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# Prevalence Of Dental Caries And Gingivitis Among Pregnant And Non-Pregnant Women In Patna Population (An Original Research Paper) Oral Medicine And Radiology

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***ABSTRACT***

***Background :-*** *Good oral health is important across persons lifespan and pregnancy is a particularly important time to promote oral health and healthy behaviour. Hormonal changes during pregnancy make the gums more vulnerable to plaque leading to inflammation and bleeding.*

***Objective :-*** *To study the Prevalence of Dental Caries and Gingivitis among Pregnant and Non-Pregnant Women*

***Methods :-*** *The Study was carried out in the Department of Oral Medicine and Radiology of Patna Dental College and Hospital.In total, 68 women (24 Pregnant and 44 Non-Pregnant) were selected through a Purposive sampling method.*

***Results :- :-*** *In this study it was found that 75 % pf pregnant women had gingivitis in comparison to 47.7% among non-pregnant women. Out of 24 Pregnant women 25 % had clinically healthy gingivitis whereas among non – Pregnant women most of them had healthy gingiva (52.2%)*

***Conclusion :-*** *In our study we found that there is close association of prevalence of dental caries and gingivitis with pregnancy.*

***Keywords :-*** *Dental caries, Gingivitis, Pregnant, Non-pregnant, Estrogen, Progesterone*

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## I. INTRODUCTION:-

Good oral health is important across persons lifespan and pregnancy is a particularly important time to promote oral health and healthy behaviour. Hormonal changes during pregnancy make the

gums more vulnerable to plaque leading to inflammation and bleeding. Although decayed teeth and bleeding gums are seldom life-threatening, people suffering from these Problems are comparable to those suffering from grove non-communicable diseases(1).

1. Oral changes due to the complex Physiological alterations occurring in Pregnancy are believed to be related to fluctuations in levels of estrogen and Progesterone, leading to an increase in oral vasculature Permeability and decrease in host immunocompetence thereby increasing susceptibility to oral infections(2).
2. Published studies have shown that the Prevalence rates & gingivitis during Pregnancy ran below 30 – 100%(3).
3. It is believed that increased consumption of Carbohydrates or increased in the mouth from vomiting and Reduced Salivary Production and increased acidity of Saliva combine to raise the risk of dental Caries in Pregnant women(4).

## II. MATERIAL AND METHOD:

The Study was carried out in the Department of Oral Medicine and Radiology of Patna Dental College and Hospital.

In total, 68 women (24 Pregnant and 44 Non-Pregnant) were selected through a Purposive sampling method. Pregnant women of 2 age group (<25yrs and more than 25yrs) between 3 and 6 months of gestation period were located from Hospital Records and Data were collected from face-to-face interviews using a structured questionnaire. Moreover, written information was obtained from all Subjects who agreed to take part in the Study. Dental Caries and Gingivitis were defined according to WHO criteria newly developed cavity (dental caries) and gingival bleeding on Probing (gingivitis). Data regarding the patient periodontal status were collected from the case records and analysed. Based on clinical paramedics like probing depth, clinical attachment level and mobility, Periodontal status was categorised into clinically healthy gingiva, gingivitis and periodontitis.

## III. RESULT:-

The demographic characteristics of both Pregnant and non-Pregnant women are presented in Table 1.

As shown in Table 2 Pregnant women were likely to have dental Caries and gingivitis compared to Non Pregnant women. Three quarter of Pregnant women had dental caries, while in non-Pregnant group the Percentage of caries was around 54%. Moreover, it was found that 75% of Pregnant women had gingivitis in comparison to 47.7% among non-Pregnant women. Thus, significant differences were revealed between Pregnant and Non-Pregnant women with regard to both dental caries and gingivitis with the P value of < 0.01. (Table 1) Out of 24 Pregnant women 25 % had clinically healthy gingivitis whereas among non – Pregnant women most of them had healthy gingiva (52.2%)

**Table 1** :- Prevalence of gingivitis in pregnant and non-pregnant women

| Gingivitis | Pregnant women (N=24) | Non-pregnant women (N=44) |
|---|---|---|
| Present | 18 (75%) | 21 (47.7%) |
| Not Present | 6 (25%) | 23 (52.27%) |

(P value < 0.01 using chi-square test)

**Table 2** :- Prevalence of dental caries in pregnant and non-pregnant women

| Dental caries | Pregnant woman (N=24) | Non-pregnant women (N=44) |
|---|---|---|
| Present | 17 (70.89%) | 24 (54.5%) |
| Not Present | 7 (29.16%) | 20 (45.5%) |

## IV. DISCUSSION:-

Our study results show that pregnant women had a higher prevalence of gingivitis and caries than non-pregnant women. This is similar to the study done by Patil et al(Petil et al 2018) which was conducted to evaluate the occurrence of dental caries and gingivitis among pregnant and non-pregnant women[(5)]. Similarly, Kashetly et al reported that the mean Gingival index score of the pregnant group (1.25) was found to be significantly higher (P = 0.005) than that of the non-pregnant group (0.82)[(6)]. The high prevalence of pregnancy gingivitis has been ascribed to the altered immune response to stress and anxiety as well as hormonal imbalance known to be associated with pregnancy[(7-13)]. However, the degree of severity of pregnancy-related gingivitis appears to be largely determined by the individual oral hygiene rather than the mere existence of pregnancy[(14)]. Alterations in estrogen and progesterone levels have shown to affect the immune system and the rate and pattern of collagen production in the Gingiva both these conditions reduces the ability of the body to repair and maintain gingival tissues.

Hence women are more likely to develop gingivitis during their period of pregnancy. Increase in the rate of estrogen metabolism and in the synthesis of prostaglandins by the gingival tissue was found to contribute to the gingival changes observed during pregnancy.

The increase severity of gingivitis during pregnancy has been also reported by Emmatty et al (Emmatty, Mathew and kuruvilla 2013)[(15)].

Recent studies further confirmed that Gingivitis associated with pregnancy seemed to be dependent on but UN circulated to the amount of dental plaque accumulation[(16)]. It seemed that good oral hygiene in pregnancy was able to partially neutralize hormonal effect[(17)].

## V. CONCLUSION:-

From above it can be assumed that the fluctuation in estrogen and progesterone levels during pregnancy exerts the influence of subgingival microbiota and inflammatory responses in gingival tissue contributes to gingival inflammation .

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