Oral Health During Pregnancy: It’s Important, Necessary and Safe

Presented by
Janatha Grant, CRNP, FNP-BC

Course Objectives

• Understand the safety of delivering dental care during pregnancy
• Describe the evidence-based guidelines for delivering dental care during pregnancy
• Describe how the primary caregiver’s oral health can impact the oral health of their infant or toddler
• Discuss transmission of bacteria from primary caregiver to child

Why is oral health care important for pregnant women?

• Control oral disease
• Promote link between oral and systematic health
• Influence attitudes and behaviors during a receptive period
• Provide care before the mother is busy with her infant’s needs
Over the past two decades, there has been increasing evidence suggesting associations between periodontal disease and conditions such as atherosclerosis, myocardial infarction, stroke, diabetes mellitus, and adverse pregnancy outcomes. In 1996, Offenbacher, et al first reported an association between periodontal disease and PTB.

- Low birth weight babies
- Miscarriages/early pregnancy loss
- Preeclampsia
- Gestational diabetes mellitus

**Dental Care Utilization**

- Pregnant women receive dental care less frequently than the general female population (Juang et al, 2008)
- Women with both private insurance and Medicaid coverage utilize dental care more often than when they are not pregnant (Lidia 2009, Thoele 2008)
WA State Dental Utilization Rates

- 42% of women overall reported receiving dental care during pregnancy (WA DOH PRAMS) *

- 26% of women enrolled in Medicaid received care in 2009 **


** Health Resources and Services Administration, WA State Medicaid Utilization Data, WA, 2010

Statements for Improving Oral health During Pregnancy

- American Academy of Pediatric Dentistry
- American Academy of Pediatrics
- American Academy of Periodontology
- American Academy of Physician Assistants
- American College of Midwives
- American College of Obstetricians and Gynecologists
- American Dental Association

Perinatal Oral Health Guidelines Everywhere

- New York
- California
- Washington
- South Carolina
- American Academy of Pediatric Dentistry
Need For Guidelines - Patient

- Concerns regarding dental care not verbalized to perinatal providers
- Belief poor oral health status during pregnancy is normal
- Low awareness of importance of maternal oral health and relationship to infant's long-term oral health

Need For Guidelines - Perinatal Providers

- Lack knowledge about the importance of oral health status
- Not performing routine assessment and referral of pregnant women into dental care
- Not enough information to provide rationale why attending dental visits is important and respond to concerns

Need For Guidelines - Dental Providers

- Insufficient training combined with lack of experience treating pregnant women in dental school
- Concerns about safety of procedures
- Addressing patient perceptions of risk
- Fear of malpractice suit if something goes wrong with a patient's pregnancy!
Malpractice Myth

- TDIC—ten states & 17,000 insured dentists
- Reports one claim in the past 15 years blaming adverse birth outcome on dental treatment
  No evidence for the claim

More Malpractice Myth

- Dentist Benefits Insurance Company (DBIC)—insures doctors in seven states

“As far as we can determine, no indemnity claims have ever been placed with our company that were the result of dental care given to pregnant women”. DBIC, 2012

Consensus Statement

- 2008-HRSA/MCH convene expert panel on perinatal oral health
- Several recommendations on increasing access to oral health care for pregnant women
- One key recommendation was to convene ADA and ACOG to develop one set of national guidelines, instead of individual state & organizational guidelines
National Consensus Statement
Released August 2102

Key Messages
• Oral health is key to overall health and well-being
• Preventive, diagnostic, and restorative dental treatment is safe throughout pregnancy

National Consensus Statement
Purpose
• Help professionals improve the provision of oral health care services during pregnancy
• Bring about changes in the health care delivery system
• Improve overall STANDARD OF CARE!

Why should dental professionals know about the physiology of pregnancy?
• Two-fold (mother and fetus) responsibility in treating pregnant patient
• Understand fetal development, normal changes during pregnancy and potential oral complications of pregnancy
• Understand effects that dental intervention may have on the woman, her fetus or her baby

CDAF Evidence-based Guidelines, 2010 (pg 28); Reikenm Terezhalmy, 2006
Pregnancy Trimesters

Endocrines Changes
Implications for oral health

• Pregnancy gingivitis
• Pregnancy granuloma
• Tooth mobility

Pregnancy Gingivitis
Clinical Characteristics

• 30-80%
• 2nd-8th month, anterior quadrants
• May bleed very easily
• Preexisting gingivitis may predispose to pregnancy gingivitis
Pregnancy Granuloma (epulis or pregnancy tumor)
Clinical Characteristics

- Occurs in up to 5% of women
- Starts in the 2nd or 3rd month
- Single tumor-like growth (up to 2cm) in an area of gingivitis or recurrent irritation (usually maxillary buccal anterior)
- Usually regresses spontaneous after delivery

Tooth Mobility

- Transient increase in tooth mobility
- Note: pregnancy itself does not result in demineralization of teeth because of fetal calcium needs
- Women DO NOT lose a tooth per pregnancy!

Gastrointestinal Physiologic and Anatomic Changes

- Pressure on the stomach from growing uterus
- Lower esophageal sphincter pressure falls 33-50%
- Progesterone affects GI smooth muscle (decreased motility and prolonged intestinal transit time)
Gastrointestinal Symptoms

- Nausea
- Vomiting
- Heartburn-GE reflux
- Rapid sense of fullness

Gastrointestinal Appetite Changes

- Increase appetite (progesterone effect)
- Increased consumption of food (15-20%)
- Alterations in types of foods desired

Cardiovascular-Physiologic and Anatomic Changes

- Mild ventricular hypertrophy
- Increased cardiac output
- Decreased peripheral vascular resistance
Cardiovascular Sign and Symptoms

- Blood pressure changes
decrease in 2nd trimester
increase in 3rd trimester
- Increase in heart rate
- Heart murmur

Respiratory Changes
Symptoms

- Shortness of breath

- Sensitivity to supine vs upright position

Respiratory: Physiologic and Anatomic Changes

- Edematous mucous membranes

- Diaphragm shifts up due to enlarging uterus

- Tidal volume is increased 30-40%
Cardiovascular & Respiratory Implications for oral health

• Supine Hypotensive Syndrome

Patient positioning that results in compression of the inferior vena cava and aorta will compromise circulation and respiration

Common Complications of Pregnancy of Relevance to Oral Health Care Providers

• Gestational diabetes
• Preterm births
• Preeclampsia

Gestational Diabetes (GDM)

Definition
High blood glucose levels in pregnant women who have never had diabetes

Clinical Characteristics
• 3-7% of pregnancies increasing with the obesity epidemic
• Usually diagnosed at 28 weeks or later
• Increased risk of excessive birth weight
Gestational Diabetes and Periodontitis

- Pregnant women who develop GDM are at greater risk for periodontal disease that women who do not

- If periodontal disease occurs, control of GDM is more difficult

Pre-term Births

**Definition**
Birth that occurs before 37 weeks of pregnancy

**Characteristics**
- Risk factors include poor nutrition, smoking, stress and infections
- Can result in birthweight of infant <2500g (5lbs 5oz)
- Infants at risk for health problems, delayed cognitive dev, diabetes, CVD

PTB and Periodontitis

- Severe periodontitis leads to high levels of prostaglandins in the blood
- High levels of prostaglandins are associated with early uterine contractions, early birth and low birth weight
- Data to date shows that periodontal treatment during pregnancy is safe for mother and fetus and does not alter the rates of preterm birth or low birth weight
Pre-Eclampsia

**Definition**
Abnormal condition of pregnancy characterized by onset of acute hypertension, leakage of protein into the urine

**Characteristics**
- Occurs in 3-6% of pregnancies (Blackburn)
- Occurs after 20 weeks gestation
- Common in nulliparous women, extremes of age, family hx, pre-existing HTN or DM

Preeclampsia and Periodontitis

- Periodontal disease may be associated with preeclampsia (Boggess, 2003)
- PGE@, IL-1 and TNF-a levels from gingival crevicular fluid higher in women with preeclampsia (Oettinger-Barak, 2003)
- “Oral Pathogens have been found in placentas of women with preeclampsia, which imply a possible contribution of periopathic bacteria to the pathogens of this syndrome” (Barak, 2007)

Oral Health During Pregnancy

What is the role of the Prenatal Care Provider?
- Assess oral health status
- Advise about oral health care
- Work in collaboration with oral health professionals
- Provide support services (Case Management)
- Improve health services in the community
What is the role of the Oral Health Care Provider

• Assess oral health status
• Advise about oral health care
• Work in collaboration with perinatal providers
• Provide disease management and treatment

General guidelines for care

• Deliver comprehensive diagnostic, preventive, restorative, and emergency care
• Pregnancy is not a reason to defer routine dental care or treatment of oral health problems
• For healthy pregnancies, it is not necessary to have approval from the prenatal care provider for routine dental care

CDAF Evidence-based Guidelines, 2010

Collaboration with medical

• Build relationships with your primary care medical colleagues
• Offer to be a resource regarding dental questions, e.g. related to diabetes, pulmonary issues, auto-immune issues
• Encourage local prenatal care providers to refer pregnant patients for routine care
Objective: Establish a healthy oral environment for the mother

Provide a definitive treatment plan that includes:

- Patient Hx
- Clinical evaluations including necessary radiographs
- Oral health instruction
- Restorative and urgent as needed

_The goal of treating a pregnant woman is the same as treating any patient_

Specific Guidelines for Care

- Radiographs
- Drugs
- Dental Material
- Preventive and anticipatory guidance: Bacteria transmission, fluoride, chlorexidine

Radiographs during pregnancy

- Utilize as required to complete a full examination, diagnosis and treatment
- Always use a lead apron that covers the abdomen and neck

CDAF Evidence-based Guidelines, 2010
Comparative Radiation Exposures

- Upper GI series 0.330 centigrays
- Chest radiograph 0.008
- Skull radiograph 0.004
- Daily background radiation 0.0004
- Full mouth dental series 0.00001 (with use of apron)

No abnormalities with exposure <5 to 10 centigrays

Drugs-Pharmacologic Considerations

- Changes in maternal metabolism caused by normal physiologic changes of pregnancy
  - GI system
  - Decreased hydrochloric acid that affects ionization and absorption of drugs
  - Delayed gastric emptying increases bioavailability of slowly absorbed drugs
  - Hepatic system-altered biotransformation of drugs and clearance of drugs from the maternal serum

Pharmacologic considerations-\textit{con’t}

- Drugs may reach the fetus and cause harm

Teratogens
- Agents that act irreversibly to alter growth, structure or function of the developing embryo or fetus
- The agent must act during critical periods of embryonic or fetal development (in first 8-10 weeks)
Nitrous Sedation in pregnancy

- Nitrous oxide has impressive safety and is excellent for providing minimal and moderate sedation for apprehensive dental patients
- Pregnant women have lower MAC (minimum alveolar concentration) so will require less nitrous oxide
- Prolonged nitrous exposure should be avoided

*MAC: a measure of the potency of inhalation anesthetic agents
CDAF Evidence-based Guidelines, 2010

Guidelines for using nitrous sedation in pregnancy

- Need to prevent hypoxia, hypotension
- Conduct continuous monitoring of vital signs, maintain 95% or higher oxygen sat (use pulse oximeter)
- Maintain semi-seated position to prevent aspiration
- Assure adequate scavenging or exhaled gases
- When nitrous is administered with oral sedatives or opioids, a clinically significant respiratory depression may occur so only trained knowledgeable personnel should do this

NY State Practice Guidelines; CDAF Evidence-based Guidelines, 2010

Nitrous Sedation in pregnancy con’t

- Remember, KEEP IT SAFE! Always use a pulse oximeter. Minimum O2 sat, 95%!
- Position pts in semi-seated position with pillow under rt hip to keep pressure of fetus off of major vessels and to avoid gastric aspiration
- Check in with pt to ensure they are in a comfortable position
- Avoid long appointments
- Avoid supine hypotension
Should periodontal therapy be provided during pregnancy?

**YES**

Periodontal therapy including scaling and curettage has been shown to be safe and effective in reducing signs of periodontal disease.

Restorative Treatment

“Given the risks associated with untreated dental caries in pregnant women, oral health professionals should recommend prompt treatment of dental caries and, in consultation with the pregnant woman, determine the appropriate options for treatment and restorative materials”.

CDAF Evidence-based Guidelines, 2010 (pg 44)

Dental restorative materials

- Amalgam – inorganic elemental mercury
  - Placement and removal of amalgam may transiently increase blood mercury levels. Use a high speed suction and rubber dam
  - Bruxism and chewing gum may release inorganic mercury
  - No evidence of health risks when safe amalgam practices are used

CDAF Evidence-based Guidelines, 2010
Antibiotics May Be Used During Pregnancy

• Penicillin V
• Amoxicillin
• Erythromycin
• Cephalexin, cephalosporin (Keflex)
• Clindamycin

Antibiotics to Avoid during pregnancy

• Doxycycline
• Tetracycline
• Erythromycin (esolate form, may cause maternal hepatotoxicity)
• Qinolones
• clarithromycin

Anticipatory Guidance-Highlights

• **Mom’s good oral health will improve baby’s oral health**- get any active decay treated before baby’s birth. Less bacteria will be transmitted to baby and baby will be at less risk for cavities
• **Use fluorides**- brush teeth twice daily, floss once daily. Use fluoridated toothpaste, especially before bedtime. Use fluoride mouth rinse as appropriate
Anticipatory Guidance Highlights

con’t

- **Do not delay necessary dental treatment**
  - Tooth decay is caused by germs that are easily transmitted from to infant through saliva and sharing food or utensils.

- Promote healthy eating:
  - Taking good care of mom’s teeth and eating healthy foods will help prevent tooth problems for the child.
  - Limit sweet and high carb snacks such as soda, candy, crackers and chips
  - Eat small amounts of nutritious snacks during the day
  - Discuss food cravings and tips

Protect teeth after vomiting

- Rinse mouth with mix of 1 teaspoon of baking soda in a cup of water. Spit after rinsing

- Do not brush right after vomiting; this can damage the surface of your teeth

The breastfeeding patient

- All local anesthetic can be used
- Opiates usually compatible with breastfeeding
- Avoid aspirin
- Nitrous oxide is safe to use
- Though atbx are found in breastmilk and may cause diarrhea or candidiasis, they are considered safe for use
- The exception is **Tetracycline**
Benefits of dental care during pregnancy summary

- Caries is an infectious, transmissible and preventable disease.
- Getting regular (q 6 mos) dental check-ups will control oral disease, improve oral health and improve quality of life
- Parents who keep their own mouths healthy will help prevent problems for their child
- Dental care is safe, beneficial and recommended during pregnancy
- HCP must adhere to evidence-based guidelines