

Dental Health Care in Pregnancy: A Survey And Literature Review

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Abstract: Oral health of pregnant patient is considered as essential component of the overall health of both mother and her baby. The aim of this study was to know the perspective of pregnant women towards oral health care during pregnancy. A cross-sectional questionnaire-based survey was conducted amongst pregnant females at the Maharaja Yeshwantrao Hospital, Malwa region, Indore. A total of 385 questionnaires were collected and analysed. A lack of knowledge of the importance and safety of dental treatment during pregnancy was reported by a majority of sampled women. The survey provides us baseline data for planning oral health education Program for pregnant women. The literature review presented in this paper allow us to reassess the concepts and parameters about oral health care during pregnancy.

Key-words: awareness, Oral health, pregnancy, safety

I. Introduction

Pregnancy is a special time in women's life. It is the time when women is more motivated to care for her own health and that of her baby.^[1] However, oral health care in pregnancy is often avoided and overlooked by patients, obstetricians, and dentists.^[2] Dentists are reluctant to provide dental care during pregnancy due to uncertainty over the risks that might hamper the development of child, the mother's health and the natural process of gestation. Even the literature mentions that dental care to the pregnant women should be performed only during the second trimester or only in special cases.^[3]

A survey by Tanq et al showed that most pregnant women had a positive attitude towards oral health. However, only 44.62% of the subjects had adequate knowledge on oral health and correct oral health caring behavior. The ratio of the subjects who had oral examination before getting pregnant was 29.85%, while 39.08% of the pregnant women didn't plan to brush teeth or just gargle after parturition.^[4] A study by Abiola et al indicated that there is a need to provide oral health education for pregnant women during antenatal care in order to highlight the importance of good oral health in achieving good health for both mother and her baby.^[5]

In light of current professional interest in the need for oral health care during pregnancy, this study aims to find out the perspective of pregnant women of indore district (Malwa region) towards oral health care along with literature review of the same. The objective of the review is to gather information that allows us to reassess the concepts and parameters we have about oral care during pregnancy and thus enable us to provide better care and guidance in pregnancy.

II. Survey Analysis

A cross-sectional study was conducted among female patients attending M.Y hospital, Indore, Madhya Pradesh. The pregnant women of age 20-35yrs were identified in obstetric and gynaecology clinics. These pregnant women belonged to poor socio-economic group and the level of education was only upto higher secondary. Almost all of them were brushing once daily except a few patients (15) who were brushing twice daily. A self-administered questionnaire in Hindi was developed to assess the pattern of dental service utilization and attitude toward dental treatment during pregnancy. Questionnaire was first developed and presented to 15 pregnant women to allow for further clarity of questionnaire. Survey was done for consecutive 17 days to enroll all pregnant females who consented for the survey. A minimum sample size was calculated using formula method at 90% confidence level with 5% variability for prevalence. Thus, a total of 385 properly filled questionnaires were collected and analyzed (fig.1&2). It was found that 277 pregnant women had not seen any dentist during pregnancy. Amongst 277 patients, only 92 patients had visited to dentist in their entire life and remaining 185 never visited to dentist. All subjects whether they visited dentist or not visited dentist were ignorant about routine dental check-up before or during pregnancy. This lack of awareness of the importance and safety of dental treatment during pregnancy is significant barriers for dental care during pregnancy. None of the patient had visited dentist before planning pregnancy.

When asked about the safety of dental treatment during pregnancy, only 39 patients out of 385 feel that dental treatment is safe during pregnancy. 54 patients feel dental treatment is not safe during pregnancy and remaining were not sure about it. A lack of awareness about the importance and safety of dental treatment was reported. Thus, it is concluded that there is an urgent need to create oral hygiene awareness and promotion of oral health care through obstetrics, gynaecologists, family physician etc. so that pregnant women visit to the dentist more often before and during pregnancy.

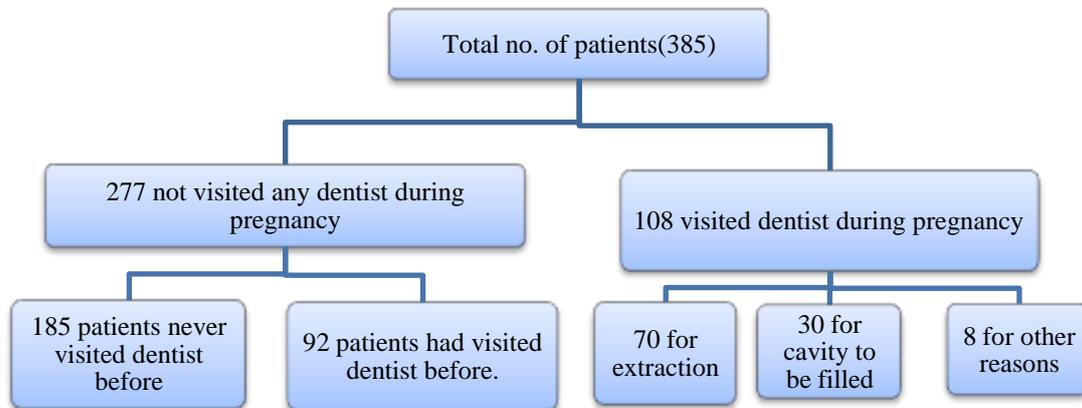


Fig.1 analysis of self administered Questionnaires

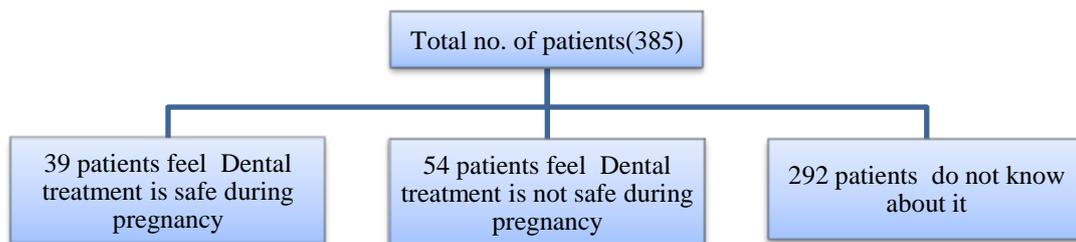


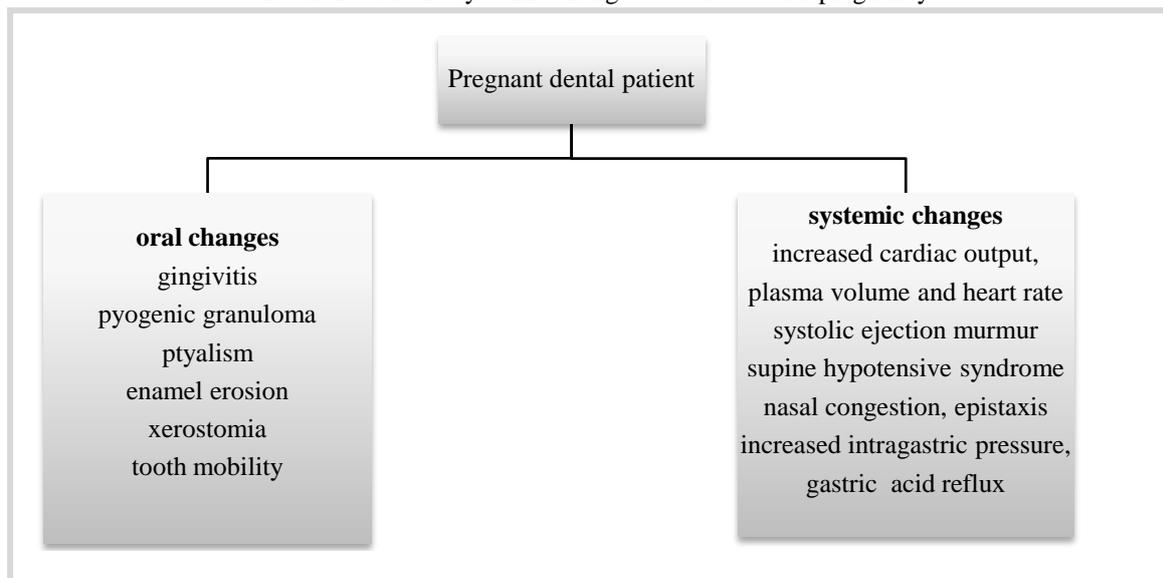
Fig. 2 awareness about safety of dental treatment during pregnancy amongst pregnant women

III. Oral Manifestations Associated With Pregnancy

These include alterations in both the hard and soft tissues. An increase in caries has been associated with excessive carbohydrate intake.^[6] In some instances, morning sickness and vomiting may contribute to the erosion of the lingual surfaces of the teeth caused by exposure to gastric acids. A confounding factor is that pregnancy-associated hormonal changes may cause dryness of the mouth. Approximately 44 percent of pregnant participants in one study reported persistent xerostomia.^[7]

A rare finding in pregnancy is ptyalism, or sialorrhea. This excessive saliva secretion of saliva usually begins at 2nd to 3rd weeks of gestation and may abate at the end of first trimester. The etiology of ptyalism may be due to inability of nauseated gravid women to swallow normal amounts of saliva, rather than form a true increase in saliva production.^[8] Signs of gingivitis (e.g., bleeding, redness, swelling, tenderness) are evident in the second trimester and peak in the eighth month of pregnancy, with anterior teeth affected more than posterior teeth.^[9] The effects of hormonal levels on the gingival status of pregnant women may be accompanied by increased levels of Bacteroides, Prevotella, and Porphyromonas. These findings are exacerbated by poor plaque control and mouth breathing. Increased tooth mobility has been associated with microbial shifts from aerobic to anaerobic bacteria. These bacterial shifts are accompanied by increased inflammation in the attachment apparatus, as well as mineral disturbances in the lamina dura, causing tooth mobility.^[10] Oral and systemic changes associated with pregnancy have been enumerated in Table 1.

Table 1 Oral and systemic changes associated with pregnancy



IV. Oral Health Care During Pregnancy

Education is an important component of prenatal oral health care and may have a significant effect on the oral health of both the mother and the child. Studies have documented that early oral health care promotion starting during pregnancy can lead to a sustained and long-term improvement of the oral health of children.^[11,12] A women’s lack of receiving routine dental care when not pregnant was the most significant predictor of lack of receiving care during pregnancy.^[13] The expectant mother might question the safety of dental treatment during pregnancy. Untreated oral disease may compromise the health of the pregnant female and the unborn child.^[14] The consequences of not treating an active infection during pregnancy outweighs the possible risks presented by most of the medications required for dental care.^[15] In addition, deferring elective dental treatment during a healthy pregnancy is not justified.

The acute problems as pulpitis and abscesses causing severe pain and fever must be addressed in any gestation to avoid adding extra stress and anxiety to the mother and the fetus.^[16] At attention during the third trimester should be given to avoid supine patient position, to reduce risk of suffering transient hypoxia syndrome supine hypotension. The patient should stay on the couch sitting or slightly recumbent and if symptoms of compression of the vena cava are present, rotate it on its left side to release the circulation and also improve ventilation. To perform elective procedures the best time is the second trimester of pregnancy, because during the first months nausea and vomiting are frequent and in the past stages of pregnancy the mother does not feel comfortable in almost any position.

V. Radiographic Considerations During Pregnancy

Dental radiography may be performed in pregnancy for acute diagnostic purposes.^[17,18] These radiographs must be used with caution especially during the first trimester since during this period fetal organs develop and therefore, these are more sensitive to the damage caused by radiation. One should take fewer possible films covering the mother with lead vest to protect the area to reduce the teratogenic risk of radiation exposure. The amount of radiation exposure from dental X-rays is very small, ranging from 0.038 millisieverts(mSv) for bitewing radiographs to 0.15 mSv for a full mouth series.^[19] The health care provider must be aware that the primary dental x-ray beam may pass near or through the thyroid gland, even with attention to proper radiographic techniques. The juvenile thyroid is among the most sensitive organs to radiation-induced tumors, both benign and malignant. Evidence shows that radiation exposure to the thyroid during pregnancy is associated with low birth weight.^[20] During dental radiographic examination of a pregnant patient, optimizing techniques, shielding the thyroid and abdomen, choosing the fastest available image receptor (i.e., high-speed film, rare earth screen-film systems, digital radiography), and avoiding retakes help minimize radiation exposure to the fetus.^[21,22]

VI. Pharmacological Considerations During Pregnancy

Drug therapy in the pregnant patient is controversial because drugs can affect the fetus by diffusion across the placenta. Ideally, no drug should be administered during pregnancy, especially the first

trimester.^[23] However it is sometime impossible to adhere to this rule. U.S Food and Drug Administration (F.D.A) has defined 5 pregnancy drug risks categories given in Table 2.

Table 2 Pregnancy drug risk categories, as defined by U.S Food and Drug Administration ^[24]

Category	Evidence
A	Adequate, well-controlled studies in pregnant women have not shown an increased risk of foetal abnormalities.
B	Animal studies have revealed no evidence of harm to the foetus, however, there are no adequate and well-controlled studies in pregnant women or Animal studies have shown an adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the foetus.
C	Animal studies have shown an adverse effect and there are no adequate and well-controlled studies in pregnant women. or No Animal studies have been conducted and there are no adequate and well-controlled studies in pregnant women.
D	Studies, adequate well-controlled or observational, in pregnant women have demonstrated a risk to the fetus. However, the benefits of therapy may outweigh the potential risk.
X	Studies, adequate well-controlled or observational, in animals or pregnant women have demonstrated positive evidence of fetal abnormalities. The use of the product is contraindicated in women who are or may become pregnant.

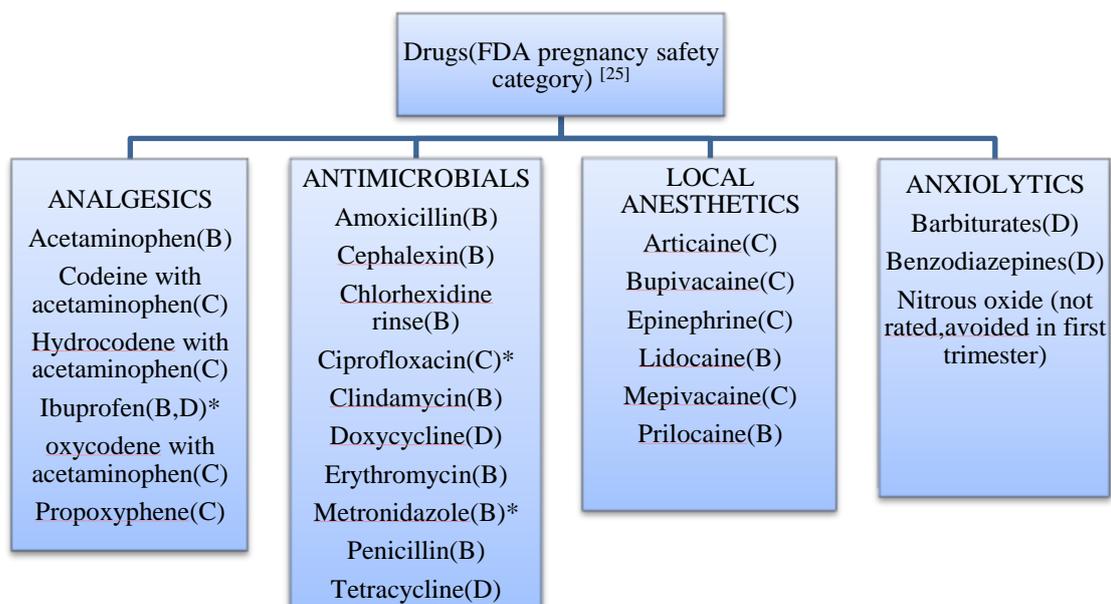


Fig. 3 drugs (FDA pregnancy safety category)

VII. Recommendation Of Oral Care During Pregnancy [3,16,26-28]

- Emphasize the importance of using proper brushing and flossing techniques for plaque control.
- The administration of fluoride should be evaluated depending on whether or not the mother receives other sources of fluoride.
- Remove calculus deposits supragingival and subgingival.
- New carious lesions and defective restorations must be given immediate attention.
- The diet of pregnant women should be monitored and reduction in daily dietary sugar consumption should be taken into consideration. Xylitol and chlorhexidine can decrease bacterial load and reduce maternal buccal bacterial transmission to babies when used in late pregnancy and / or in the postpartum period.
- Smoking should be strictly avoided.

- Dental procedures should be scheduled during the second trimester of pregnancy when organogenesis is complete. Urgent dental care can be performed at any gestational age.

VIII. Conclusion

It is the responsibility of dentist and the profession to inform patients about the biological plausibility that untreated oral disease may increase the risk not only of unfavorable pregnancy outcomes, but also of developing conditions that may affect the wellbeing of the offspring. It is important to remember that treatment is being rendered to 2 patients: mother and fetus. Optimal oral health is very important for the pregnant patient and can be provided safely and effectively. The result of survey provide us baseline data for planning oral health education program for pregnant women.

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