

## Critically Appraised Topic (CAT)

<b>Project Team:</b>
<b>Group 5B-1</b>
<b>Project Team Participants:</b>
<b>Damien Nelson, Annamarie Ciano, Madison Dolen, Jenny Kim</b>
<b>Clinical Question:</b>
<b>When is the safest time to administer local anesthetic and perform elective dental extractions on a pregnant patient, prior to the fabrication of a 3 unit FPD 17-19?</b>
<b>PICO Format:</b>
<b>P:</b>
<b>Pregnant patients</b>
<b>I:</b>
<b>Dental extractions with local anesthetic</b>
<b>C:</b>
<b>Wait until after the baby is delivered</b>
<b>O:</b>
<b>Successful extraction without complications</b>
<b>PICO Formatted Question:</b>
<b>Do pregnant patients requiring the administration of local anesthetic for elective dental procedures possess an increased risk for adverse complications from the local anesthetic compared to nonpregnant patients?</b>
<b>Clinical Bottom Line:</b>
<b>When is it safe to perform dental extractions on pregnant patients?</b>
<b>Date(s) of Search:</b>
<b>9/24/20, 9/27/20</b>
<b>Database(s) Used:</b>
<b>PubMed</b>
<b>Search Strategy/Keywords:</b>
<b>Pregnant, pregnant patients, pregnant, tooth extractions, dental care, local anesthetic, indications</b>
<b>MESH terms used:</b>
<b>Pregnant, tooth extractions, local anesthetic, dental care</b>
<b>Article(s) Cited:</b>
<ol style="list-style-type: none"> <li>1. Steinberg BJ et al., Oral health and dental care during pregnancy. Dent Clin North Am. 2013 Apr;57(2):195-210.</li> <li>2. Fayans EP et al., Local anesthetic use in the pregnant and postpartum patient. Dent Clin North Am. 2010 Oct;54(4):697-713.</li> </ol>

<b>3. Michalowicz BS et al., Examining the safety of dental treatment in pregnant women. J Am Dent Assoc. 2008 Jun;139(6):685-95.</b>
<b>Study Design(s):</b>
<b>Clinical Practice Guidelines, Randomized Control Trial</b>
<b>Reason for Article Selection:</b>
<ol style="list-style-type: none"> <li>1. Directly answered PICO question. Older, reliable anesthetics are safe during pregnancy. Extractions during second trimester did not experience adverse outcomes. High level of evidence.</li> <li>2. Directly answered PICO question. Article gave a breakdown of each trimester of pregnancy and different risks associated with each trimester. Article suggested a recommended local anesthetic. High level of evidence.</li> <li>3. Directly answered PICO question. Lidocaine is safe to use in the second trimester. Essential dental treatment is safe in the second trimester. High level of evidence</li> </ol>
<b>Article(s) Synopsis:</b>
<ol style="list-style-type: none"> <li>1. Article 1 <ol style="list-style-type: none"> <li>a. Older, reliable anesthetics should be the first choice for local anesthetic</li> <li>b. Few clinical drug trials include pregnant women</li> <li>c. Lidocaine 2% with 1:100,000 epi and Mepivacaine 3% are deemed safe due to their solid track record</li> <li>d. Data from Obstetrics and Periodontal Therapy Trial showed women who received extractions during the second trimester did not experience higher rates of adverse birth outcomes compared to women who did not receive dental treatments</li> </ol> </li> <li>2. Article 2 <ol style="list-style-type: none"> <li>a. Lidocaine is the local anesthetic of choice in the pregnant patient</li> <li>b. Accidental intravascular injection is most problematic during 1<sup>st</sup> and 3<sup>rd</sup> trimester</li> <li>c. First Trimester <ol style="list-style-type: none"> <li>i. Normally used local with epi does not impose an increased risk to mother or developing fetus</li> </ol> </li> <li>d. Second Trimester <ol style="list-style-type: none"> <li>i. Maximum dose of Lidocaine (5 mg/kg without epi or 7 mg/kg with epi) is too small to cause harm to the fetus</li> </ol> </li> <li>e. Third Trimester <ol style="list-style-type: none"> <li>i. No significant contraindications to use the use of Lidocaine with epi</li> </ol> </li> </ol> </li> <li>3. Article 3 <ol style="list-style-type: none"> <li>a. 823 women randomly assigned to either receive essential dental treatment (EDT) at 13-21 weeks gestation, up to 3 months post delivery or to receive no treatment</li> </ol> </li> </ol>

<p>b. EDT in pregnant women at 13-21 weeks' gestation was not associated with an increased risk of experiencing serious medical adverse events or adverse pregnancy outcomes</p> <p>c. Use of topical and local anesthetics are safe in pregnant women at 13-21 weeks</p>
<p><b>Levels of Evidence:</b> (For Therapy/Prevention, Etiology/Harm)</p> <p>See <a href="http://www.cebm.net/index.aspx?o=1025">http://www.cebm.net/index.aspx?o=1025</a></p> <p><input checked="" type="checkbox"/> <b>1a</b> – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)</p> <p><input checked="" type="checkbox"/> <b>1b</b> – Individual RCT</p> <p><input type="checkbox"/> <b>2a</b> – Systematic Review of Cohort Studies</p> <p><input type="checkbox"/> <b>2b</b> – Individual Cohort Study</p> <p><input type="checkbox"/> <b>3</b> – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research</p> <p><input type="checkbox"/> <b>4a</b> – Systematic Review of Case Control Studies</p> <p><input type="checkbox"/> <b>4b</b> – Individual Case Control Study</p> <p><input type="checkbox"/> <b>5</b> – Case Series, Case Reports</p> <p><input type="checkbox"/> <b>6</b> – Expert Opinion without explicit critical appraisal, Narrative Review</p> <p><input type="checkbox"/> <b>7</b> – Animal Research</p> <p><input type="checkbox"/> <b>8</b> – In Vitro Research</p>
<p><b>Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews</b></p> <p>See article <b>J Evid Base Dent Pract 2007;147-150</b></p> <p><input checked="" type="checkbox"/> <b>A</b> – Consistent, good quality patient oriented evidence</p> <p><input type="checkbox"/> <b>B</b> – Inconsistent or limited quality patient oriented evidence</p> <p><input type="checkbox"/> <b>C</b> – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening</p>
<p><b>Conclusion(s):</b></p> <ol style="list-style-type: none"> <li>1. Elective dental procedures are safe during pregnancy</li> <li>2. Second trimester is the safest time to perform procedures</li> <li>3. Lidocain is the local anesthetic of choice</li> <li>4. Care needs to be taken during all trimesters to prevent intravascular injections.</li> </ol>

