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The impact hormonal changes in pregnancy & Lactation on periodontal health problems.

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Abstract:
The study aims and throw the light on the adverse effects of pregnancy & lactation due to imbalance of hormones during gestational & lactation Period (Breast feeding) on general health and gingiva which consequently produces preeclampsia, beside preterm delivery, Vulva -vaginitis and low birth weight.
Thus many pregnant women are going to be at risk of bulging gingiva and its swelling due to hormonal imbalance ,which increases during gestational period, whereas Breast feeding make the woman vulnerable at high risk of developing cavities, in the teeth and gum infection, since breast feeding Predispose women to loose 5% of their bone mass, due to the fact that their calcium is going to be transmitted to their infants. besides increases of estrogen and progesterone hormone, which are detected when the females do pregnancy test. Thus estrogen & progesterone are chief pregnancy hormones are to be produced more during one pregnancy than throughout her entire life when not pregnant. Moreover the increase of estrogen during pregnancy enables the uterus & placenta to improve vasealarization, which includes formation of blood vessels. (www.healthline.com). Besides changes related to child birth, hair skin and nails circulatory of respiratory and metabolic changes. Meanwhile pregnancy brings outcomes with a range of changes including effect on breast and Cervix, beside a variety of changes to her body from common & expect changes such as swelling of gingiva, fluid retention, to less familiar ones such as vision changes. Remind you a case control study was conducted & odd ratio is explored of a risk factors for pregnant & lactating women in comparison with non-pregnant and non-lactating women.

Key wards : impact, gestation Breast feeding, on periodontal health

Introduction:

During pregnancy, women endure a variety of mental, physical, and emotional alterations including exhaustion, nervousness, and instability.
These changes can also impact mother's oral health (1).
Changes in the endocrine system during pregnancy raise bacteria in the oral cavity, leading the gingiva to bleed and become swollen.
Furthermore, eating several kinds of snacks during periods of morning sickness raises the risk of dental health issues. Pregnancy can make women more vulnerable to stress and infections, leading to oral health issues.(2)
Furthermore, higher stress leads the oral mucosa to become more inflamed due to susceptibility to infection, and pregnancy gingivitis develops quickly when illness or physical stimulation is present. Pregnant women are more prone to periodontitis and tooth loss compared to non-pregnant women.(3)
Moreover, hormonal fluctuations and modifications to the oral cavity's environmental impairs blood vessel walls, causing gum swelling and raising the risk of periodontitis since these changes encourage the spread of germs because they make saliva more acidic.(4)
2. Literature review :
Pregnancy related gingival reactions to microbial challenge.
Gingival diseases are well documented in mothers throughout the second and third trimesters of pregnancy, despite the fact that the research does not support the notion that pregnancy is a risk factor for periodontal disease. (5,6)
Therefore, it's critical that pregnant women have preventive periodontal treatment and strict plaque control. Numerous studies have shown a direct correlation between PD progression and pregnancy (7),(8),(9),(10),(11),(12).
During pregnancy, sexual hormone fluctuations and elevations have an impact on several organs and modify the immune system (12). Progesterone and estrogen, on the one hand, achieve peak plasma levels by the end of the third trimester that are ten and thirty times, respectively, higher than those seen during the menstrual cycle (13)
However, these hormones' receptors have been found in a number of periodontal cells, making the tissues around the teeth a potential target (14),(15),(16).
In fact, there has been a correlation shown between the transient elevation of these sex hormones during gestation and a rise in the frequency, degree, and intensity of gingival inflammation. Pregnancy granuloma is a particular type of localized inflammatory lesion that occurs in 0.2 percent to 9.6 percent in pregnancy (17).
On the other hand, a more widespread inflammatory lesion known as "the pregnancy gingivitis" is more prevalent and impacts over 1/3 of women who are pregnant (18).
Except for the overt intensity of gingival inflammation in the context of very modest plaque levels, this kind of gingivitis is remarkably similar to plaque-induced gingivitis (19).
During the second and third months of pregnancy, the degree of gingival inflammation is more pronounced without corresponding changes in the plaque index. The loss of clinical attachment is uncommon even with this elevated inflammatory response and concomitant increases in gingival crevicular fluid flow and bleeding on probing (20), (21)
Pregnant women have also been demonstrated to have periodontitis. The frequency of it varies greatly between studies, with rates ranging from zero percent to sixty-one percent (22), (23), (24).
Pregnant women with periodontitis may face a worsening of the disease and more loss of attachment, in contrast to pregnancy gingivitis.

A source of oral microbiota is periodontal pockets. During pregnancy, changes in the oral microbiota could be a possible cause of PD.

According to a study, the growth of "red complex" bacteria, such as Porphyromonas gingivalis and Prevotella, was linked to the worsening of periodontal disease (25).

Another research investigation examined the association between the amounts of estrogen and the pathogenic bacteria that pregnant women carried. Compared to non-pregnant women, the data showed that pregnant women had greater levels of Campylobacter rectus.

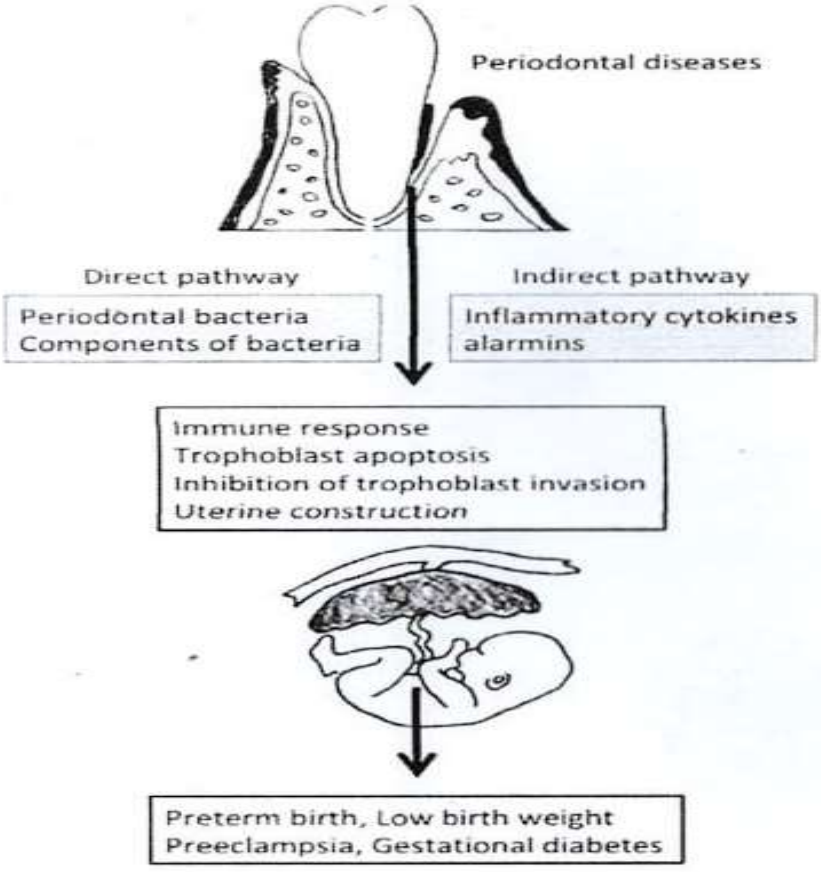
This information makes sense in the light of the direct correlation found between pregnant women's estrogen levels and Campylobacter rectus loading (26).

2.1- The pathogenic mechanisms behind periodontal diseases and their negative impact on pregnancy outcomes:

There are two suggested mechanisms, the direct and indirect pathways. It is thought that pathogenic periodontal bacteria and the oral microbiome spread to the feto placental unit. Thus, in vitro and clinical animal models have been used to study the direct effects of oral

Microorganisms on negative pregnancy outcome. The feto-placental unit and myometrium may be impacted by inflammatory mediators created by infected periodontal tissue, which is another potential mechanism (31).

Figure/ Suggested pathways for negative pregnancy outcome and periodontal diseas



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2.2 : Effect of lactation on oral health

Numerous preventive benefits of lactation have been documented, such as a lower risk of rheumatoid arthritis and breast cancer (32), (33), and there have been reports linking it to the modifications in the mother's calcium homeostasis. Given the significant alteration in bone metabolism during breastfeeding, it has been proposed that breastfeeding may be an indicator for a lack of bone mineral density (34).

There has been little research on how lactation affects the alveolar bone's health (35).

23: Symptom of gingivitis includes:

A- Swellings of the gum.
B- Bleeding mostly during brushing and when
flossing between teeth.
C- tooth mobility.
D-tooth erosion.
F- Tender, Puffy gums.
g-Red gums and bad breath-
h- Finally Periodontitis.

24: Prevention of pregnancy gingivitis includes:

A- Control hormones.
B- Protection of pregnant women teeth and gums
C- Good oral hygiene through ideally brush the teeth twice each day.
D- Tooth Paste used should contain fluoride that provides an extra- protection, by using a soft tooth brush to prevent tenderness of the gums.
E- Flossing at least one each day, where as flossing helps Catch trapped food Particles and bacteria.
F- Eat a healthy diet especially in the first trimester, through taking balanced diet that Contains a variety of fruits, vegetables, Whole grains, and dairy products.
G- Stay away from Sugary or starchy food Like Candy, Cookies, cakes and dried fruits, in which over time all those sugars and Starches Can attack teeth and gums. of Pregnant women.

2.5 -Objectives

Aims of the study :
A- To throw the light of the adverse effectS of hormonal changes on the periodontal health problems in pregnancy and lactation (breastfeeding
B- Prevention of pregnancy gingivitis.

2.6: Materials and Methods.

A. The study group were thirty cases from private dental clinic. The number of cases diagnosed as Periodontal disease from the Period of 1st-January till 1st. of march.
The cases were pregnant women in the second trimesters and thirty matched control cases of non-Pregnant women.
B- Control were neither pregnant nor Lactating Women, pregnant and breast feeding women were referred to the laboratories estrogen and progesterone.
To detect hormonal changes, remind you that ages of study group were 27- 30 years old. Its found an increased estrogen and Progesterone in pregnant women where as prolactin and oxytocin were increased in breast feeding woman.

C- Thus Case Control study was conducted to observe the odd ratio quantity i-e risk factors among pregnant and Lactating women in comparison with, Control group who were neither pregnant nor lactating women

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2.7: The Results

Table (1)
Pregnancy adverse effect on Periodontal disease

factors	Pregnant women estrogen Progesterone	None pregnant women	Total
Periodontal disease +ve	24	2	26
Periodontal disease -ve	3	1	4
Total	27	3	30

Odd Ratio is-4
on Conclusion
Hence the risk factor for Periodontal disease is four times,more than non pregnant Women due to the increase Levels of estrogen and Progesterone.

Table (2)
Lactation effects on Periodontal disease

factors	Lactating women	Non lactating women	Total
Periodontal disease +ve	18	5	23
Periodontal disease -ve	4	3	7
Total	22	8	30

on Conclusion
odd Ratio=3
Hence that risk factor of women having Periodontal disease in Lactating women are more 3 times than non **lactating women.**

2.8: Discussion and Conclusion

The study shows that hormonal levels increased in Pregnant women have 4 times risk of Periodontal disease in Comparison with non pregnant women, where as the risk factor was 3 times more in lactating women in comparison with non lactating women; through using Case Control Study method.

Thus during pregnancy, that the high level of Progesterone makes the pregnant women more, Susceptible to developing bacterial plaque, that Can attack their gums leading to a Swollen gum, which during breast feeding, the women bone density will be lower than normal, which Leads to osteoporosis.

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