

Oral Health Care During Pregnancy

Tanvi Dosi*, Dhaman Gupta**, Rajan Rajput*, Alka Hazari***

Abstract

Pregnancy is a special event which occurs in a woman's life, alongwith a variety of physical, anatomical and hormonal changes which can affect oral health care. The maintenance of good oral health during this period is essential to the overall health of the pregnant woman and her baby. In such case the assessment of oral examination should be considered as part of prenatal care for every women. This can only be possible if the general medical practitioner and gynaecologist refer such cases to dental surgeon for routine dental check-up. These patients should not be considered as medically compromised and should be given proper dental care. This paper is designed to review that dental care during pregnancy is advisable, general dental procedures and treatment provided are explained during pregnancy and the role of maintaining good oral hygiene and ways to do so.

Keywords: Pregnancy; Oral Health; Dentists; Periodontal Disease; Dental Care.

Introduction

Pregnancy is a special event occurring in woman's life with variety of physiologic changes that results in the formation and maturation of a new life[1]. In pregnancy it is important to maintain good oral hygiene because the condition of the pregnant mother can affect her health and that of the baby[2]. Dental care during pregnancy is an important aspect of prenatal care. Hormonal variations put pregnant women at risk of suffering various dental problems[3]. Poor oral health during pregnancy can increase the risk of infants developing early childhood caries after birth[4,5] and can contribute to low birthweight and premature births[6,7].

More often, oral health practitioners do not provide oral care to pregnant women and even it happens vice versa the pregnant women also avoid this. Since

it is not included in perinatal care, the ignorance from the side of pregnant woman is seen. All expecting mothers should be educated to receive dental and medical care during pregnancy. This paper is designed to review that dental care during pregnancy is advisable, general dental procedures and treatment provided are explained during pregnancy and the role of maintaining good oral hygiene and ways to do so.

Radiological Examination

Oral radiological examination is considered to be safe for gestational women, if proper measures are taken like usage of lead apron, E and F-speed films and a thyroid collar are used. There are no reported cases of congenital abnormalities or intrauterine growth retardation for radiation exposure to pregnant woman totalling less than 5–10 cGy[5,6] and a series of full-mouth dental radiographs which results in only 8×10^{-4} cGy[8]. An orthopantomogram and bitewing radiograph produces about $1/3^{\text{rd}}$ the radiation exposure compared with a full-mouth radiograph with Ekta-speed film and a rectangular collimation[9]. There are many people who are not willing for radiographs during pregnancy, for such patients the dentist should explain that ALARA (As Low As Reasonably Achievable) principle will only be practiced which states that only necessary radiographs will be taken with minimum exposure and maximum details [10].

Author's Affiliation: *Assistant Professor, ***Associate Professor, Department of Oral Medicine and Radiology, Jodhpur Dental College General Hospital, Jodhpur, Rajasthan, India. **PG Student, Department of Public Health Dentistry, Vyas Dental College & Hospital, Jodhpur, Rajasthan, India.

Reprints Requests: Tanvi Dosi, Assistant Professor, Department of Oral Medicine and Radiology, Jodhpur Dental College General Hospital, Jhanwar road, Boranada, Jodhpur, Rajasthan, India. Pin code-342001.

E-mail: drtanvidosi@gmail.com

Safe Drugs during Preg-nancy

In pregnancy, drugs are rapidly absorbed because the concentration of drug binding in serum is lower than that in the non pregnant women. There is also a higher lipid solubility, a lower maximum plasma concentration, a higher volume of drug distribution, a lower plasma half-life and a higher clearance of the drugs. Due to these factors unbound drug crosses the placenta, thus exposing the foetus to the drugs [11]. Some drugs causes miscarriage, teratogenicity, and low birth weight of the foetus. So drugs should be prescribed carefully to a pregnant women [Table-1,2] [11, 12, 13].

Restorations

In dentistry, Amalgam is very commonly used restorative material and it is also not technique sensitive like other restorative materials. But there are issues about release of mercury as vapour that can be possibly ingested or inhaled. There is no published evidence regarding deleterious effect such as spontaneous abortions or birth defect resulting from amalgam exposure is known [14]. In caries-active expectant mothers, it was concluded that highly viscous glass ionomer cement is the choice of the material in minimally invasive cavity preparations and composite restorations can be used for anterior teeth[15].

Periodontal Care during Pregnancy

Periodontal care is very important in gestational period. There are number of hormonal changes which occur during pregnancy due to which chances of accumulation of calculus and plaque increases resulting in initiation of gingivitis. (Figure 1) [16,17]. These initial changes are taken for granted by pregnant woman and thus the gingival problems increases[18]. Here the dental surgeon should take active initiation by informing the expecting mother about the changes in oral flora. In such cases the dentist should examine more frequently by keeping regular appointments. As infections (for eg. urinary tract infection) in pregnancy are related with premature birth and low birth weight, the hypothesis is being formed about periodontitis about its link to premature delivery and this was supported by experimental studies that states about growth of fetus is restricted in pregnancy who were having periodontitis [19,20,21,22]. Hypothesis states that the pathogens in periodontitis, which belongs to the Gram-negative group mainly anaerobic rods, has impact on growth of fetus due to their toxins or by the release of mediators of inflammation. This hypothesis

is found in many scientific publications [19,20,24,25,26,27]. As prematured infants have many health related problems which needs costly treatment, the measures of treating periodontal problems should be given priority which can prevent such hypothetical prematured births. So many studies are being carried out, for eg. PIPS (Periodontal Infections and Prematurity Study) and OPT (Obstetrics and Periodontal Therapy), also other studies, which focus on advantages of periodontal care and prevention of premature and low birth-weight babies [28,29]. Till now there are many discrepancies have occurred regarding these studies because according to some scholars it is estimated that periodontal care in pregnancy has not lowered the risk of premature and low birthweight babies while other states the positive results for this[30-34]. Recent meta-analysis suggests that in pregnancy a woman who received good periodontal care on the basis of proper criteria had a markedly lower chance of giving premature birth.

The same study also states that hormonal changes in pregnancy makes the periodontal treatment a challenge so there must be many studies which focuses on the periodontal care, and its outcome [35,36]. Epulis - A periodontal lesion which is characteristic during pregnancy (Figure2). This lesion affects 0.2-5% of pregnant women which is more often seen in the maxillary gingival region [37].

If bleeding occurs which cause problem in mastication, they must be removed with safety measures in pregnancy [37].

Extraction

Swollen gums and toothache are most common complaints during pregnancy. In pregnancy, The gingiva gets inflamed, turns red, bleeds and becomes painful due to the hormonal changes. Oral hygiene practice become difficult resulting in plaque accumulation around the teeth specially gingiva around the impacted third molar teeth. This could be the main reason for extraction during pregnancy. Most Dentists would usually postpone dental extractions during pregnancy. This should not be done as gestational mother is under continuous stress and constant pain and this is not good for the developing child. Extraction now a days is painless, produces least stress and many patients are not even aware that their tooth had been removed.

Root Canal Treatment (RCT)

General practioners and Gynaecologists normally avoid such treatment during pregnancy preventing any danger to the foetus. Unfortunately, A root canal

treatment is not the same like teeth whitening procedure which cannot be postponed. The risks associated with are:

Pain: Constant pain during pregnancy is a stressful condition which leads to lack of sleep, restlessness and distress that may have negative outcomes to both the pregnant mother and the foetus.

Infection: Infection is another known condition which can cause significant danger to both gestational mother and the foetus. If left untreated, can spread to surrounding spaces causing space infections and ultimately may lead to septicaemia.

Management of Dental Conditions

First-line antibiotics such as penicillin, amoxicillin, and cephalexin are the drugs of choice in conditions such as mild cellulitis. If patients are allergic to penicillin, or clindamycin can be used. where as In patients with severe cellulitis, the pregnant mother should be treated as an inpatient with intravenous infusion of cephalosporins or clindamycin. Acetaminophen is commonly used drug to relieve dental pain; ibuprofen and limited use of oxycodone are appropriate[3]. Dental procedures that can be

undertaken during each trimester are described as follows:[38,39].

First trimester: It is the most critical period for growth of the foetus. Only emergency dental treatment can be performed after proper consultation with the patient's Gynaecologist/Physician. Procedures like an emergency access opening, extirpate the inflamed pulp (or) draining of pus if pain is under constant pain. Plaque diet control programmes and maintenance of good oral hygiene are initiated for the mother throughout pregnancy.

Second trimester: Second trimester is the most safest to treat patients among the three trimesters. Treatment such as dental extractions, periodontal surgeries, completion of root canal can be performed in this phase.

Third Trimester: If patient is under persistent dental pain, an emergency treatment can be performed and definitive treatment can be postponed until after the birth, if possible. Repositioning and propping of patient on their left side reduce the risk of compression of the vena cava. and most importantly, reducing the timings of appointments can minimize complications[40].

Table 1: Safe drugs during pregnancy

| Drugs | FDA category | Use in pregnancy | Use in nursing | Possible side effects |
|------------------|--------------|---------------------------------------|----------------|------------------------|
| Analgesic | | | | |
| Acetaminophen | B | Yes | Yes | Not reported |
| Aspirin | C | Not in 3 rd trimester | No | Postpartum haemorrhage |
| Ibuprofen | B | Not in 3 rd trimester | Yes | Delayed labour |
| aproxen | B/D | Not in 2 nd ½ of trimester | Yes | Delayed labour |
| Codeine | C | With caution | Yes | Multiple birth defects |
| Oxycodone | B | With caution | With caution | NRD |
| Hydrocodone | C/D | With caution | With caution | NRD |
| Morphine | B | Yes | Yes | Respiratory depression |
| Propoxyphene | C | With caution | Yes | Not reported |
| Meperidine | B | Yes | Yes | Not reported |
| Pentazocine | C | With caution | With caution | Not reported |

Table 2: Safe drugs during pregnancy

| Drugs | FDA category | Use in pregnancy | Use in nursing | Possible side effects |
|--------------------------|--------------|------------------|----------------|-----------------------|
| Antibiotic | | | | |
| Amoxicillin | B | Yes | Yes | Not reported |
| Metronidazole | B | Yes | Yes | Not reported |
| Erythromycin | B | Yes | Yes | Not reported |
| Penicillin v | B | Yes | Yes | Not reported |
| Cephalosporins | B | Yes | Yes | Not reported |
| Gentamycin | C | Yes | Yes | Fetal ototoxicity |
| Clindamycin | B | Yes | Yes | Not reported |
| Tetracycline | D | No | No | Maternal toxicity |
| Local Anesthetics | | | | |
| Lidocaine | B | Yes | Yes | Not reported |
| Mepivacaine | C | With Caution | Yes | Fetal Bradycardia |
| Prilocaine | B | Yes | Yes | Not reported |
| Bupivacanine | C | With Caution | Yes | Fetal Bradycardia |
| Etidocaine | B | Yes | Yes | Not reported |



Fig. 1: Pregnancy induced gingivitis



Fig. 2: Pregnancy epulis

Conclusion

Pregnancy is a special event which occurs in a woman's life, alongwith a variety of physical, anatomical and hormonal changes which can affect oral health care. All pregnant women should be provided to receive dental and medical care during pregnancy. It is the duty of every dental professional to gain the basic knowledge of changes occurring in pregnancy and also simultaneously provide the information to his patient about the usage of medicines and their interactions during pregnancy. The dental treatment during pregnancy is an important task which should be accomplished by every pregnant woman for better oral health. Routine dental check-ups include the radiological procedures, restorations, oral prophylaxis, root canal treatments,

periodontal surgery and extractions because using local anaesthesia in pregnancy does not have side effects to the foetus.

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