Oral Health and Pregnancy outcomes

Anil Kaul MD, DDS, MPH

ABSTRACT: Oral health is an important component of general health and should be maintained during pregnancy and through a woman’s lifespan. Maintaining good oral health may have a positive effect on cardiovascular disease, diabetes, and other disorders. In 2007–2009, 56% of U.S. women did not visit a dentist during pregnancy. Optimal maternal oral hygiene during the perinatal period may decrease the amount of caries-producing oral bacteria transmitted to the infant during common parenting behavior, such as sharing spoons. Some studies have shown a possible association between periodontal infection and preterm birth, and these studies do not raise any concern about the safety of dental services during pregnancy. To potentiate general health and well-being, women should routinely be counseled about the maintenance of good oral health habits throughout their lives as well as the safety and importance of oral health care during pregnancy.

KEY WORDS: Pregnancy; Oral Health; Prophylaxis;

Oral health, including health of the gums, teeth, and jawbone, is a reflection for general health and well-being (1). The World Health Organization Global Oral Health Program emphasizes this interrelation and notes that oral health is a determining factor for quality of life (2). Oral health disorders, such as periodontitis, are associated with many disease processes, including cardiovascular diseases, diabetes, Alzheimer disease, respiratory infections, as well as osteoporosis. These are all significant diseases that affect women across the lifespan (3-9). The prevention and treatment of these disorders are essential for general well-being.

Pregnancy

Pregnancy is a unique period during a woman’s life and is characterized by complex physiological changes, which may adversely affect oral health. At the same time, oral health is key to overall health and well-being. Preventive, diagnostic, and restorative dental treatment is safe throughout pregnancy and is effective in improving and maintaining oral health.

Physiologic changes during pregnancy may result in noticeable changes in the oral cavity (10-12). These changes include pregnancy gingivitis, benign oral gingival lesions, tooth mobility, tooth erosion, dental caries, and periodontitis. It is important to reassure women about these various changes to the gums and teeth during pregnancy and to reinforce good oral health habits to keep the gums and teeth healthy.

However, health professionals often do not provide oral health care to pregnant women. At the same time, pregnant women, including some with obvious signs of oral disease, often do not seek or receive care. In many cases, neither pregnant women nor health professionals understand that oral health care is an important component of a healthy pregnancy.

Periodontal Disease and Pregnancy Outcomes

Approximately 40% of pregnant women have some form of periodontal disease (13). Periodontal disease during pregnancy is most prevalent among women who are African American, cigarette smokers, and users of public assistance programs. A study conducted in 1996 showed an association between maternal periodontal disease and preterm birth (14). Since then, other
studies have supported this conclusion (15, 16). Theoretically, blood-borne gram negative anaerobic bacteria or inflammatory mediators, such as lipopolysaccharides and cytokines, may be transported to the placental tissues as well as to the uterus and cervix. This results in increased inflammatory modulators that may precipitate preterm labor, particularly in African Americans (17). However, recent meta-analyses and other large trials have not shown any benefit of periodontal therapy during pregnancy in the reduction of preterm birth and infant low birth weight (18 – 22). Similarly, there have been conflicting results with respect to the effect of periodontal disease on preeclampsia (23, 24). Randomized controlled trials of periodontal treatment during the preconception or inter-conception periods may better define whether pre-pregnancy treatment could reduce adverse pregnancy outcomes.

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<tr>
<th>Common Oral Health Conditions During Pregnancy</th>
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<tr>
<td><strong>Pregnancy gingivitis</strong></td>
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<td><strong>Benign oral gingival lesions (known as pyogenic granuloma, granuloma gravidarum or epulis of pregnancy)</strong></td>
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<td><strong>Tooth mobility</strong></td>
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<td><strong>Tooth erosion</strong></td>
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In 2010, nearly 24% or one in four children born prematurely across the globe were from India recording the highest number of preemies, or premature babies (35.19 lakh). Almost 13% of all children born in India were born too soon. This is not just a problem of the developing nations but the USA (517,000 preterm births) also ranked among the top 10 countries with the highest number of premature births in 2010. The US Institute of Medicine estimates that preterm birth costs the country at least $26.2 billion a year or $51,600 per preterm infant.

A variety of epidemiological, animal and intervention studies indicate that there is a positive link between preterm birth and the oral health in the pregnant women. Although the exact underlying mechanism for this association is still unclear, evidence is accumulating that oral bacteria can invade the placental tissues and trigger inflammatory responses which will result in release of effector molecules involved in preterm delivery.

There is an urgent need for experts from the dental and medical profession to discuss ways of creating awareness amongst members of their respective professions about the importance of oral health, particularly during pregnancy. Medical profession has yet to assume a role in the education of the pregnant women about the effect of her oral health on her pregnancy and similarly the dental profession has not yet assumed the role in the education of the pregnant women about the effect of oral health on her pregnancy and vice-versa.
References

Anil Kaul MD, DDS, MPH
1111 West 17th Street
Oklahoma State University – Center for Health Sciences
Tulsa, OK – 74137
USA
918-561-1442
anil.kaul@okstate.edu

Graduated in medicine from Madras Medical College, in dentistry from KGMC, Lucknow and MPH in Healthcare Administration from University of Minnesota. After completing fellowship at UTMB Galveston, Texas, joined University of Minnesota as faculty member and Director of Women’s health research.

Currently serving as the Director of Clinical Laboratories and faculty at Oklahoma State University, teaching graduate courses - Global Health; Relief and Development in Global Health; International Health Systems and Translational Medicine; and as the President of American Association of Physicians of Indian Origin (AAPI-Tulsa).

Served as senior consultant to Minnesota State Health Technology Advisory Committee; reviewer for National Institutes of Health (NIH) and the American Journal for Obstetrics & Gynecology.

Recently, served as senior health advisor to the United States department of State in Iraq and awarded “Expeditionary Service Award” by Secretary Hillary Clinton. Also, received Sony’s South Asian Excellence Award - “Scientist of the Year” in 2008.

Awarded 6 patents for developing diagnostic tools to prevent preterm births and cancer. Published 42 scientific papers and invited to present at more than 100 national and international meetings including recent Global Healthcare Summit (Ahmedabad, India January 3-5, 2014) and the 101st Indian Science Congress (Jammu, February 2-5, 2014).