pT3=48, pT4=13) remained in our cohort. Of the operations performed, 8 (13%) were done via open approach, compared to 17 (28%) laparoscopic and 36 (59%) robotic approaches. No patients received neoadjuvant chemotherapy, while 14 of the 61 patients received adjuvant chemotherapy. Preoperative to postoperative mean rise in serum creatinine was 0.49. Analysis indicated 29.5% of tumors involved ureter alone at the time of surgery, while 41% involved kidney alone and 29.5% were found to involve both kidneys and ureters simultaneously. Median OS for advanced UTUC was 26.15 months. No significant difference in OS between pT3/T4 disease was found (Figure 1).

Conclusion: Despite the poor OS for advanced UTUC, patients often experience symptomatic relief from resection of the primary tumor. Less than 25% of patients received adjuvant chemotherapy while no patients received chemotherapy in the neoadjuvant setting. Given the decline in renal function postoperatively, a judicious consideration into offering chemotherapy in the neodjuvant setting may ameliorate OS.

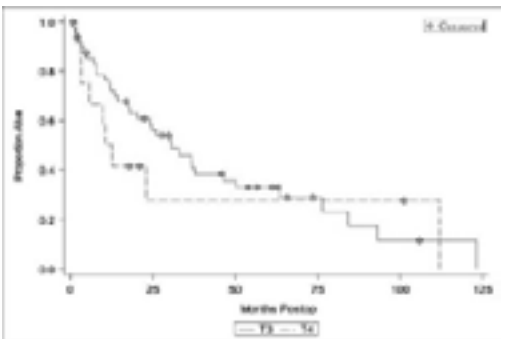


Figure 1: Stratified survival data

Funding: N/A

Poster #150
IMPACT OF VARIANT HISTOLOGY ON SURVIVAL AND RESPONSE TO CHEMOTHERAPY IN PATIENTS WITH UPPER TRACT UROTHELIAL CARCINOMA
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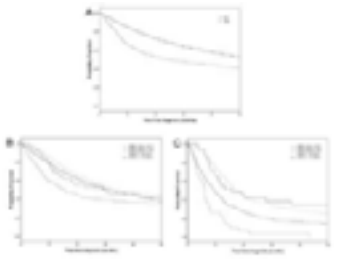
Department of Urology, Vanderbilt University Medical Center
Presented By: Wilson Sui, MD

Introduction: Upper tract urothelial carcinoma (UTUC) is a rare genitourinary malignancy that represents only 5-10% of all urothelial carcinoma (UC). While the majority of these cancers will be derived from urothelium, variant histology (VH) is reported in < 5% of these cases. We sought to identify prognostic and treatment factors for variant histology of UTUC using a nationwide database.
Methods: The National Cancer Database (NCDB) was queried for all cases of UTUC from 2004-2016. Patients with other cancer diagnoses, metastasis, and/or diagnosis on autopsy were excluded. Kaplan-Meier and Cox proportional hazards regression were used to identify independent predictors of overall survival.
Results: We identified 27,737 patients with UC versus 1,093 with VH, respectively. VH presented at both higher T and N stage versus UC and was more commonly metastatic. Not only was overall median survival significantly worse for VH (30 months, 95% CI 22.3 – 37.8 versus 67.5 months, 95% CI 63.3 – 73.0) but also inferior when stratified by stage. On multivariable cox proportional hazards analysis, VH was associated with worse hazards of survival versus UC (HR 1.341, 95% CI 1.196 – 1.504). On sub-analysis, patients who were pT2N0/XM0/X or pN+M0/X after radical nephroureterectomy appeared to benefit from adjuvant chemotherapy across both UC and VH with improved hazards of survival.
Conclusion: Variant histology of the upper urinary tract is associated with later stage at presentation and worse survival when compared to UC, even when adjusted for stage. Adjuvant chemotherapy may improve survival in this cohort.



Funding: N/A

Poster #151
MOVING AWAY FROM MANNITOL INFUSION FOR PARTIAL NEPHRECTOMY: HAS THERE BEEN ANY EFFECT ON RENAL FUNCTION?
Jeffrey Wei[1], George Wayne[2], Kennedy Okhawere[3], Vivian Wong[1], Elias Atri[1], Juan Cedeno[2], Amr Elbakry[3], Bheesham Dayal[3], Akshay Bhandari[2], Ketan Badani[3]
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Presented By: George Wayne, MD

Introduction: In recent years, research has questioned the theorized renal-protective value of mannitol infusion during partial nephrectomy. As surgeons have ceased its routine usage, the effect of this shift in practice patterns bears repeating an evaluation.

This study considers whether mannitol administration has shown any benefit to patients in the contemporary era.
Methods: We retrospectively reviewed a multi-institutional database for an association between mannitol administration and subsequent renal function during follow-up. These patients were assessed for de novo chronic kidney disease, stage III (CKD III) and followed with estimated glomerular filtration rate (eGFR). Statistical analysis included Mann-Whitney-U and chi-squared tests for comparing baseline and perioperative variables, and postoperative outcomes. eGFR changes were evaluated with a mixed-effects linear regression model.
Results: Between 2014 and 2017, 915 patients were identified whose operative reports or surgeons' treatment algorithms explicitly described mannitol administration. 667 (73%) of patients did not receive mannitol. They did not differ significantly at baseline in terms of demographics, age, Charlson comorbidity index, nephrometry score, tumor size, grading, or baseline eGFR. On follow-up, patients were tracked for a median of 5 months (IQR 0.4 – 18 months), during which mannitol use was associated with an increase in de novo CKD III (14% v. 9%, $p < 0.05$), and minimally worsened median eGFR on final follow-up (73 v. 76, $p < 0.05$). On multivariate analysis, mannitol was not associated with changes in renal function, which appeared to be most strongly related to ischemia time and length of follow-up. Interestingly, ischemia time and operative time appeared slightly longer with mannitol use.
Conclusion: Mannitol administration, long believed to prevent ischemic damage during partial nephrectomy, has recently been phased out. Our analysis of partial nephrectomy patients during this shift in practice patterns indicates that mannitol administration likely confers no short- or long-term renal benefit. Mannitol may be used at the surgeons discretion, but if it prolongs surgery time or ischemia time, may actually be detrimental to outcome.

Table. Perioperative outcomes, N = 915.

Outcome	Total	No Mannitol	Mannitol Given	p-value
Ischemia time (mins) median (IQR)	16 (12, 21)	15 (11, 19)	16 (12,22)	< 0.001
Operative time (mins) median (IQR)	169 (140, 213)	158 (130, 190)	177 (144, 220)	< 0.001
Estimated blood loss (ml) median (IQR)	100 (50, 200)	100 (50, 200)	100 (50, 200)	0.673
Length of stay (Days) median (IQR)	1 (1,2)	1 (1,1)	1 (1,2)	< 0.001
De novo CKD III (n, %)*	119 (13.0)	23 (9.3)	96 (14.4)	0.041
Last follow-up eGFR	-	76.1 (62.4, 88.3)	72.8 (57.8, 86.4)	0.039
ΔeGFR, median (IQR)†	-	-4.8 (-17.6, 1.9)	-6.1 (-16.5, 3.7)	0.341

*De novo stage III CKD is <60 ml/min/1.73 m2.
†Difference between last follow-up eGFR and baseline eGFR

Funding: N/A

Poster #152
CD8 T-CELL INFILTRATION PREDICTS PROGRESSION IN RENAL CELL CARCINOMA AND STRATIFIES LOW AND HIGH-RISK PATIENTS WITH STAGE III DISEASE

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Presented By: Caroline Stewart Jansen, BS

Introduction: Renal cell carcinoma (RCC) is a highly prevalent cancer with increasing worldwide incidence, particularly among young patients. Between 30-40% of all patients with localized disease develop metastatic disease, which remains incurable. This risk is significantly increased in patients with large, advanced renal cancers. Current methods for identifying patients at risk for progression are limited to tumor-specific variables, which are complicated by intra-tumoral heterogeneity. Immune variables have independently improved cancer prognostication in various other cancer types, with tumor-infiltrating lymphocytes more accurately predicting patient survival than currently employed methods.

Methods: Intraoperative tumor samples and formalin fixed paraffin embedded (FFPE) histology specimens were obtained for renal cell carcinoma patients. Intraoperative samples were processed and analyzed by flow cytometry. FFPE specimens were analyzed by immunohistochemistry and scored by board certified pathologists.
Results: We examined the T-cell response in 172 renal cell carcinoma patients, and we have found that the proportion of tumor-infiltrating CD8 T-cells varies widely (>10,000 fold) in renal cell carcinoma patients. This CD8 T-cell response is independent of standard risk assessment tools, tumor size, tumor pathology, tumor PDL-1 status, and patient demographics. Significantly, an increasing percent of tumor CD8 T-cells is associated with cancer-specific survival in our patients, and this association is particularly strong in an additional cohort of 58 stage III patients.
Conclusion: Measuring CD8 T-cell infiltration in renal cell carcinoma predicts cancer-specific survival, and importantly does so in stage III patients. As this patient population is one for whom improved prognostication is a critical clinical goal, this study represents an opportunity to inform future prognostic measures and to improve stratification of medical therapy.
Funding: N/A

Poster #153
COMBINATION THERAPY FOR METASTATIC RENAL CELL CARCINOMA: A SYSTEMATIC REVIEW AND NETWORK METANALYSIS
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Presented By: Muhammad Umar Alam, MD

Introduction: The combination of immune checkpoint inhibitors (ICIs) against programmed cell death protein 1 (PD-1)/ programmed death-ligand 1 (PD-L1) or cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) and tyrosine kinase inhibitors (TKIs) have emerged as a new treatment modality for metastatic renal cell carcinoma (mRCC). Recent prospective randomized clinical trials (RCT) have shown that combination ICIs lead to superior progression-free survival rates when compared to sunitinib alone in patients with mRCC. However, there have been no direct comparisons among the novel immunotherapy combination strategies making it unclear as to which may be the preferred option. Therefore, we performed a network meta-analysis (NMA) of the combination therapy used in metastatic renal cell carcinoma (mRCC) and provides a rank-ordered preference of these agents based on efficacy, adverse events (AEs) and discontinuation rates.
Methods: All published studies on the treatment of mRCC using combination therapy until the end of June 2019 were queried and analyzed to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) statement. A total of 3 studies consisting of 2672 patients, evaluating the efficacy and adverse effects (AE) for Pembrolizumab plus Axitinib, Avelumab plus Axitinib, and Atezolizumab plus Bevacizumab were included in this systematic review.
Results: Although combination therapies demonstrated a significant increase in progression-free survival (PFS) and objective response rate when compared to sunitinib alone, in the rank ordering comparing the PFS, combination Pembrolizumab plus Axitinib had the highest probability of favorability followed by Avelumab plus Axitinib and Atezolizumab plus Bevacizumab (SUCRA 0.9, 0.7, and 0.4 respectively). For adverse effects (AE), Pembrolizumab plus Axitinib had the least grade 2+ AE's, followed by Avelumab plus Axitinib and Atezolizumab plus Bevacizumab (SUCRA 0, 0.5, 1.0). Analysis of AEs related to discontinuation showed Pembrolizumab plus Axitinib to have the least discontinuation probability, followed by Atezolizumab plus Bevacizumab and Avelumab plus Axitinib (SUCRA 0.5, 0.6, 0.8).
Conclusion: This NMA demonstrates that combination Pembrolizumab plus Axitinib may be the preferred option based on efficacy and side effect profile compared to the other two combination strategies. However, all three combination strategies were superior to Sunitinib alone in improving PFS in patients with mRCC. **Funding:** N/A

Poster #154

COMPARISON OF WIDE LOCAL EXCISION VERSUS MOHS MICROGRAPHIC SURGERY FOR THE MANAGEMENT OF GENITOPERINEAL EXTRAMAMMARY PAGET DISEASE: A SINGLE CENTER CASE SERIES

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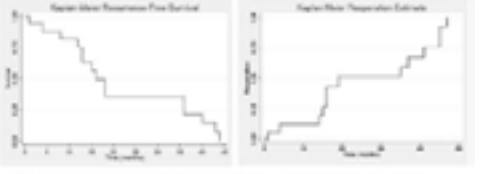
Presented By: Judy Hamad, BS

Introduction: Extramammary Paget's disease (EMPD) is an intraepithelial malignancy with sparse guidelines for management. Surgical excision remains the mainstay of treatment; however, whether to use wide local excision (WLE) or Mohs Micrographic Surgery (MMS), with or without immunohistochemical margin analysis, remains unclear. We present our experience with the multidisciplinary management of genitoperineal EMPD to better understand disease progression following surgery.
Methods: We identified all biopsy-proven EMPD patients treated in a single center from 2012 to 2019. Medical charts were evaluated for demographic, clinicopathologic, and surgical treatment variables. Kaplan-Meier method was used to generate reoperation (defined as time from first surgery to second surgery) and disease recurrence (time from first surgery to positive re-biopsy) models, analyzed by patient and by surgical encounter.
Results: Nineteen patients were identified for analysis, 18 of whom had primary disease (94.7%), and encompassed 34 unique lesions and surgical encounters. Anatomic distribution of disease included vulvar (52.6%), anal/perineal (21.1%), and scrotal/penile (26.3%). Diagnostic biopsies were most commonly intraepidermal (68%), with invasive disease following (8%). Distribution of excision method was 82% WLE with varying margin widths and 18% MMS with Cytokeratin-7 immunohistochemical margin analysis. Seventy-three percent of excisions resulted in positive surgical margins on final pathology, associated with an odds ratio for recurrence of 10.5 (95% CI 2-51). Recurrence and reoperation rates were both 78.9% (n=15 patients) with median times to recurrence and re-intervention of 18 (12-36) and 19 (4-37) months, respectively (95% CI) (Figure 1a-b). 10- and 30-month disease-free rates were 78.9% and 42.1%. Median recurrence-free survival time by surgical encounter was longer for lesions excised by MMS (40 months) than those excised by WLE (19 months; 95% CI 12-36). Patients required an average of four operations over their treatment course given the large proportion of EMPD recurrence.
Conclusion: Cutaneous genitoperineal disease offers unique anatomic challenges for resection and reconstruction. We found that negative-margins were difficult to achieve in our patient cohort, resulting in high disease recurrence and reoperation rates. MMS showed promise in achieving negative margins and extending recurrence-free survival, though our sample size is limiting. Further investigation is warranted to elucidate the best method for sugical excision of genitoperineal EMPD.



Funding: N/A

Poster #155
PROGNOSIS AND SURVIVAL OUTCOME FOR PRIMARY URETHRAL MELANOMA IN A LARGE POPULATION DATABASE
Sagar Patel, BS[1,2], Matthew Johnson, MD[3], Robinson Myra, MSPH[4], Caitlin Hensel, BS[4], Asim Amin, MD, PhD[5], Peter Clark, MD[1], Stephen Riggs, MD[1]
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Presented By: Sagar Patel

Introduction: Urethral melanoma is a rare malignancy, accounting for only 0.2% of all melanoma diagnoses. Given its rarity, epidemiologic and survival data remains limited. This study analyzes the prognostic factors and survival outcomes of primary urethral melanoma in the United States using a population-based cancer registry.
Methods: We used the Surveillance, Epidemiology, and End Results (SEER) program to extract clinicopathologic and demographic information for patients diagnosed with primary urethral melanoma from 1973 to 2016. The Kaplan-Meier method was used to estimate survival distributions, log rank-tests were used to compare distribution between groups, and cox-proportional hazard models were used to evaluate the association of gender, race, age at diagnosis, extent of disease, and intervention option on outcomes.
Results: 79 patients were identified. The overall 5- and 10-year survival rates for urethral melanoma were 25.7% and 17.0% respectively. The median survival was 1.7 years (95% CI 1.3-3.2). Advanced disease and older age were associated with poor outcomes ($P < 0.001$ and $P = 0.049$, respectively). Univariate and multivariate analysis of overall survival (OS) showed patients with no surgical intervention had poorer outcomes compared to those who had intervention (HR: 0.43, 95% CI: 0.25-0.76, $P = 0.004$ and HR: 0.51, 95% CI: 0.29-0.90, $P = 0.021$, respectively). Lymph node dissection, chemotherapy, and radiation therapy were not prognostic for OS ($P = 0.635$, $= 0.75$, and $= 0.051$, respectively). OS has not improved after 2000 compared to the late 1900s (5-year OS 26.1% versus 25.4%; $P = 0.811$). Median age at diagnosis has not changed from 2000-2016 compared to pre-2000 years (76.5 versus 73.0 years, $P = 0.247$).
Conclusion: Currently, there are no guidelines for managing primary urethral melanoma. The prognosis of urethral melanoma is generally poor even with surgical intervention. More investigation is warranted to elucidate the optimal treatment modality for this aggressive form of melanoma.
Funding: N/A

Poster #156
EPIDEMIOLOGY AND SURVIVAL OUTCOMES OF ADULT KIDNEY, BLADDER, PROSTATE RHABDOMYOSARCOMA: A SEER DATABASE ANALYSIS
Sagar Patel, BS[1,2], Caitlin Hensel, BS[3], Jiaxian He, MS[3], Matt Ellis, BS[1,2], William Worrilow, BA[3], James Kearns, MD[4], Kris Gaston, MD[4], Peter Clark, MD[4], Stephen Riggs, MD[4]
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Presented By: Sagar Patel

Introduction: Rhabdomyosarcoma (RMS) is rare in adulthood, accounting for 2-5% of adult soft tissue tumors, and less than 20% occur in genitourinary organs. Given its rarity, survival data on adult kidney, bladder, and prostate RMSs is limited. In this population-based analysis, we performed an analysis of all adult RMS cases reported in Surveillance, Epidemiology, and End Results (SEER) database to understand prognostic factors among kidney, bladder, and prostate RMS.
Methods: A query of the SEER database was performed from 1973 to 2016 for patients > 18 of age with RMS. The final cohort consisted of 14 kidney, 35 bladder, and 21 prostate RMS cases in the adult population. Demographic, treatment, and survival data

were obtained. Analysis was performed using Fisher's exact test, survival analysis, and model.
Results: The median (range) age of diagnosis for adult bladder RMS was 65 years old (19-84) compared to 52.5 (28-68) and 42 (19-87) for kidney and prostate (P = 0.007). 78.6% of patients underwent surgical intervention. 5-year overall survival (OS) for adult kidney, bladder, and prostate RMS are 17.1% (2.9-41.6%), 22.2% (9.4-38.4%), and 33.0 (12.8-55.0%), respectively. OS was not statistically associated with primary site (P = 0.209). On multivariable analysis, compared to adult bladder RMS, kidney RMS had a higher incidence of mortality (HR: 2.16, 95% CI 1.03-4.53, P = 0.041). Incidence of mortality from prostate RMS was not significantly different from bladder RMS (HR: 0.70, 95% CI 0.30-1.65, P = 0.411). Extent of disease (HR: 5.17, 95% CI 2.09-12.79, P < 0.001) and older age (HR 1.03, 95% CI 1.01-1.04, P = 0.002) were adverse prognostic factors for OS.
Conclusion: Overall survival at 5 years for adult kidney, bladder, and prostate RMS is poor. Localized disease and younger age are prognostic factors for improved outcomes in adult RMS. Hence, early diagnosis and intervention appear paramount to improved survival for this rare malignancy in adulthood.
Funding: N/A

Poster #157
ROBOTIC RETROPERITONEAL LYMPH NODE DISSECTION CAN BE SAFETELY APPLIED IN A COMMUNITY-BASED, TERTIARY HOSPITAL SETTING
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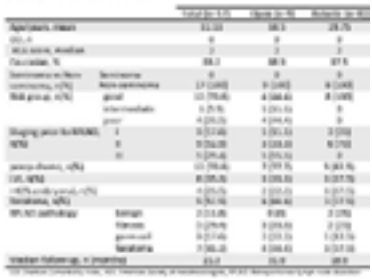
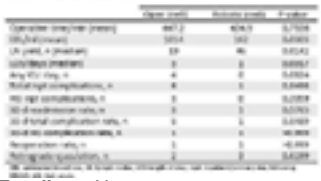
Presented By: Hamza Mustafa Beano, MD

Introduction: Improvements in robotic technology and surgeon experience has made robotic retroperitoneal lymph node dissection (RPLND) a safe and viable option. This study evaluates a single surgeon experience to assess the safety of robotic RPLND application at a tertiary care center compared to traditional open RPLNDs. We hypothesize that perioperative metrics of robotic RPLND are non-inferior to open RPLNDs.
Methods: This is a single center, retrospective, non-randomized, case-control study of consecutive RPNLDs performed by a single surgeon. We included RPLNDs performed for testicular cancer from 2015-2019. Patients were divided into open and robotic RPLND cohorts. Demographic and clinicopathological parameters were collected. Measured outcomes included operative time, estimated blood loss (EBL), lymph node (LN) yield, length of stay (LOS), ICU stay, total and high-grade complications during primary stay, total and high grade 30-day complication rate, 30-day readmission rate and reoperative rate. Fisher's exact, two-sample t-test and nonparametric Mann-Whitney U test were employed for analysis.
Results: 17 patients fit the inclusion criteria with 8 in the robotic cohort and 9 in the open cohort. Preoperative characteristics are summarized in table 1. The open cohort demonstrated higher risk, higher stage disease and longer median follow-up. The robotic RPLND cohort demonstrated lower EBL (162cc vs 1014cc, p=0.0303), higher LN yield (46 vs 19, p=0.0142), lower LOS (1 vs 5 days, p=0.0017) and lower total complication rate during primary stay (1 vs 6, p=0.0498) and within 30-days of surgery(1 vs 6, p=0.0498). The other perioperative outcomes were similar in both cohorts. At a median follow up of 21.3 months, overall survival was 100% while recurrence free survival was 88.8% for the open cohort and 87.5% for the robotic cohort.
Conclusion: Our data suggests that robotic RPLND is a non-inferior option compared to traditional open RPLND which can be applied safely in a community-based, tertiary care center. Further investigation with a larger cohort of patients is warranted to explore the potential advantages of robotics RPLND and study oncological outcomes.





Funding: None

Poster #158

DELAYED RADICAL ORCHIECTOMY FOLLOWING PRIMARY CHEMOTHERAPY FOR ADVANCED TESTICULAR GERM CELL TUMORS

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Presented By: Arvind Ramiah Krishnan, MD

Introduction: Radical orchiectomy (RO) is the accepted initial procedure to diagnose testicular germ cell tumor (GCT). However, primary chemotherapy is indicated for select patients, including those with bulky disease and life-threatening metastases at time of diagnosis. The aim of this study is to evaluate the pathologic findings following delayed RO performed at the time of post-chemotherapy retroperitoneal lymph node dissection (PCRPLND) for patients with advanced GCT.
Methods: A retrospective evaluation was performed for patients undergoing PCRPLND and delayed RO at a single tertiary referral comprehensive cancer center. Electronic records were reviewed to determine risk classification, pre/post-chemotherapy testis ultrasound (US) findings, chemotherapy regimens, and pathologic findings of the RO and PCRPLND specimens. Diagnosis of nonseminoma vs. seminoma was based on tumor marker assessment and biopsy of distant mets.
Results: Between 2005-2019, 27 patients diagnosed with advanced metastatic testicular GCT were managed with primary chemotherapy followed by concurrent RO & PCRPLND. Nonseminomatous GCT was identified in 22 patients (good, intermediate and poor-risk in 8, 5, and 9, respectively). Seminomatous GCT was identified in five patients (good and intermediate risk in 4 and 1, respectively). All patients received cisplatin-based chemotherapy (median four cycles, 27% received second/third line chemotherapy). Pre/post-chemotherapy US results were available in 24 and 7 patients, respectively. Prior to chemotherapy, 10/24 patients (42%) had a discrete testis mass and 14 (58%) had irregular heterogeneity, microlithiasis, or calcifications ipsilateral to the metastatic retroperitoneal GCT burden. Of the 27 RO specimens, three (11%) had viable GCT, seven (26%) had teratoma, and 17 (63%) had no viable tumor or germ cell neoplasia in-situ (pT0, including all five patients with seminoma). PCRPLND pathology revealed no viable tumor in 16 of 27 patients (59%), teratoma in six (22%), and non-teratomatous GCT in five (19%). The concordance between teratoma in the

retroperitoneum and in the RO specimen was 86% (6 of 7 patients). Eight of nine patients (89%) with a prechemotherapy discrete testis mass via US assessment were pT0.
Conclusion: 45% of nonseminoma patients undergoing delayed RO at time of PCRPLND still have viable GCT elements in the orchiectomy specimen. Albeit a potentially rare circumstance, seminoma patients could be considered for testis sparing procedures following systemic chemotherapy.
Funding: N/A

Poster #159
PROSTATE CANCER IN ELDERLY – NATURAL HISTORY AND PROSTATE CANCER-SPECIFIC MORTALITY
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[1]University of Florida Jacksonville, [2]University of Florida, Jacksonville, [3]University of Florida, Jacksonville, [4]University of Florida, Jacksonville
Presented By: Mark G. Bandyk, MD, MPH

Introduction: The outcome of high-risk prostate cancer (PC) is not well defined in the elderly. Considering the cut-off of PC screening at age 70 years and the increasing life expectancy of an average male, we sought to determine the natural history of PC and prostate cancer-specific mortality in patients above 70 years of age.
Methods: Records from 33630 patients who were diagnosed with PC from 2004 to 2016 were obtained from the Surveillance, Epidemiology, and End Results (SEER) database and stratified according to age into groups ages 70 to 74 years, 75 to 79 years, 80 to 84 years, 85 to 89 years, and 90 years. The cause-specific death and median survival was calculated and the relationship between the prognostic factors (race, PSA, Gleason score and T-stage) was also evaluated.
Results: Out of the total population studied, 10.1 % were African American, while 78.4 % were Caucasians. Only 5% of the total population died of PC, 85% were alive and 10% died of other causes. While stratifying cause of death with age groups, 43% of patients 90 years were alive, 22% died of PC and 34% died of other causes. However, for patients 85-89 years, 60.5 % were alive, 14.7% died of PC and 24.7 % died of other causes. For the 80-84 year group 75% were alive, 9% died of PC and 15% died of other causes. Similarly, for the 75-79 year group, 85% were alive, 5% died of PC and 10% died of other causes. In the 70-74 year group, 91% were alive, 3% died of PC and 6% died of other causes. In evaluating for Gleason score, 30 % of the study population has Gleason 8 overall. Among patient 90 years, 62.5 % had Gleason 8, 85-89 group had 55 %, 80-84 group had 42.5 %, 75-79 group had 31% and 71-75 group had 23% Gleason 8.
Conclusion: High-grade PC (Gleason 8) is more common in the elderly. Also, with increasing age, there is a steady increase in prostate cancer-specific mortality. The data supports the fact that high-grade PC should be treated even in the very elderly who are fit for definite treatment.
Funding: N/A

Poster #160
STRATIFICATION OF POTENCY OUTCOMES FOLLOWING ROBOT ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY BASED ON AGE, PREOPERATIVE POTENCY AND NERVE SPARING (NS) APPROACH- A SINGLE SURGEON SERIES.
Seetharam Bhat Kulthe Ramesh, Fellow, Marcio Moschovas, Fellow, Fikret Onol, Fellow, Travis Rogers, Fellow, Cathy Jenson, Coordinator, Vipul Patel, Director
Global Robotics Institute
Presented By: Seetharam Bhat Kulthe Ramesh, MD

Introduction: Postoperative potency affects trifecta and pentafecta outcomes following robot-assisted laparoscopic prostatectomy (RALP). We aimed to determine the group of patients who have optimal potency outcomes following RALP.

Methods: We retrospectively analyzed all men that underwent RALP between January 2008 to December 2016 with 12 months follow up based on age, preoperative SHIM (>21 as Erectile dysfunction),17- 21 as mild ED and < 17 as no ED) and the Nerve sparing(NS) in them with potency was performed. The degree of NS was graded as full NS (FNS) with more than 95% of nerves spared, PNS was between 50-95% of nerves spared and non-nerve sparing (NNS) is less than 50 % nerves spared. Data of 5766 patients were available for analysis. Potency outcomes were compared in subgroups based on age, preoperative SHIM score, and degree of NS.
Results: The median age was 62 years. Preoperatively,46.7% of patients had erectile dysfunction (ED). Overall postoperative potency was 63.1% regardless of age, SHIM and NS performed. For each age group and preoperative erectile function category, patients with FNS had better outcomes than partial nerve sparing PNS (Table 1). Patients <55 years with no pre-operative ED and FNS had highest potency rates (95%) post-operatively Table 1 shows the comparison of potency outcomes in patient subgrouped on age, pre-op SHIM and NS approach.
Conclusion: Key factors for post-operative potency are age, Pre-op SHIM, and NS. Decreasing SHIM score, decreasing NS and increasing age led to decreasing potency outcomes. Patients of all ages with no ED and FNS had excellent potency rates (79-95%).Patients with ED and FNS potency rates range (64.8% - 81.7%) irrespective of age. Young patients less than 55 years did well in all categories of ED and NS (72%-95%). Age above 65 with pre-op ED and PNS has the most significant effect on potency rates, so whenever possible they should be offered a FNS.

Table No 1: - Potency outcomes at 12 months on patients grouped on age, preoperative SHIM and Nerve sparing.

Sub groups	< 55 years Potency (%)	P value	55-65 years Potency (%)	P value	>65 years Potency (%)	P value
No ED with full nerve sparing						
No ED with partial nerve sparing						
Mild ED with full nerve sparing						
Mild ED with partial nerve sparing						
ED with full nerve sparing						
ED with partial nerve sparing						
Total						

Funding: N/A

Poster #161
DOES OBESITY AFFECT PELVIC LYMPH NODE DISSECTION YIELD IN HIGH RISK PROSTATE CANCER?
Kevin Parikh, MD[1], Ricky Bateh[1], Giovanni Gonzalez, MD[1], Amanda Myers, MD[1], Colleen Ball, MS[2], Raymond Pak, MD, MBA[1]
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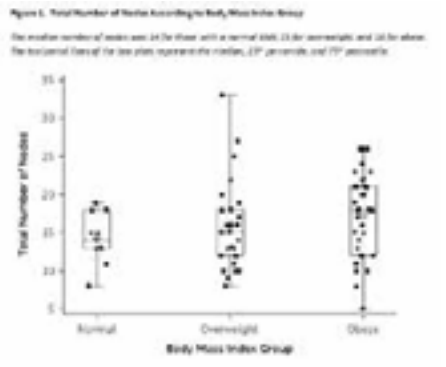
Presented By: Kevin Parikh, MD

Introduction: The number of lymph nodes removed during extended pelvic lymphadenectomy (ePLND) for high risk prostate cancer (PCa) has been documented as an important diagnostic and prognostic outcomes predictor. From our personal experience, ePLND can be time consuming and technically challenging, especially in overweight patients. The goal of our study was to evaluate the impact of BMI on lymph node yields during robotic prostatectomy with ePLND.
Methods: A retrospective review was performed of patients who underwent bilateral ePLND at the time of robotic prostatectomy for high risk PCa between 2017 and 2019. This was a single surgeon series with a standardized template. High risk PCa was defined following NCCN criteria (PSA>20 and/or Gleason Score > 7 and/or T3a). Bilateral pelvic lymph node samples were collected with a single laparoscopic retrieval bag and extracted at the end of the case. BMI was classified as normal (18.5-24.9

kg/m2), overweight (25.0-29.9 kg/m2), or obese (30 kg/m2 or higher). Single variable Poisson regression model was used for analysis.
Results: A total of 76 males were included in with a median BMI of 29 kg/m2 (range, 22 to 41 kg/m2); 11 (14%) were classified as normal BMI, 31 (41%) were classified as overweight, and 34 (45%) were classified as obese. The median number of lymph nodes removed during surgery was 16 (range, 5 to 33).
Figure 1 shows a boxplot with individual observations of lymph nodes removed according to their BMI. The difference in the expected number of lymph nodes removed per 5 kg/m2 increase in BMI was 1.07 (95% CI, 1.00-1.14; P=.047). The difference in the expected number of lymph nodes removed between those who were overweight and those who had a normal BMI was 1.11 (95% CI, 0.92-1.32). The difference in the expected number of lymph nodes removed between those who were obese and those who had a normal BMI was 1.21 (95% CI, 1.02-1.44).
Conclusion: As the BMI increased, the lymph node yield increased for patients with high risk PCa. The observed number of lymph nodes removed for normal weight patients had less variation when compared to overweight and obese patients.



Funding: N/A

Poster #162
HOW QUICKLY DOES THE LEARNING CURVE IMPROVE USING MP MRI US FUSION PROSTATE BIOPSY? A COMPARISON BETWEEN PATIENTS IN TWO CONSECUTIVE YEARS
Daniel Zapata, Urology Resident, Patrick Probst, Urology Resident, Stephen Legg, Urology Resident, Marley Kristen, Urology Resident, Daniel Peters, Medical Student, Raymond Xu, Medical Student, Zachary Sherman, Medical Student, Anthony Patterson, Asociate Professor, Christopher Ledbetter, Assistant Professor, Robert Wake, Chairman
University of Tennessee
Presented By: Daniel Zapata, MD

Introduction: We previously reported a significant learning curve in the early phases of multi-parametric MRI (mpMRI) adoption for the detection of prostate cancer. As a follow up study, we sought to analyze and compare clinically significant cancer (CSC), Gleason score 7 or greater, detection rates between our first and second years of mpMRI use.
Methods: We retrospectively reviewed the data of men who underwent a mpMRI due to elevated PSA from January 2018 to December 2018. Men with PI-RADS 3, 4 or 5 lesions were offered fusion biopsy. 3-6 targeted cores were taken from each lesion. We then collected clinical, demographic and oncological data and compared our results to our initial reported cancer detections rates for January 2017 through December 2017.
Results: 135 new men underwent mpMRI. Mean total PSA and PSA density was 8.6ng/dL and 0.13 respectively. 46 men underwent fusion biopsy. Of those men, 26.1% had PI-RADS 5 lesions, 54.3% had PI-RADS 4 and 19.6% had PI-RADS 3 lesions. CSC

was found in 58.3%, 44% and 44.4% amongst PI-RADS 5, 4 and 3 lesions, respectively, compared to 29%, 22.2% and 0% (all p=<0.05) in our previous series.
Conclusion: We noticed a statistically significant improvement in the detection rates of CSC amongst PI-RADS 3, 4 and 5 lesions between the first and second year of performing mpMRI. However, the CSC detection rate for PI-RADS 3 and 4 lesions were similar. This is likely due to inherent selection bias as only 28% of PI-RADS 3 lesions were biopsied compared to more than 75% of PIRADS 4 and 5 lesions. Given the low number of PI-RADS 3 lesions biopsied, a tendency may have been to perform biopsy on "higher risk" men (ie. higher PSA and/or PSA density, lower %free PSA, etc). Additionally, radiologists may have over-reported PI-RADS 3 lesions and under-reported PI-RADS 4 and 5 lesions to compensate for our first-year results. Despite these flaws, our data is encouraging and shows that although a learning curve does exist, improvement can quickly be achieved.
Funding: NA

Poster #163
DIAGNOSTIC ACCURACY OF MULTIPARAMETRIC PROSTATE MRI DETECTING EXTRAPROSTATIC EXTENSION IN MEN WITH INTERMEDIATE AND HIGH-RISK PROSTATE CANCER
Fernando Arroyo, MD, Ricardo Sanchez-Ortiz, MD
Robotic Urology and Oncology Institute and Division of Urology, University of Puerto Rico School of Medicine
Presented By: Fernando Arroyo

Introduction: As the use of multiparametric MRI (mpMRI) for prostate cancer (PCa) staging has become widespread, we describe the diagnostic accuracy of mpMRI for detecting extraprostatic extension (EPE) in our population.
Methods: A prospective database was maintained for patients at our Institute. Patients with unfavorable intermediate and high risk PCa underwent MRI before robotic radical prostatectomy (rRP), 102 in 3T systems and 74 in 1.5T systems. Imaging and pathologic data were reviewed from men treated between 1/2017 - 12/2018. The finding of EPE on MRI was correlated to pathologic findings and stratified according to MRI system (3T vs. 1.5T). SPSS was used for analysis.
Results: 176 patients were identified with a mean age of 59.7 years, serum PSA:6.9 ng/ml, prostate volume:44.9 cc, PSA density (PSAD): 0.19, and BMI: 29.4. Biopsy grade group distributions were GG1 (16.5%, 29/176), GG2 (42.6% (75/176), GG3 (25.6%, 45/176), GG4 (13.6%, 24/176), and GG5 (1.7%, 3/176). Twenty-one percent of patients (37/173) exhibited pathologic T3a or T3b disease. In order of significance, variables predictive of EPE on univariate analysis were PSA density (Hazard ratio: 8.9, 95% Confidence Interval: 2.9 to 26.7), 3T mpMRI (HR: 5.3, 95% CI: 1.78 to 15.6), T3 DRE (HR: 4.2, 95% CI: 1.14 to 15.6), grade group (HR:1.7, 95% CI: 1.02 to 2.9), and PSA (HR: 1.14, 95% CI: 1.04 to 1.25). MP-MRI findings on 3T systems were independently predictive of EPE but not studies performed on 1.5T systems, with a negative predictive value and specificity of 87% and positive predictive value and sensitivity of 45% (HR: 6.0, 95% CI: 1.8 to 19.4). Patients with a PSAD<0.20 were unlikely to harbor EPE (10.7%, 13/121) versus men with PSAD 0.20 (45.2%, 23/51) (p< 0.001). Other independent predictors of EPE on logistic regression were PSA (HR:1.15, 95% CI: 1.04 to 1.3) and PSAD>0.20 (HR:6.2, 95% CI: 2.7 to 14.0).
Conclusion: In men with unfavorable intermediate and high risk PCa, a preoperative 3T mpMRI, but not 1.5T MRI, was predictive of EPE with high specificity (87%) and a sensitivity of 45% consistent with published studies. In the absence of MRI findings suggestive of EPE or a PSAD< 0.20, patients are unlikely to harbor pathologic extraprostatic disease.
Funding: N/A

Poster #164

PREDICTORS OF UPGRADING ON RADICAL PROSTATECTOMY SPECIMENS: ANALYSIS FROM THE SEER ACTIVE SURVEILLANCE/WATCHFUL WAITING DATABASE

Rashid Sayyid, MD[1], John Benton[2], Atul Lodh[2], Katherine Miller, MD[1], Hanan Goldberg, MD[3], Rabii Madi, MD[1], Martha Terris, MD[1], Christopher Wallis, MD, PhD[4], Zachary Klaassen, MD, MSc[1]

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Presented By: Atul Lodh

Introduction: Active surveillance (AS) is an increasingly popular option for patients with favorable-risk prostate cancer (PCa). It's well recognized that, due to both disease progression and the fallibility of initial risk stratification approaches, a significant number of such patients who eventually undergo radical prostatectomy (RP) are diagnosed with more aggressive forms of PCa. Our objective was to identify predictors of upgrading on RP specimens among AS patients using a national, validated database.

Methods: The Surveillance, Epidemiology, and End Results (SEER) Prostate Active Surveillance/Watchful Waiting database was used to identify AS patients diagnosed with very low- or low-risk PCa undergoing RP, between 2010 and 2015. The primary outcome was upgrading on RP specimen [i.e. higher Gleason Score (GS) on RP compared to biopsy specimen]. Univariable and multivariable logistic regression analyses were used to evaluate whether demographic, socioeconomic, and oncologic factors were predictors of upgrading on final specimen. Statistical significance was set at $p<0.05$.

Results: 3,744 patients initially treated with AS subsequently underwent RP during the study period. Median patient age was 60.0 years (Interquartile Range 55.0-65.0). 70.7% were Caucasian and 7.9% African-American. 90.7% were clinical stage T2a and 99.8% were GS 6. Median PSA was 4.9 ng/ml (IQR 3.8-6.3). Median percent core involvement was 14.3% (IQR 8.3-25%). Upgrading occurred in 976 (26.1%) patients, with 85.6%, 10.9%, and 3.4% upgraded to GS 7 (3+4), 7 (4+3) and 8 or higher, respectively. On multivariable analysis (Table 1), upgrading on final pathologic specimen was more likely in patients diagnosed in 2014-2015 (Odds Ratio 1.37, p 0.015), in a Northeastern region (OR 1.58 versus Southeast, OR 1.64 versus West, $p<0.01$), with higher PSA levels (OR 2.38 for PSA 5-10 versus 0-2 ng/ml, $p <0.01$) and higher percent core involvement (OR 2.11 for 40-60% versus 0-20%, $p<0.01$). Age at diagnosis, race, insurance, marital, and socioeconomic statuses, and clinical stage were not significant predictors of upgrading.

Conclusion: Multiple patient-level variables predict upgrading on final RP specimen in AS patients. Future population-based studies that account for other significant variables, such as multiparametric magnetic resonance imaging and PSA velocity, are needed to further risk stratify this patient population and enhance their oncologic outcomes.

Funding: N/A

Poster #165

PERFORMANCE CHARACTERISTICS AND IMPACT OF 18F FLUCICLOVINE PET CT ON THE MANAGEMENT OF MEN WITH RECURRENT PROSTATE CANCER

Jamie Michael[1], Amir Khandani, MD[2], Hung-Jui Tan, MD[3], Eric Wallen, MD, FACS[3], Trevor Royce, MD, MPh[4], Young Whang, MD, PHD[3], Marc A. Bjurlin, DO, MSc, FACOS[3]
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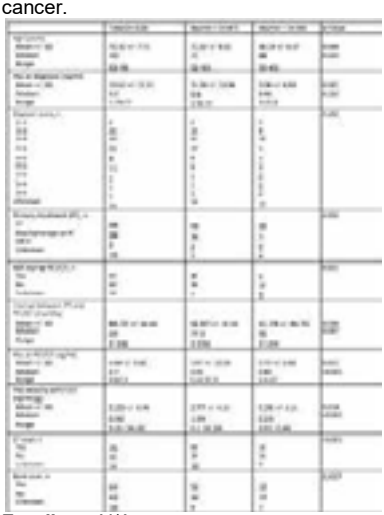
Presented By: Jamie Michael

Introduction: 18-F Fluciclovine (FACBC) PET/CT is indicated for use in men with biochemically recurrent prostate cancer and has the potential to influence patient management. Our study objective was to evaluate the performance characteristics of FACBC PET/CT in detecting recurrent prostate cancer along with its influence on radiotherapy recommendations.
Methods: After obtaining institutional review board approval, we retrospectively collected data from 124 patients who underwent an FACBC PET/CT. Images were evaluated by a single experienced nuclear medicine radiologist prior to data collection. PET/CT performance characteristics were determined by detection of cancer recurrence at PSA levels and anatomical sites. Pre- and post FACBC PET/CT radiotherapy decisions were compared and changes evaluated. T-test were performed for comparison of means, Mann-Whitney Rank Sum for comparison of medians and Chi-squared test for categorical variables.
Results: Of the 124 included men, primary treatment was prostatectomy in 68, external radiotherapy in 32, brachytherapy in 6, and other in 19. The median age was 70 years and PSA 2.91 ng/ml. Men with a positive FACBC PET/CT were older, with higher PSA values and PSA velocities (all <0.05). Detection rates varied with PSA values and improved as PSA level increased with a positive finding at a PSA <1 ng/ml in 11%, 1-<2 ng/ml in 7.7%, and >2 in 67%. The most common site of recurrence was outside of the pelvis (48.9%), followed by the prostate (18.9%) and prostate bed (15.9%). Results of the FACBC PET/CT changed radiotherapy in 48% (24/50) of men with a separate staging CT/MRI and in 5.3% (2/38) of those with a separate staging bone scan.
Conclusion: FACBC PET/CT detects recurrent prostate cancer with improved performance characteristics with increasing PSA levels. The majority of disease is found outside the pelvis. Results of FACBC PET/CT significantly changed radiotherapy management decisions, supporting its use in the staging of men with recurrent prostate cancer.



Funding: N/A

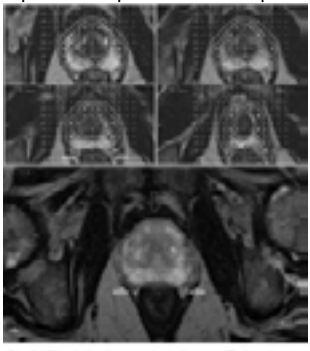
Poster #166
LONG-TERM OUTCOMES OF TWO-STEP PRE-BRACHYTHERAPY TRANSURETHRAL SURGERY IN PATIENTS WITH BLADDER OUTLET OBSTRUCTION AND LOW-TO-INTERMEDIATE RISK PROSTATE CANCER
Obafunbi Abimbola[1], Allie Walsh, P.A.C[1], Dereck McHaffie, MD[2], Michael Haake, MD[2], Chris Teigland, MD[1], James Kearns, MD[1]
[1]Atrium Health Department of Urology, [2]Atrium Health Department of Radiation Oncology
Presented By: Obafunbi Abimbola

Introduction: Permanent seed implantation brachytherapy is a well-established treatment option for patients with low-to-intermediate risk prostate cancer. Based on current guidelines, patients who have undergone a prior transurethral resection of the prostate (TURP) are often deemed poor candidates for brachytherapy due to post-operative urinary toxicity. Previously, our institution reported our clinical experience with performing a limited TURP and/or transurethral incision of the prostate (TUIP) prior to brachytherapy to treat patients with objective bladder outlet obstruction (BOO) and low-to-intermediate risk prostate cancer, showing that this two-step approach is both safe and effective for this population. We report the long-term outcomes of a standardized two-step approach for treatment of patients suffering from BOO with low to intermediate risk prostate cancer.
Methods: We retrospectively reviewed patients who were treated with TURP and/or TUIP prior to prostate brachytherapy between 1998 and 2018. Transurethral surgery was performed prior to brachytherapy in patients who presented with a peak flow rate 15 mL/s and/or an elevated post void residual (> 100 mL) after discontinuing alpha blockers for at least 2 weeks. Patients proceeded to brachytherapy once urethral healing and outlet obstruction had resolved as demonstrated by improved uroflow and post void residual measurements and cystoscopic evaluation of the urethra.
Results: This is a retrospective cohort review of 97 patients who underwent pre-brachytherapy transurethral surgery. Median follow up time was 33 months (range 1-192). Mean International Prostate Symptom Score significantly improved at 1-year post-brachytherapy and remained improved 5-10 years after treatment ($p = 0.01$). No patients developed new persistent urinary retention, urethral necrosis, or urinary incontinence after brachytherapy, and no patient required a transurethral or reconstructive procedure for urinary retention after brachytherapy. Median PSA at follow up remained significantly lower than PSA at presentation for >10 years ($p < 0.01$). No patient developed measurable metastatic disease or died from prostate cancer.
Conclusion: Performing a limited TURP or TUIP 8 weeks prior to brachytherapy seed implantation does not result in significant urinary toxicity after seed implantation in patients with low-to-intermediate risk prostate cancer and objectively measured bladder outlet obstruction. Our results suggest that current guidelines recommending against brachytherapy in men with significant bladder outlet obstruction should be revised.
Funding: N/A

Poster #167
INITIAL RESULTS OF MRI BASED PROSTATE BRACHYTHERAPY: EXPLORING VIABLE, COST-EFFECTIVE, AND SUPERIOR ALTERNATIVE TO TRUS BASED SURGERY
Eric Wendel, MD, Raj Mitra, PhD, Jacob Anderson, MD, Troy Scroggins, MD
Ochsner Medical Center
Presented By: Eric Wendel, MD

Introduction: Trans rectal ultrasound (TRUS) guided prostate brachytherapy (BT) has been the standard of practice for several decades. With increasing use of MRI for prostate cancer, we initiated replacing TRUS with MRI for planning prostate BT to potentially decrease costs and anesthetic exposure while maintaining an accurate therapeutic effect.
Methods: Preplanning for prostate BT was performed using T2 axial MRI scans. The images were re-oriented in the sagittal plane to simulate a virtual endorectal probe used

in the traditional TRUS mapping, and the study set was resampled into 5mm thick image slices. Possibility of pubic arch interference (PAI) was evaluated using the 1.0 cm overlap rule published previously by various authors. Preimplant planning was performed to optimize seed placement to deliver the dose prescribed by the Radiation Oncologist.
Results: A retrospective review of 13 cases was performed. Patients included in this study included low risk (1), favorable intermediate risk (6), unfavorable intermediate risk (2) and high risk (3). PSA range was 4.8 to 22.1 (Mean = 8.6, SD = 5.0) and Gleason Score ranges were 6, 7 or 8. Prostate volume measured on MRI images ranged from 21.3 cc to 42 cc (Mean = 33.3, SD = 7.6). Palladium 103 radioactive seeds were used for all cases, with a prescription dose of 125 Gy or 100 Gy for monotherapy or boost after external beam therapy (EBRT). Post implant dosimetry based on CT imaging showed excellent outcomes for Evaluation Target Volume (ETV) V90 (Mean = 96.5%, SD = 2.2), Rectum V100 (Mean = 0.41 cc) and Bladder V100 (Mean = 0.43 cc). These dosimetric evaluation indices indicate excellent implant quality, based on the guidelines published by the American Brachytherapy Society.
Conclusion: Initial results from this new technique indicate a viable and possibly superior methodology using MRI for prostate BT. Compared to conventional TRUS based implants, we have found MRI based planning to be significantly superior in identification of the dorsal venous plexus, accurate delineation of the prostatic apex, and selective boosting of hypointense regions on MRI. This also eliminates the preimplant TRUS procedure and should translate to significant reduction in cost and anesthetic exposure for prostate cancer patients.



Funding: N/A

Poster #168
HOW TUMOR SPECIFIC CD8 T CELL ACTIVATION IN DRAINING LYMPH NODES SUPPORTS THE ANTI-TUMOR CD8 T CELL RESPONSE
Nataliya Prokhnevska, Rajesh Valanparambil, Caroline Jansen, Viraj Master, Martin Sanda, Haydn Kissick
Emory University
Presented By: Nataliya Prokhnevska

Introduction: CD8 T cells are a critical part of the immune response to human cancer, with CD8 T cell infiltration predicting disease progression in many types of cancer. With the increased use of immunotherapies to treat many cancers understanding what leads to highly CD8 T cell infiltrated tumors is crucial in the improvement of these therapies. Especially since the number of CD8 T cells within the tumor has been shown to predict the response to anti-PD1 blockade and survival. Understanding how tumor-specific CD8 T cells activate and differentiate to produce an effective CD8 T cell response with both stem-like CD8 T cells and effector CD8 T cells is crucial to determining why certain tumors are highly infiltrated by CD8 T cells while others are not.
Methods: To understand how tumor-specific CD8 T cells respond to prostate cancer I have made a prostate cancer model which expresses a tumor-specific antigen. We have

used this model to study tumor-specific CD8 T cell activation in a prostate cancer model, and compare to the phenotype of CD8 T cells in human prostate tumor draining LN and tumors.
Results: We have found when tumor-specific CD8 T cells are activated they acquire an undifferentiated but activated program, upregulating CD44, PD1 but retaining high TCF1 and CD62L expression. These undifferentiated activated CD8 T cells do not acquire a typical effector program that is seen in an acute viral infection. This undifferentiated activated CD8 T cell phenotype is recapitulated in human prostate tumor draining lymph nodes, where PD1+ CD8 T cells retain TCF1 and CD28 expression and fail to upregulate effector markers.
Conclusion: Tumor-specific CD8 T cells do not acquire an effector program after activation and instead gain an undifferentiated but activated phenotype in the tumor draining lymph nodes. Based on this we hypothesize that tumor-specific CD8 T cells are activated in the TDLN and differentiate further within the tumor, promoting the anti-tumor CD8 response.
Funding: 1-R00-CA197891

Poster #169
LATE DOSING OF LUTEINIZING HORMONE-RELEASING HORMONE AGONISTS AND TESTOSTERONE LEVELS >20NG/DL IN PROSTATE CANCER
Vahan Kassabian, Director[1], Stuart Atkinson, VP Medical Affairs[2], Deborah Boldt-Houle, Director of Medical Affairs[2], Lucio Gordan, President[3]
[1]Atlanta Prostate Center and Advanced Therapeutics, [2]Tolmar Pharmaceuticals, Inc, [3]Florida Cancer Specialists Research Institute
Presented By: Vahan S. Kassabian, MD

Introduction: Luteinizing hormone-releasing hormone (LHRH) agonists are the most frequently used drugs for the delivery of androgen deprivation therapy (ADT) for prostate cancer (PCa). Increasing evidence suggests achieving and sustaining very low testosterone (T) levels at <20ng/dL with ADT is desirable and correlates with improved disease-specific survival in patients with advanced PCa. However, T levels may rise above castration level (50ng/dL) between injections, especially if a subsequent dose is delayed. When patients have disease progression indicated with an increase in prostate-specific antigen (PSA) level, it is unclear whether the progression is due to late injections or inadequate treatment efficacy. This current study evaluated the timeliness of LHRH dosing, subsequent rate of T breakthroughs and frequency of T and PSA testing prior to dosing in PCa patients.
Methods: A retrospective review of electronic medical records and associated claims data (1/1/07-6/30/16) of LHRH agonist injections (n=85,030) evaluated the frequency of late dosing (defined as occurring after day 32, 97, 128, 194 for 1-, 3-, 4-, 6-month formulations, respectively), T tests >20ng/dL and frequency of T/PSA tests prior to dosing.
Results: 26.9% of injections were late: 14.4% were 1 week late, 3.1% were between 1-2 weeks late and 9.4% were >2 weeks late. 43% of T values exceeded 20ng/dL for late injections; while only 21% exceeded this level for early/on-time injections. 83% of LHRH injections had a PSA value drawn prior to dosing; however, only 13% had a similarly timed T assessment.
Conclusion: Across LHRH agonists, greater than a quarter of injections were late. When LHRH agonist dosing was late, the proportion of T tests with T >20ng/dL increased compared to when the dosing was early/on-time. Late injections were correlated with ineffective T suppression (above 20ng/dL) over 40% of the time when comparing across all formulations. For all injections, T levels were not monitored as frequently as PSA levels. Considering the clinical benefits of maintaining effective T suppression throughout the course of ADT, clinicians should administer treatments within approved dosing instructions, routinely monitor T levels and consider prescribing treatments with proven efficacy through the dosing interval to maintain T below castration levels.
Funding: Tolmar Pharmaceuticals, Inc.

Poster #170
WHOLE GLAND CRYOABLATION OF THE PROSTATE: SIXTEEN YEAR EXPERIENCE AT A SINGLE INSTITUTION

Elizabeth Tourville, Daniel Zapata, Monica O'Hanlon, Brad Houston, Chrissy Callaway, Anthony Patterson, Robert Wake
University of Tennessee Health Sciences Center, Department of Urology, Memphis, TN
Presented By: Elizabeth Tourville, MD

Introduction: Cryoablation of the prostate (TCAP) is a primary treatment option for patients with clinically localized prostate cancer (CaP). It is a particularly appealing option in patients who wish to undergo treatment but are poor surgical candidates and do not desire radiation therapy (RT). Compared to RT and radical prostatectomy (RP), there remains limited data regarding long term results after TCAP. Therefore, we analyzed our data to assess oncological outcomes in patients undergoing TCAP at a single institution over a 16-year period.
Methods: We retrospectively reviewed the records of 156 patients who underwent TCAP from 2003-2018 at the Memphis Veterans Affairs Medical Center. Data collected for analysis included demographic, clinical, pathological, and oncological information.
Results: 121 patients underwent TCAP as primary treatment for CaP over a 16-year period at a single institution who met inclusion criteria. Of these patients, 63 (52%) were Black, 57 (47%) were White, and 1 (0.8%) was Asian. The average age at diagnosis was 63 years old with a mean BMI of 29.7. Mean PSA at time of diagnosis was 8.15ng/ml. There were 20 patients (16.5%) who underwent neoadjuvant androgen deprivation therapy to decrease prostate volume. There were 42 patients (34.7%) with Gleason Grade Group (GG) 1, 44 (36.4%) with GG 2, 29 (24%) with GG 3, 4 (3.3%) with GG 4, and 2 (1.7%) with GG 5. 55 patients (45.5%) experienced biochemical recurrence at a median of 28.57 months. Post-op complications included acute urinary retention (9.1%), chronic retention (0.8%), epididymoorchitis (1.6%), and sepsis (1.6%). The median follow-up was 8.13 years with 7 patients (5.8%) developing metastatic disease. Only 1 patient (0.8%) died from prostate cancer related causes.
Conclusion: Our retrospective review demonstrated a 45.5% BCR rate among veterans who underwent primary TCAP with a median follow-up of 8.13 years. Although this is slightly higher than national BCR rates after RP (20-40%), it is comparable to BCR rates after RT (30-50%). Our study population is unique in that many veterans are not ideal candidates for extirpative surgery. Therefore, we believe that TCAP is a safe, effective option with comparable BCR rates to RT for patients that desire potentially curative therapy and cannot tolerate major surgery.
Funding: N/A

Annual Business Meeting Agenda

Friday, March 20, 2020

I. Report from the President – Glenn M. Preminger, MD

II. Approval of the Minutes of the 2019 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. Nominating Committee Report – Dean G. Assimos, MD
    a. Elections
2. 2020 Local Arrangements Committee – Glenn M. Preminger, MD
3. Committee on Education and Science – Chad W.M. Ritenour, MD
4. Bylaws Committee – Nicole Miller, MD
5. Finance Committee – Gerard D. Henry, MD
6. Membership Committee – Rolando Rivera, MD, FACS
7. Health Policy Committee – Jonathan Henderson, MD

VII. Representative to the Board of Directors of the AUA – Martin K. Dineen, MD, FACS

VIII. Future Sites Committee – Jack M. Amie, MD

IX. Honorary Members – Glenn M. Preminger, MD
    a. Election of Honorary Members

X. New Business
    a. Introduction of Incoming President

XI. Adjournment

Minutes of the 83rd Annual Business Meeting
SESAUA Annual Business Meeting
MINUTES
Saturday, March 16, 2019

I. Report from the President – Scott B. Sellinger, MD, FACS

Dr. Scott Sellinger called the 2019 Southeastern Section Annual Business Meeting to order at 10:16 a.m. on Saturday, March 16, 2019. Dr. Sellinger stated that he attended all state urological societies with the exception of the South Carolina Urological Association Annual Meeting which was cancelled due to weather. He congratulated Dr. Raju Thomas for being elected as the Southeastern Section nominee for the AUA President-Elect.

II. Adoption of the Agenda – Scott B. Sellinger, MD, FACS

Dr. Scott Sellinger asked for approval from the membership to move the nominating committee report and elections to the first report given under the committee reports.

Action: The adoption of the agenda was approved as presented.

III. Approval of the Minutes of the 2018 Annual Business Meeting – S. Duke Herrell III, MD, FACS

Dr. S. Duke Herrell III presented the minutes of the 2018 Annual Business Meeting to the membership for approval. There was a request to add language to the minutes under the Action item for Dr. Raju Thomas' appointment as SESAUA Alternate Representative to the AUA Board of Directors that states *"Subsequent to the election, the Southeastern Section was notified by the AUA that this election should not have occurred. The Executive Committee concurred and therefore this election was null and void."*

Action: The clause was approved to be included in the minutes of the 2018 Annual Business Meeting.

Action: The minutes of the 2018 Annual Business Meeting were approved as amended.

IV. Secretary Report – S. Duke Herrell III, MD, FACS

Dr. Herrell thanked Dr. Chad Ritenour and the other members of the Committee on Education and Science for their assistance in planning the 2019 scientific program. He also thanked those who participated on the program this year. The abstract acceptance rate was 75.4% which was up 12% from 2018.

V. Treasurer Report – David M. Kraebber, MD

Dr. David Kraebber stated that the section is in good financial order. The fund balance as of December 31, 2018 totaled $5,259,844. There was a total net loss of $381,306 which included investment losses of $312,954 and philanthropic & scholarship expenses of $149,172. The SESAUA investments are held at Vanguard and as of December 31, 2018 the investments totaled $5,128,070 including $1,774,043 in Fixed Income and $3,354,027 in Equity. As of January 31, 2019 the SESAUA investments were back up totaling $5,428,584.

VI. Historian Report - Paul W.F. Coughlin, MD, FACS

Dr. Paul Coughlin asked for a moment of silence as he read the names of the SESAUA members who passed away this year: Edward Ackerman,

MD, John Adams Sr., MD, Manuel Coto, MD, William Frohbose, MD, Michael Lake, MD, Toxey Morris, MD, Tom Nesbitt Sr., MD, Keith Peterson, MD, Neil Price, MD, Josiah Reed Jr., MD, Mario Riveron, MD, George Sivak, MD, Louis Sonne, MD, Eugene St. Martin, MD and Alan Treiman, MD.

VII. Committee Reports

1. Nominating Committee Report – Jack M. Amie, MD

Dr. Jack Amie presented the nominating slate for the Southeastern Section Board of Directors to the membership for approval:

President Elect: Ricardo Sanchez-Ortiz, MD
Alabama Alternate Representative: Jason Burrus, MD
Florida Representatives: Alan Miller, MD; Joseph Costa, DO
Florida Alternate Representatives: Yvonne Koch, MD; Rolando Rivera, MD
Kentucky Representative: Ganesh Kartha, MD
Kentucky Alternate Representative: Ahmad Mohammed, MD
Louisiana Representatives: Joanna Togami, MD; Kenneth Perego, MD
Louisiana Alternate Representatives: Daniel Canter; Alexander Gomelsky, MD
Mississippi Alternate Representative: Vacant
North Carolina Representative: Lydia Laboccetta, MD
North Caroline Alternate Representatives: Ryan Terlecki, MD; Jonathan Hamilton, MD
Tennessee Representatives: Timothy Duffin, MD; Wesley White, MD
Tennessee Alternate Representatives: Ryan Pickens, MD; Joe Mobley III, MD, Ryan Hsi, MD

Action: The nominations for the SESAUA Board of Directors were approved as presented.

The Nominating Committee then nominated Dr. Martin Dineen as Southeastern Section Representative to the AUA Board of Directors. Dr. Scott Sellinger opened the floor for additional nominations. Drs. Raymond Leveillee and Gopal Badlani were nominated from the floor. Each candidate was given two minutes at the podium to state their interest in the position. Dr. Scott Sellinger requested a motion that the lowest vote receiving member be dropped from the second ballot should a majority vote not be obtained in the first election.

Action: The lowest vote receiving member will be dropped from the second ballot.

A written vote was taken and the votes were tabulated. 61 votes were cast and the number necessary to elect was 31.

Action: Dr. Gopal Badlani had the least number of votes and was removed from the second ballot.

Drs. Raymond Leveillee and Martin Dineen remained nominees for the position. A second written vote was taken and the votes were tabulated. 61 votes were cast and the number necessary to elect was 31.

Action: Dr. Martin Dineen was elected as the SESAUA Representative to the AUA Board of Directors.

The Nominating Committee then nominated Dr. Gopal Badlani as the Southeastern Section Alternate Representative to the AUA Board of Directors. Dr. Scott Sellinger opened the floor for additional nominations. Dr. Raymond Leveillee was nominated from the floor. A written vote was taken and the votes were tabulated. 57 votes were cast and the number necessary to elect was 29.

Action: Dr. Raymond Leveillee was elected as the SESAUA Alternate Representative to the AUA Board of Directors.

Dr. Scott Sellinger stated that Dr. Gregory Murphy's second term as the Member-at-Large on the SESAUA Nominating Committee was expiring and needed to be replaced. He asked for nominations from the floor for the Member-at-Large position on the 2019-2020 SESAUA Nominating Committee. Drs. Peter Clark and Kevin Lee were nominated from the floor. In accordance with the bylaws no more than two members of the committee may reside from the same state, therefore Dr. Kevin Lee's nomination was not accepted.

Action: Dr. Peter Clark was elected as the Member-at-Large on the 2019-2020 SESAUA Nominating Committee.

2. **2019 Local Arrangements Committee – Scott B. Sellinger, MD, FACS**
Dr. Scott Sellinger thanked everyone for their attendance at the annual meeting.

3. **Committee on Education and Science – Chad W.M. Ritenour, MD**
Dr. Chad Ritenour thanked the members of the Committee on Education and science for their assistance with the planning of the scientific program. He thanked those who assisted with the abstract review process and stated that the section had record submissions this year.

4. **Bylaws Committee – Nicole Miller, MD**
No report was given.

5. **Finance Committee – Gerard D. Henry, MD**
Dr. Gerard Henry stated that the committee visited with the exhibitors and encouraged them to support a hands-on course at a future SESAUA annual meeting. In addition the committee will be sending a letter to companies that are not currently supporting the SESAUA annual meetings to encourage them to support future meetings.

6. **Membership Committee – Chad W.M. Ritenour, MD**
Dr. Chad Ritenour thanked the membership for allowing him to serve as Chair of the Membership Committee. He presented the candidates and transfers for SESAUA membership.

Action: The SESAUA candidates and transfers were approved as presented.

7. **Health Policy Committee – Jonathan Henderson, MD**
Dr. Jonathan Henderson provided a brief report on the current activities of the Health Policy Council.

VIII. Representative to the Board of Directors of the AUA – Thomas F. Stringer, MD, FACS

Dr. Thomas Stringer provided a brief overview on the organizational structure and current activities of the AUA. He thanked the membership for allowing him to serve as the SESAUA Representative to the AUA Board of Directors for the past five years. He encouraged the membership to attend the AUA 2019 Annual Meeting that will be held in Chicago, IL.

IX. Future Sites Committee – Jack M. Amie, MD

The SESAUA 2020 Annual Meeting will take place March 18-21, 2020 at The Roosevelt Hotel in New Orleans, LA. The SESAUA 2021 Annual Meeting will take place at The Omni Nashville Hotel in Nashville, TN April 21-24, 2021. The SESAUA 2022 Annual Meeting will be held March 16-19, 2022 at the El Conquistador Resort in Fajardo, Puerto Rico.

X. Honorary Members – Scott B. Sellinger, MD, FACS

The following guest speakers and past presidents were presented to the membership for approval of honorary membership:

Guest Speakers: David C. Miller, MD, MPH, Leonard G. Gomella, MD, FACS, Stephen Y. Nakada, MD, FACS, FRCS (Glasg.), Gary M. Kirsh, MD, Ben B. Rubinowitz, JD, Erik P. Castle, MD, FACS, Oliver Sartor, MD, Mitchell R. Humphreys, MD and Cheryl T. Lee, MD.

SESAUA Past Presidents: Jon S. Demos, MD and Jerry E. Jackson, MD, FACS

Action: The guest speakers and SESAUA Past Presidents were approved for SESAUA Honorary membership.

XI. New Business

a. Introduction of Incoming President

Dr. Scott Sellinger presented Dr. Glenn Preminger as the 2019-2020 President of the Southeastern Section of the American Urological Association, Inc.

XII. Adjournment

The Southeastern Section of the AUA, Inc. 2019 Annual Business Meeting adjourned at 11:05 a.m.

Respectfully Submitted,
Samantha N. Panicola
SESAUA Associate Director

Proposed Bylaws Change

ARTICLE XI

RULES OF ORDER

~~Sturgis Standard Code of Parliamentary Procedure, current edition,~~ **The current edition of Robert's Rules of Order, Newly Revised** shall govern the proceedings of the Section unless otherwise provided in these Bylaws.

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
2. Senior Members
3. Associate Members
4. Allied Members
5. Honorary Members
6. Corresponding Members
7. Candidate 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 or 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 Member-ship 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:

Omar Benitez, MD
Ft. Myers, FL

William R. Chapman II, MD
Huntsville, AL

Stanley D. Chovnick, MD
Palm Harbor, FL

Donald Comiter, MD, JD, MBA
Lighthouse Point, FL

Jack M. Graham, MD
Spartanburg, SC

Edward H. Ray Jr., MD
Lexington, KY

John F. Rhodes, MD
Raleigh, NC

J. Douglas Trapp, MD
Augusta, GA

Harvey C. Walker, MD
Anderson, SC

W. Bedford Waters, MD
Knoxville, TN

Preliminary Treasurer's Report

The SESAUA fund balance as of December 31, 2019 totals $6,153,975 and reflects an operating income of $894,305 for the year end of 2019. We had another successful Annual Meeting with a profit of $148,193. There were significant investment increases. We made a complete recovery from the market downturn in the 4th quarter of 2018 with investment income in 2019 of $827,429. We have assets of $232,084 in the JP Morgan checking account and $95 in savings. SESAUA investments are held by Vanguard.

As of the period end December 31, 2019:

Fixed Income:	$1,922,437	31%
Equities:	$4,250,282	69%
TOTAL:	$6,172,719	100%
Market Gain:	$827,429	
Interest:	$219,548	

Vanguard managed our investments for fees of only $2,328 or 0.22% of our total investments. This is thanks to our collaboration with the AUA investments.

The SESAUA financial picture continues to improve. There were excellent revenues from the Annual Meeting thanks to WJ Weiser & Associates securing $458,100 in corporate support, an increase of $13,000 over 2018. We must all take individual time to speak with our corporate sponsors and let them know how much we value their continued support.

Highlights for 2019 are:

Net Income of $894,305

Total Income of $1,944,653

Expense for the period, $1,050,348 was mostly represented by Annual Meeting expense. 1,467 members have paid their annual dues with 4 members unpaid. We collected $139,000 in meeting registration and $254,490 in dues.

Total Assets: $6,501,847

We are proud to have supported Philanthropic & Scholarship needs for $237,976. Again, we supported out residents with significant travel and awards of $97,450. We have a net profit without investment income of $66,877, including $96,951 of pre-paid deposits and $91,300 to the AUA Foundation.

It has been an honor to serve the SESAUA as Treasurer for the past 3 years. I have been able to report exceptional financial growth at minimal cost secondary to the investment management of The Vanguard Group. Our investments have increased from $4,916,347 to $6,172,719 from 2016 to 2019 and an increase of $1,256,372. Secondary to excellent management by the WJ Weiser group corporate support has increased from $414,225 to $458,100. Annual Meeting profits from 2016 to 2019 have been $452,447. We have also made scholarship and philanthropic donations over 3 years of $571,869.

Thank you for electing me to serve as your Treasurer for the last three year. I look forward to my continued service to the section.

Respectfully submitted,

David M. Kraebber, MD
SESAUA Treasurer

Membership Candidates and Transfers

* *Application not complete*

APPLICANTS

Active
BOUET, MD, Rafael
HSIA, MD, Michael
KARTHA, MD, Ganesh
KHETERPAL, MD, Emil
KHEYFETS, MD, Steven
KOZINN, MD, Spencer
MARTINEZ, MD, Daniel
MILES, MD, Ruth
RUKSTALIS, MD, Daniel
SACHEDINA, MD, Nasheer
SLEEPER, MD, Joshua
STOREY, MD, Benjamin
WHELAN, MD, Patrick

ACTIVE APPLICANTS: 13

Affiliate
ALLMOND, FNP Lynn

AFFILIATE APPLICANTS: 1

Associate
BRUGIATI, MD, Carlos
LANGFORD, DO, FACOS, Carolyn
LATEFI, DO, Ali
WHITE, MD, PhD, Jeffrey
WOOD, MD, Kyle

ASSOCIATE APPLICANTS: 5
TOTAL APPLICANTS: 19

INTERNAL TRANSFERS

To Active Membership
WALLEN, MD, Jared
CHRISTIANSEN, MD
FAERBER, MD, Gary
SEIXAS-MIKELUS, MD, Stefanie
STEINBERGER, MD, Richard

TO ACTIVE MEMBERSHIP INTERNAL TRANSFERS: 5

To Senior Membership
BOUCHARD Jr., MD Maurice
FROHBOSE, MD, Frederick
MEGGINSON, MD, A.
RANSLER III, MD, Charles
SHERLAG, MD, Anthony
WILFONG, MD, Walter

TO SENIOR MEMBERSHIP INTERNAL TRANSFERS: 6
TOTAL INTERNAL TRANSFERS: 11

Report of the SESAUA Representative to the AUA Board of Directors

The Board of Directors of the AUA recently concluded a mid-winter meeting in Santa Barbara, California on February 8 – 11, 2020. This is my first annual report updating the Board of Directors of the SESAUA regarding the activities of the AUA.

I have attached the Combined Executive Summary from the February meeting which briefly reports upon the myriad of activities that we all can be proud of as members of the American Urological Association. That said, I will point out a few of the items that are of particular interest to members of the Section.

AUA-President Elect: Dr. Raju Thomas from Tulane was approved as our Section's nominee for the office the President-Elect (2020-2021) ascending to President (2021- 2022) and then to Immediate Past President (2022-2023).

The AUA 2020 Practice Management Program is now integrated into the AUA Annual Meeting WITHOUT a separate registration fee.

The AUA Annual Census update shows a total of 13,044 practicing urologists in the United States in 2019. (The AUA claims > 20,000 actual members worldwide) That census closed in September of 2019 and will be published in April 2020.

Position on Violence: The board has been asked by others for a position statement on gun violence in our country. The Board felt strongly that it should take a position on ALL violence, of any type, as a major health concern. "Violence of any type is a major health concern to our members, their patients, and society. The AUA believes that more research into the causes of violence, improved access to mental health care, and enhanced public education are important steps to address this disturbing problem."

Annual Urology Summit: The Summit was held in Washington, DC on March 16-18, 2020 with more than 275 registrants at the Hyatt Regency on Capitol Hill. The AUA board recognized the conflict in scheduling between our Section meeting and the Summit and discussions are underway to help prevent such a conflict in the future so that more of our members may participate in this important advocacy event.

Gallagher Scholar: Robert Bass, MD, of our Section, was named the 2020 Gallagher Scholar for a term of one year from January 1, 2020 to December 31, 2020.

Finance: On December 31, 2019, our investment portfolio (including $142 million restricted funds) was approximately $209 million. A year ago, Dr. Stringer reported a consolidated budget deficit of $3.7 million. As of November 30, 2019, this was reduced to $2.0 million (excellent market conditions at the time).

I have been involved in Urological Health Policy issues since nearly the start of my residency in July of 1980. This is something that has been a passion of mine for many years. That said, indoctrination into the issues that face our AUA board of 13 members (8 section reps and 5 executive officers) has been daunting. We are told that we each spend a minimum of 17 days away from our practices attending to the needs of the AUA with additional time spent on committee assignments. So with this privilege comes significant responsibility. I am grateful to have been given the opportunity in this capacity as our Section Representative to the Board of Directors of the AUA and look forward to the next few years of service to our organization.

Marty Dineen, MD
SESAUA Representative to the AUA Board of Directors

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: Vipul R. Patel, MD, FACS
President-Elect: Jamin Brahmbhatt, MD, FACS
2020 Meeting: September 3 - 6, Miami Beach, FL

Georgia Urological Association
President: Rabii Madi, MD
President-Elect: James B. Kay IV, MD
2020 Meeting: September 17 - 20, Sea Island, GA

Kentucky Urological Association
President: Katie Ballert, MD
2020 Meeting: To Be Announced

Louisiana Urological Society
President: Kenneth L. Perego II, MD
President-Elect: Joanna M. Togami, MD
2020 Annual Meeting: April 16 - 19, Alexandria, LA

Mississippi Urologic Society
Information not available at time of printing

North Carolina Urological Association
President: Ryan P. Terlecki, MD, FACS
President-Elect: Michael Ferrandino, MD
2020 Meeting: October 3, Greensboro, NC

Puerto Rico Urological Association
President: José Fournier Rebollo, MD
President-Elect: Héctor López Huerta, MD
2020 Meeting: October 15 – 17, Isla Verde, PR

South Carolina Urological Association
President: David C. Horger, MD
President-Elect: Thomas B. Willard, MD
2020 Meeting: August 27 - 30, Charleston, SC

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 — President
- Hubert K. Turley Sr., MD; Memphis, TN — President-Elect
- Harold P. McDonald Sr., MD; Atlanta, GA — Secretary/Treasurer

1947 Palm Beach, FL

- Hubert K. Turley Sr., MD; Memphis, TN — President
- Robert P. McIver, MD; Jacksonville, FL — President-Elect
- Harold P. McDonald Sr., MD; Atlanta, GA — Secretary/Treasurer

1948 Hollywood Beach, FL

- Robert P. McIver, MD; Jacksonville, FL — President
- Harold P. McDonald Sr., MD; Atlanta, GA — President-Elect
- Russell B. Carson, MD; Vero Beach, FL — Secretary/Treasurer

1949 Boca Raton, FL

- Harold P. McDonald Sr., MD; Atlanta, GA — President
- James J. Ravenel, MD; Charleston, SC — President-Elect
- Russell B. Carson, MD; Vero Beach, FL — Secretary/Treasurer

1950 Edgewater Park, MS

- James J. Ravenel, MD; Charleston, SC — President
- Edgar Burns, MD; New Orleans, LA — President-Elect
- Russell B. Carson, MD; Vero Beach, FL — Secretary/Treasurer

1951 Memphis, TN

- Edgar Burns, MD; New Orleans, LA — President
- Temple Ainsworth, MD; Jackson, MS — President-Elect
- Russell B. Carson, MD; Vero Beach, FL — Secretary/Treasurer

1952 Boca Raton, FL

- Temple Ainsworth, MD; Jackson, MS — President
- W.R. Miner, MD; Covington, KY — President-Elect
- Russell B. Carson, MD; Vero Beach, FL — Secretary/Treasurer

1953 Havanna, Cuba

- W.R. Miner, MD; Covington, KY — President
- Russell B. Carson, MD; Vero Beach, FL — President-Elect
- Sidney Smith, MD; Raleigh, NC — Secretary/Treasurer

1954 Palm Beach, FL

- Russell B. Carson, MD; Vero Beach, FL — President
- Samuel L. Raines, MD; Memphis, TN — President-Elect
- Sidney Smith, MD; Raleigh; NC — Secretary/Treasurer

1955 New Orleans, LA

- Samuel L. Raines, MD; Memphis, TN — President
- Sidney Smith, MD; Raleigh, NC — President-Elect
- Robet F. Sharp Sr., MD; New Orleans, LA — Secretary
- Charles Reiser, MD; Atlanta, GA — Treasurer

1956 Hollywood, FL

- Sidney Smith, MD; Raleigh, NC — President
- Jarratt P. Robertson, MD; Atlanta, GA — President-Elect
- Robet F. Sharp Sr., MD; New Orleans, LA — Secretary
- Charles Reiser, MD; Atlanta, GA — Treasurer

1957 Atlanta, GA

♦ Jarratt P. Robertson, MD; Atlanta, GA	President
♦ Lawrence P. Thackston Sr., MD; Orangeburg, SC	President-Elect
♦ Robet 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
♦ Robet 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

♦ Robet 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	President
Cecil Morgan Jr., MD; Birmingham, AL	President-Elect
David L. McCullough, MD; Winston-Salem, NC	Secretary
Valentine A. Earhart, MD; New Orleans, LA	Treasurer

1998 Birmingham, AL

Cecil Morgan Jr., MD; Birmingham, AL	President
David L. McCullough, MD; Winston-Salem, NC	President-Elect
Anton J. Bueschen, MD; Atlanta, GA	Secretary
Valentine A. Earhart, MD; New Orleans, LA	Treasurer

1999 Charleston, SC

David L. McCullough, MD; Winston-Salem, NC	President
William F. Gee, MD; Lexington, KY	President-Elect
Anton J. Bueschen, MD; Atlanta, GA	Secretary
Valentine A. Earhart, MD; New Orleans, LA	Treasurer

2000 Orlando, FL

William F. Gee, MD; Lexington, KY	President
♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC	President-Elect
Anton J. Bueschen, MD; Atlanta, GA	Secretary
B. Thomas Brown, MD, MBA; Daytona Beach, FL	Treasurer

2001 New Orleans, LA

♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC	President
William F. Gee, MD; Lexington, KY	Past President
Anton J. Bueschen, MD; Atlanta, GA	President-Elect
Joseph A. Smith Jr., MD; Nashville, TN	Secretary
B. Thomas Brown, MD, MBA; Daytona Beach, FL	Treasurer

2002 Naples, FL

Anton J. Bueschen, MD; Atlanta, GA	President
♦ Hector H. Henry II, MD, MPH, MS; Salisbury, NC	Past President
Valentine A. Earhart, MD; New Orleans, LA	President-Elect
Joseph A. Smith Jr., MD; Nashville, TN	Secretary
B. Thomas Brown, MD, MBA; Daytona Beach, FL	Treasurer

2003 Savannah, GA

Valentine A. Earhart, MD; New Orleans, LA	President
Anton J. Bueschen, MD; Atlanta, GA	Past President
B. Thomas Brown, MD, MBA; Daytona Beach, FL	President-Elect
Joseph A. Smith Jr., MD; Nashville, TN	Secretary
Edward O. Janosko, MD; Wilmington, NC	Treasurer

2004 Oranjestad, Aruba

B. Thomas Brown, MD, MBA; Daytona Beach, FL	President
Valentine A. Earhart, MD; New Orleans, LA	Past President
Joseph A. Smith Jr., MD; Nashville, TN	President-Elect
Dennis D. Venable, MD; Shreveport, LA	Secretary
Edward O. Janosko, MD; Wilmington, NC	Treasurer

2005 Charleston, SC

Joseph A. Smith Jr., MD; Nashville, TN	President
B. Thomas Brown, MD, MBA; Daytona Beach, FL	Past President
Culley C. Carson III, MD; Chapel Hill, NC	President-Elect
Dennis D. Venable, MD; Shreveport, LA	Secretary
Edward O. Janosko, MD; Wilmington, NC	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
Dean G. Assimos, MD; Birmingham, AL	Secretary
Jon S. Demos, MD; Lexington, KY	Treasurer

2014 Hollywood, FL

Raymond J. Leveillee; MD, FRCS-G, Cooper City, FL	President
W. Terry Stallings, MD, FACS; Daphne, AL	Past President
Jack M. Amie, MD; St. Simons Island, GA	President-Elect
Dean George Assimos, MD; Birmingham, AL	Secretary
Jon S. Demos, MD; Lexington, KY	Treasurer

2015 Savannah, GA

Jack M. Amie, MD; St. Simons Island, GA	President
Raymond J. Leveillee, MD, FRCS-G; Cooper City, FL	Past President
Jon S. Demos, MD; Lexington, KY	President-Elect
Dean G. Assimos, MD; Birmingham, AL	Secretary
Scott B. Sellinger, MD, FACS; Tallahassee, FL	Treasurer

2016 Nashville, TN

Jon S. Demos, MD; Lexington, KY	President
Jack M. Amie, MD; St. Simons Island, GA	Past President
Dean G. Assimos, MD; Birmingham, AL	President-Elect
Glenn M. Preminger, MD; Durham, NC	Secretary
Scott B. Sellinger, MD, FACS; Tallahassee, FL	Treasurer

2017 Austin, TX

Dean G. Assimos, MD; Birmingham, AL	President
Jon S. Demos, MD, Lexington, KY	Past President
Jerry E. Jackson, MD, FACS; Sumter, SC	President-Elect
Glenn M. Preminger, MD; Durham, NC	Secretary
Scott B. Sellinger, MD, FACS; Tallahassee, FL	Treasurer

2018 Orlando, FL

Jerry E. Jackson, MD, FACS; Sumter, SC	President
Dean G. Assimos, MD; Birmingham, AL	Past President
Scott B. Sellinger, MD, FACS; Tallahassee, FL	President-Elect
Glenn M. Preminger, MD; Durham, NC	Secretary
David M. Kraebber, MD; Wilmington, NC	Treasurer

2019 Phoenix, AZ

Scott B. Sellinger, MD, FACS; Tallahassee, FL	President
Jerry E. Jackson, MD, FACS; Sumter, SC	Past President
Glenn M. Preminger, MD; Durham, NC	President-Elect
S. Duke Herrell, III, MD, FACS; Nashville, TN	Secretary
David M. Kraebber, MD; Wilmington, NC	Treasurer

Future SESAUA Meetings

85th Annual Meeting of the Southeastern Section of the AUA, Inc.
April 21 - 24, 2021
Omni Nashville Hotel
Nashville, Tennessee

86th Annual Meeting of the Southeastern Section of the AUA, Inc.
March 16 - 19, 2022
Sheraton Puerto Rico Hotel & Casino
San Juan, Puerto Rico

Southeastern Section of the AUA, Inc.

SESAUA
2020
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