Review Article

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Dental Considerations and Its Management during Pregnancy – An Overview

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Abstract

Pregnancy is a transient but dynamic state of health that is witnessed by changes in every woman's physiological, emotional, and mental well-being. As the changes involve the oral cavity, ensuring proper dental care is essential for a healthy gestational period for the mother and the developing fetus. Thus, dentists have a role in giving good oral dental care to the antenatal mother. This article reviews most of the changes occurring in the oral cavity during gestation. It instills insights if to defer dental treatment or if it is to be mandatorily provided with proper precautionary measures.

Keywords*: fetus, dental care, pregnancy*

Introduction

The physiological system of a pregnant woman begins to change from the start of conception. The hormonal fluctuation prepares the body to house the zygote and paves the way for it to become a healthy fetus. Various studies link evidence in relating poor maternal oral health with adverse pregnancy complications and the health of the baby.

Various barriers in society for pregnant women affect their knowledge of maintaining oral health and acquiring optimum dental care. Lack of knowledge and experience are hurdles in rendering the best dental care to pregnant women. The following collaboration of information is made to formulate an effective method proposing a proper diagnosis and proving the best dental treatments in an apt time of pregnancy.

Physiology of Pregnancy

The physiological and biochemical changes in various systems should be taken into consideration.

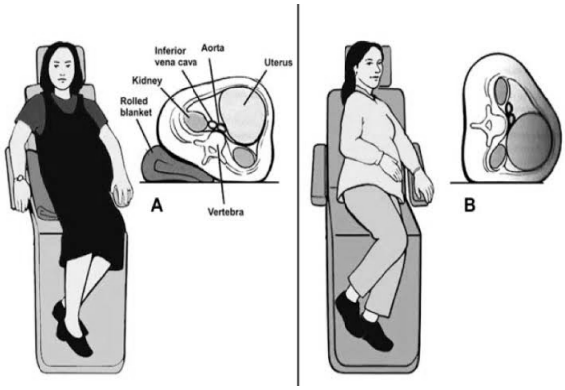
Cardiovascular System

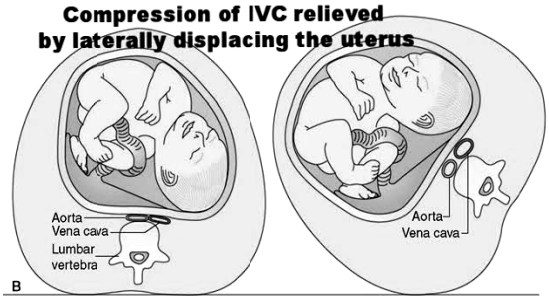
Significant changes in cardiac output and blood volume, peripheral vascular resistance, and a drop in blood pressure increase the chance of supine hypotensive syndrome.

These changes produce tachycardia and functional heart murmur in 90 percent of the women, which is transient and returns to normal after delivery.

When the gravid uterus compresses the inferior vena cava, the venous return to the heart is reduced and, in turn, reduces the cardiac output. This causes hypotension, bradycardia, and syncope, which characterizes supine hypotensive syndrome. Nausea, dizziness and fainting might also occur, which is prevented by proper chair positioning.

Dental treatments for pregnant women can best be delivered by proper left lateral positioning of the patient, which relieves the pressure on the IVC and eliminates the risk of the supine hypotensive syndrome.





Respiratory System

To meet the increased oxygen demands and accommodate the increasing size of the fetus, hyperventilation and an increase in intra-thoracic pressure is seen, respectively.

Gastro-Intestinal System

Nausea and vomiting occur in pregnant women due to the effects of estrogen and progesterone. Pyrosis occurs in 30 to 50 percent of pregnant women to the reflux caused by increased intragastric pressure, which is, in turn, a sequel of enlarging fetus, slow gastric emptying rate, and decreased resting strain of lower gastro oesophageal Sphincter.

Hepatic dysfunction might even lead to preeclampsia, HELLP syndrome/acute fatty liver of pregnancy.

Hematological Changes

An increase in Leukocytes, Erythrocytes, ESR and most clotting factors leave women in a hypercoagulable state with an increased risk of thromboembolism.

Renal and Genitourinary Changes

Increased GFR, biochemical changes in urine and greater risk of UTI are the changes worth considering. When a drug with renal clearance is used, doses have to be altered in accordance with more rapid clearance.

Endocrine Changes

Notable endocrine changes in the gestational period include a marked increase in estrogen and progesterone primarily secreted by the placenta. In addition, there is also an increase in thyroxine, steroid, and insulin levels. Other changes seen include constipation, frequent urination, mood swings, frequent craving for sugar, and other modifications which alters their social well-being.

Orofacial Changes Seen in Pregnancy

Bilateral brown patches in the midface region are seen in about 73% of Pregnant women, usually in the first trimester. This pigmentation, known as melasma, is usually self-limiting and regresses after pregnancy.

Changes Occurring in Teeth

Mobility of teeth is affected by minimal changes in lamina dura, disturbance in the Periodontal ligament (PDL) attachment, which is caused byHormonal rush, in turn, leads to periodontal diseases.

Management

A therapeutic dose of Vitamin C supplement and removal of local irritants have been shown to make this condition reversible.

Changes Occurring in Gingiva

Gingivitis

Hormonal fluctuation involving alterations in the levels of progesterone and circulating estrogen causes an increase in capillary permeability, predisposing the pregnant woman to gingivitis and gingival hyperplasia along with tender bleeding gums at times. Decreased immune response and changes in the oral microflora also play a role.

Management

Maintaining meticulous oral hygiene by periodic oral prophylaxis by a dental professional and self-cleaning measures such as flossing and saline mouth rinses negotiate the development of a suitable environment for the irritants. Symptomatic management with topical ointments will work too.

Periodontitis

Pregnancy does not cause any periodontal disease as such, but it does worsen the existing condition. A correlation between the presence of

circulating inflammatory markers such as IL 6, IL 8, and PGE 2 in the amniotic fluid of the mother with periodontal disease and low birth weight babies have been well established.

Management

Vigilant diagnosis with early and preventive treatments will minimize the risk of any pathogen's invasion of a healthy periodontium. Scaling and root planning and limiting the progression of the disease by prescribing 0.12 percent of chlorhexidine mouthwash if it already exists are the tools in management.

Changes Occurring In Saliva

Salivary changes include changes in flow, composition, and hormone levels and consequently altering the pH; increases in estrogen levels, potassium, and protein are noted.

Investigating salivary estrogen levels have been suggested as a screening test to detect the risk potential for preterm labor. Reduced salivary flow increases carriers' risk due to the upturn into an acidic environment.

Changes in the Oral Mucosa

Salivary estrogen increases the oral mucosa's proliferation and desquamation and the subgingival crevicular fluid levels. The desquamating cells provide a suitable environment for bacterial growth by providing nutrition.

Pyogenic Granuloma

It is a smooth or lobulated exophytic lesion manifesting as small, red, erythematous growth on a pedunculated or a sessile base. It develops in 5% of pregnant women and is called pregnancy tumor or granuloma gravidarum. This bleeds on touch as well as during mastication. This condition generally appears in the second or third trimester.

Management

Conservative surgical excision when the blood investigations are normal and removal of the causative irritants are the best possible conventional treatment methods.

Flash camp pulsed dye laser, cryosurgery, and NDYAG are the novel methods of treatment modalities available.

Dental Erosion

Pregnancy-induced vomiting, which occurs in most pregnant women, leads to dental erosion lingually and increases the risk of caries. This can be controlled with a solution containing sodium bicarbonate that neutralizes the acid.

Pharmacodynamics and Pregnancy

The rise in the clearance and lipid solubility rate, including an increase in the volume of drug distribution and shorter plasma half-life, are to be considered when prescribing the drug to pregnant women. Easy access to medicines by the fetus via the placenta is also a significant factor governing the administration of drugs to a pregnant woman. Most drugs are excreted in breast milk, thus exposing the newborn to the drugs. The best possible ways to avoid administering medications generally, particularly in the first trimester, are advised. When the usage of drugs becomes inevitable, one should exercise caution.

Table – 1 : Analgesics considered safe during pregnancy

Drugs	Use in pregnancy	Used in nursing	Possible side effects
Acetaminophen	Yes	Yes	Not reported
Aspirin	Not in third trimester	No	Post partumhemorrhage
Ibuprofen	Not in third trimester	Yes	
Codeine	With caution	Yes	Multiple birth defects
Naproxen	Not in second half of pregnancy	Yes	Delayed labor
Oxycodone	With caution	With caution	Neonatal Respiratory Depression

Morphine	Yes	Yes	Respiratory depression
Meperidine	Yes	Yes	Not reported

Table -2: Antibiotics considered safe during Pregnancy

Drugs	Use in pregnancy	Use in nursing	Possible side effects
Amoxicillin	Yes	Yes	Not reported
Metronidazole	Yes	Yes	Not reported
Erythromycin	Yes	Yes	Not reported
Penicillin V	Yes	Yes	Not reported
Cephalosporins	Yes	Yes	Not reported
Tetracycline	No	No	Maternal toxicity
Clindamycin	Yes	Yes	Not reported
Gentamycin	Yes	Yes	Fetal ototoxicity

Table- 3: Local Anaesthesics considered safe during Pregnancy

Drugs	Use in pregnancy	Use in nursing	Possible side effects
Lidocaine	Yes	Yes	Not reported
Prilocaine	Yes	Yes	Not reported
Mepivacaine	With caution	Yes	Fetal bradycardia
Bupivacaine	With caution	Yes	Fetal bradycardia
Etidocaine	Yes	Yes	Not reported

Table -4: Antifungals considered safe during Pregnancy

Drugs	Use in pregnancy	Use in nursing	Possible side effects
Clotrimazole	Yes	Yes	Not reported
Nystatin	Yes	Yes	Not reported
Fluconazole	With caution	With caution	Not reported
Ketoconazole	With caution	No	Fetal bradycardia

Planning of Dental Treatment

First Trimester

Procedures that can be performed include:

1. Oral prophylaxis
2. Restoration requiring less operating time
3. Emergency procedure to be exercised with caution.

It is best to avoid all elective dental procedures and postpone them to a later date. Avoid radiographs.

Second Trimester

All elective procedures can be performed with proper patient positioning. Procedures that can be performed include:

1. Root canal treatment
2. Extraction
3. Scaling and root planning
4. Curettage

Third Trimester

The best time to perform the dental procedure is until the mid of the third trimester. Radiographs should be kept to a bare minimum and only for mandatory cases for proper diagnosis.

In general, oral diseases should be controlled, and the patient should be educated in maintaining oral hygiene with cleaning aids.

Conclusion

Maternal oral care involves the comprehensive role of gynecologists, general physicians, and dentists to deliver optimum health care to both mother and fetus. Every dentist must gain basic knowledge on the diagnosis and treatment planning for pregnant women, following which efficient dental treatment can be delivered.

Take Home Points

- Local anesthesia is preferred over general anesthesia.
- Lengthy procedures may preferably be avoided.
- Pregnant patients may have gingival hyperplasia, which does not need any treatment. The gum swelling resolves after the delivery.
- Pre-Eclampsia should be excluded before any procedure.
- Only drugs safe in pregnancy should be prescribed.
- The risk of supine hypotension syndrome should be considered with utmost care.

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