



Journal of Pharmaceutical and Biological Research

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Review Article

A Systemic Review on Effects of Poor Oral Health on the Fetal Development in Pregnancy

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ABSTRACT

Poor oral health during pregnancy can impact fetal development, potentially leading to complications such as preterm birth and low birth weight. The abstract explores the links between maternal oral health, gestational outcomes, and highlights the importance of dental care in prenatal health. However, how periodontitis may lead to adverse pregnancy outcomes is not yet fully understood. In the first, periodontal diseases are believed to affect the maternal and fetal immune responses systemically, leading to premature delivery. Alternatively, evidence is accumulating that oral bacteria may translocate directly into the pregnant uterus, causing localized inflammation and adverse pregnancy outcome in the presence or absence of clinical periodontitis. This review article discuss common dental problems a pregnant women faces along with relevant treatment implications, the risks of various medications to both mother and the fetus and common dental problems a pregnant women faces. In addition, the management of related dental problems in the pregnant patient and appropriate scheduling of dental surgical procedures during pregnancy has been discussed.

Keywords: Periodontitis, preterm birth, low birth weight, Bacteria, Gestational outcomes

ARTICLE INFO

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Journal QR-Code

ARTICLE HISTORY: Received 12 July 2023, Accepted 19 Aug 2023, Available Online 15 Oct 2023

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Citation: A. Vyshnavi, et al. A Systemic Review on Effects of Poor Oral Health on the Fetal Development in Pregnancy. *J. Pharm. Bio. Res.*, 2023, 11(1): 73-76.

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1. Introduction

Oral health is the taste of the mouth, teeth and orofacial structures that enable individuals to perform essential functions such as eating, breathing and speaking and encompasses psychosocial dimensions such as self-confidence, well-being and the ability to socialize and work

without pain, discomfort and embarrassment.¹ Oral health varies over the life course from early life to old age is integral to general health and supports individuals in participating in society and achieving their potential. Oral diseases affect the most vulnerable and disadvantaged populations of people with low socio-economic status and

carry a higher burden of oral diseases and the association remains across the life course, from early childhood to older age, regardless of the country's overall income level. The population who are at greater risk for oral health issues includes

- Smokers
- pregnant womens
- Diabetics
- Gum disease patients
- People on low income, people living with disabilities older people living alone
- People with chronic diseases.

Principles for good oral hygiene

Keep a consistent brushing schedule Frist, it is crucial to maintain a consistent brushing schedule, which means brushing your teeth twice a day Floss and use mouthrise everyday. Use flouride tooth paste and mouthrise. Avoid harm full foods and drinks. Drink water through each day.³

Introduction to Pregnant Women

Pregnant women are at an increase in gingivitis, periodontitis, tooth mobility, oral tumor caries and enamel erosion. It is known that periodontal diseases are associated with adverse pregnancy outcomes such as preterm delivery, low birth weight and preeclampsia Despite this, there is low utilization of oral care among pregnant women⁴. This increased hormonal secretion and foetal growth induces several systemic, as well as local physiologic and physical changes in the cardiovascular, hematologic, respiratory, renal gastrointestinal, endocrine and genitourinary system⁴. Pregnancy is accompanied by changes in the oral cavity that affect the hard and soft tissue of the mouth. Most pregnant women change their eating habits to more frequently eating foods rich in carbohydrates and acids. This situation is exacerbated by a decrease in salivary pH associated with frequent nausea and vomiting. Pregnant women who do not comply with regular and careful oral hygiene often suffer from erosions of tooth enamel and developed new dental caries.⁵

During pregnancy the inflammatory response to the dental plaque is increased, leading to swollen gingiva which tend to bleed on brushing The gingivitis which is caused by the hormonal changes which occur in pregnancy is known as pregnancy gingivitis⁶. Pregnant women who do not comply with regular and careful oral hygiene often suffer from erosion of tooth enamel and develop new dental caries. Hormonal changes in pregnancy combined with neglected oral hygiene tend to increase the incidence of oral diseases like gingivitis. High levels of circulation progesterone lead to pregnancy gingivitis which is characterized by increased redness, edema, and a higher tendency toward bleeding.⁷

During pregnancy, oral and dental care requires special attention. Oral Health is part of the general health. And it is of even greater importance during this

period because it concerns both the mother and the foetus⁸. It should also be kept in mind that neglecting oral and dental health during pregnancy not only causes problems such as tooth decay and tooth loss but may also lead to problems such as premature birth, low birth weight infant and preeclampsia⁹.

Pregnancy is a period in which the mother must obey certain rules to protect her health and her baby's health. During this period mothers can protect their oral health by taking the necessary precautions and they can prevent dental problems that may be irreversible. Good oral health during pregnancy can not only improve the health of the pregnant mother but also potentially the health of her child.¹⁰

Pregnant women are more likely to develop gingivitis an early stage of periodontal diseases that occurs when the gums become red and swollen from inflammation that may be aggravated by changing hormones during pregnancy. The storm of hormones which is induced during pregnancy causes changes in the mother body and the oral cavity is no exception. An increase in the secretion of the female sex hormones, estrogen by 10 fold and progesterone by 30 fold, is important for the normal progression of a pregnancy¹¹. The increased hormonal secretion and the foetal growth induces systemic, as well as local physiologic and physical changes in pregnant women.

2. Health Problems in Pregnant Women

Gingivitis

Some women do complicated bleeding gums while brushing during pregnancy. Also known as pregnancy gingivitis is caused by a rise in the hormone progesterone which can contribute to an increase in the flow of blood to the gums tissue making them more sensitive, swollen and more likely to bleed. Although these changes can occur at any time during pregnancy they are more severe during the second trimester these hormonal changes can make it easier for certain gingivitis-causing bacteria to accumulate and make gums more tender if left untreated gingivitis can lead to more chronic gum diseases.



Fig.1 PERIODONTITIS



Fig.2 STAGES OF PERIODONTITIS



Fig.3 SUPINE HYPOTENSION SYNDROME

GASTROINTESTINAL SYSTEM

The increased in progesterone levels during pregnancy causes a decrease in lower oesophageal tone gastric and intestinal motility. The combined effects of hormonal and mechanical changes in the GI system and greater sensitivity of the gag reflex also increases the risk of gastric acid reflux. The stomach is displaced superiorly as the uterus increases in size, which increases intragastric pressure. Consequently, the chair should be kept as upright as possible during dental treatment to relieve abdominal pressure and keep the patient comfortable.¹

PTYALISM

- Ptyalism [Excessive secretion of saliva] is a complication of pregnancy that occurs most often in women suffering from nausea
- The presence of excessive saliva in the mouth may also reflect the inability of nauseated women to swallow normal amounts of saliva rather than a true increase in production
- Reducing the consumption of complex carbohydrates may improve this condition
- Increased secretion of saliva is observed during pregnancy. It may be associated with increased intake of starch, though actual cause is not known.¹⁵

3. Management

- This problem is usually self-limiting and may be overcome by decreasing intake of carbohydrates
- It is not associated with any adverse pregnancy outcome.¹⁵

COMPLICATIONS

- High blood pressure
- Gestational diabetes
- Infections
- Pre-eclampsia
- Preterm labour
- Depression and anxiety
- Pregnancy loss/ miscarriage
- Stillbirth
- Sexually transmitted infection
- Low amniotic fluid
- Rh incompatibility
- Ectopic pregnancy
- Miscarriage
- Premature contractions

Effects of poor oral health on foetal development

Problems of oral hygiene in pregnant women:

Pregnant women bleed more readily due to the effect of pregnancy hormones (estrogen, progesterone) and many consequently avoid brushing their teeth. As a result bacterial plaque increases. Therefore, during pregnancy, the mouth needs care. A hormonal change in pregnancy combined with neglected oral hygiene tends to increase the incidence of oral diseases like gingivitis. Research suggests a link between preterm, low birth weight babies and gingivitis. Excessive bacteria can enter the bloodstream through gums if this happens, the bacteria can travel to the uterus, triggering the production of a chemical called prostaglandins, which are suspected to induce premature labour. Poor oral during pregnancy can lead to complications, such as low birth weight and preterm babies as well as poor oral health in children. Our gum tissues, teeth and the bones get highly affected during these stages due to bacteria formation. And when a pregnant woman goes through a such a dental problem, the germs reach the blood stream and travel to the womb which may increase the chances of miscarriage.

Effects of Poor Oral Health on Babies

During pregnancy, women are already on the verge of being a mother. So she had to take care of her and focus on assembling everything perfectly for the best. A mother will always care for her and her unborn and not only for general health but also oral health. Routine visits to the dentist will enable to measurement of the current oral health status as well as rule out preparation for the dental treatment needs after the delivery. When pregnant women care for their mouths. It will make a disparity for her baby. Equally before plus after birth.

Facts

- If routine night time brushing and dental flossing gets skipped then it might direct to plaque as well as bacteria build up and ultimately tooth decay
- All pregnant women needs vitamin which contains folic acid during pregnancy

- Eating the right food with proper nutrition will keeps the mouth healthy as well as strong
- A nutritious meal containing calcium as well as limited amount of sugar in the food is the best for both mothers and baby oral health. 1

4. Conclusion

- It was evident that the oral health status of pregnant women were poor with more treatment needs thus establishing a healthy oral environment and maintaining optimal oral hygiene levels would promote their oral health status
- Nevertheless, pregnancy is a time was women may be more motivated to make healthy changes. So gynaecologists and physicians can address material oral health issues which could probably reduce the risk of adverse pregnancy outcomes through available preventive measure, early diagnosis, and appropriate management by referring to a dentist
- To improve the oral-systemic health outcomes for mothers and their newborns, it is essential to increase the current and future inter professional oral health work force capacity
- Meeting the oral health needs of pregnant women and their newborns will be accomplished only through collaboration among all health care professional educators and providers to promote the incorporation of oral health needs as a gold standard for educational programs and clinical practice

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