DOI: https://doi.org/10.36719/2707-1146/27/31-35

Nurana Ariz Hamidova
Azerbaijan Medical University
nurana.hamidova@mail.ru
Ilaha Ariz Guliyeva
Azerbaijan State Institute of Postgraduate Doctors after name A.Aliyev
dr.ilaha@mail.ru
Rumiya Aghalar Abbasova
Azerbaijan Medical University
ruma.abbasova@mail.ru

PREGNANCY GINGIVITIS

Abstract

Pregnancy gingivitis is caused by an increase in estrogen and progesterone levels. These are essential hormones that help baby grow and develop, but they also cause many changes to your body.

One of these changes is increased inflammation of your gums. Although the exact way this happens isn't clear, healthcare providers think it may be due to: decreased ability of your body to respond to plaque bacteria. Increased blood flow to the gum tissue. There is no evidence that mild red or swollen gums harm your baby's health or cause a miscarriage or premature birth. But if left untreated, gingivitis can lead to periodontitis which is linked to preterm delivery and low birth weight. In periodontitis, inflammation causes your gums to pull away from your teeth, leaving pockets that can become infected. Eventually, this can lead to tooth loss.

Keywords: *pregnancy, gingivtitis, hormonal balance, progesterone, placenta, fetus*

Nuranə Ariz Həmidova
Azərbaycan Tibb Universiteti
nurana.hamidova@mail.ru
İlahə Ariz Quliyeva
Ə.Əliyev adına Azərbaycan Dövlət Həkimlər İnstitutu
dr.ilaha@mail.ru
Rumiyə Ağalar Abbasova
Azərbaycan Tibb Universiteti
ruma.abbasova@mail.ru

Hamiləlik gingiviti

Xülasə

Hamiləlik diş ətinin iltihabı estrogen və progesteron səviyyələrinin artması nəticəsində yaranır. Bunlar körpəninin böyüməsinə və inkişafına kömək edən vacib hormonlardır, eyni zamanda insan orqanizmində bir çox dəyişikliklərə səbəb olurlar.

Bu dəyişikliklərdən biri də diş ətlərinin iltihabıdır. Bunun baş verməsinin dəqiq yolu bəlli olmasa da, tibb işçiləri bunun səbəb ola biləcəyini düşünürlər: bədəninin ərp bakteriyalarına cavab vermək qabiliyyətinin azalması, diş əti toxumasına qan axınının artması,immun sistemin aşağı olması və s. Lakin müalicə edilmədikdə, gingivit vaxtından əvvəl doğuş və aşağı doğum çəkisi ilə əlaqəli olan periodontitə səbəb ola bilər.

Açar sözlər: *hamiləlik, diş ətinin iltihabı, hormonal balans, progestoron, plasenta, döl*

Introduction

Various physiological changes take place through the body of a pregnant woman that include both general and those related to oral cavity. Due to hormonal fluctuations during pregnancy, alterations occur in the levels of estrogen and progesterone resulting in tortuous and dilated microvasculature, more permeability of oral blood vessels, and lowering of host immunity, which eventually cause the host to become more vulnerable to oral infections. Both reversible and irreversible changes take place in oral cavities of women during pregnancy. High levels of estrogen have been found to be associated with occurrence of gingival hyperplasia, gingivitis, pyogenic granulomas, dental caries, and alterations in salivary flow. In the studies conducted previously, oral health of pregnant women, adverse pregnancy outcomes (such as preterm births, low birth weight), and oral health of infants have all been linked to each other.

Pregnancy gingivitis affects most expectant mothers. The main reason for its occurrence is a change in the balance of hormones in the blood of a woman. Hormonal changes in a woman's body during pregnancy are very significant. They are caused by the action of hormones such as progesterone, somatotropin, gonadotropin, etc., produced by the placenta and fetus. The production of these hormones occurs throughout almost the entire period of pregnancy, decreasing only before childbirth (Belousov, Bulanov, 2004: 19-20). If the pregnancy proceeds without complications, hormonal changes do not cause negative changes in the body of the expectant mother. However, even with uncomplicated pregnancy, gingivitis occurs in more than 20% of women. In the case of a complicated pregnancy, this figure is noticeably higher (Belousov, 2005: 26-29; Akaev, 1996: 3-20; Bezrukov, 1997: 11). In this case, most often, gingivitis of pregnant women is caused by the same common causes as ordinary gingivitis. Just in the state of pregnancy, the female body is more open to the occurrence and development of inflammatory processes. Only about 2% of gingivitis cases are caused by the state of pregnancy itself (Buchkova, Chalenko, 2003: 32-34).

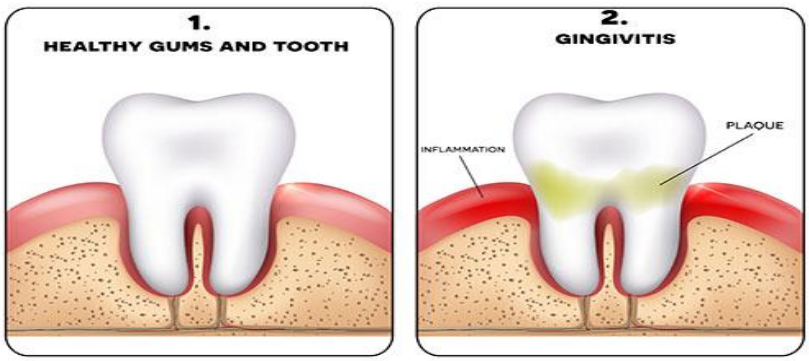
Şəkil 1. Gingivit

Hypovitaminosis (lack of vitamins), metabolic disorders and toxicosis caused by pregnancy are also called by dentists as causes of gingivitis of pregnant women (Akaev, 1996: 3-20). Pregnancy gingivitis can develop as early as the first or second month of pregnancy and progress until childbirth. At the same time, in the second and third trimesters of pregnancy, gingivitis can turn into a state of chronic disease (Borisenko, 2000: 42-44; Davidovskaya, Aksenova, 1983: 31-82; Formenko, 2004: 129; Leous, Zborovsky, 1995: 129).

The main symptoms of gingivitis in pregnancy: Excessive enlargement (growth) of the gums and gingival papillae, partially covering the surface of the crowns of the teeth, swelling and redness of the gums, pain in the gums, aggravated by palpation, bleeding from the gums (especially during brushing your teeth), profuse deposits of dental plaque, bad breath, difficulty eating (especially hard food) Gingivitis during pregnancy, as well as ordinary hypertrophic gingivitis, can be of three degrees: Mild degree, in which the gum covers about a third of the tooth crown Medium degree, in which the gum covers up to 50% of the tooth crown Severe degree, in which the gum covers more than half of the tooth crown (Barak, Oettinger-Barak, Oettinger, Machtei, Peled, Ohel, 2003: 624-628; Loe, Silness, 1963: 533-551). This is manifested by inflammation of the gum tissue, which is adjacent directly to the teeth. With gingivitis, the gums swell, turn red and bleed. The disease is supported by certain types of harmful bacteria. Their decay products can enter the bloodstream and migrate throughout the body, which means that there is a possibility of their effect on fetal tissues. It is also true that complications of diseases occurring in the oral cavity can provoke premature birth and even abortion. Therefore, expectant mothers, your teeth must certainly be in order (Loe, Silness, 1963: 533-551; Cohen, Friedman, Shapiro, Kyle, 1969: 563-570).

Pregnant women should definitely visit the dentist at least 2 times during the entire period of pregnancy: at the beginning and middle of the second trimester. Moreover, thanks to new dental technologies, most procedures have become absolutely safe. Cleaning of teeth from tartar and plaque is carried out with an ultrasonic scaler and Air Flow, the surface of the enamel is polished with abrasive pastes and fluoridated with varnish. These manipulations take only about an hour and a half, and the materials used are harmless to both the woman and the baby. After the procedure of professional oral hygiene (teeth brushing), the teeth are practically “inaccessible” to

İnflamation- iltihab. Plaque - ərp caries, and one must always be vigilant with it. After all, each tooth struck by it is a threatening source of infection.



Şəkil 2. Sağlam diş əti və diş. Gingivit

Awareness programs should be carried out, as pregnancy is an especially important time to promote oral health and healthy lifestyles, including education about the prevention of dental caries and gingivitis. Although decayed teeth and bleeding gums are rarely life-threatening, people suffering from these problems can be compared to someone who suffers from a serious non-communicable disease. Oral changes due to the complex physiological changes that occur during pregnancy are thought to be related to fluctuations in estrogen and progesterone levels (Kornman, Loesche, 1980: 111-122; Lapp, Thomas, Lewis, 1995: 279-284).

Published studies have shown that the prevalence of gingivitis in pregnancy ranges between 30 and 100%. (Machuca, Khoshfeiz, Lacalle, Machuca, Builon, 1999: 779-785; Sooriyamoorthy, Gower). Although there is little evidence that pregnancy increases the risk of caries, some studies have shown that changes in the oral cavity during this period may predispose them to an increased incidence of this

dental problem (Little, Falace, Miller, Rhodus, 1997: 373-380). To date, however, no studies have examined whether the putative combination of oral changes believed to occur during pregnancy (including dietary changes) such as increased carbohydrate intake, acid in the mouth from vomiting, and decreased saliva production and/or decreased or acidic saliva) combine to increase the risk of cavities in pregnant women. However, evidence to the contrary shows that women's nutrition improves pregnancy (Cuco, Fernandez-Ballart, Sala, Viladrich, Iranzo, Vila, Arija, 2006: 364-371). On the other hand, reports from dental clinics showed that the prevalence of gingivitis in pregnant women was 98.0%, 86.3%, and 98.8%, respectively. The rates of needing treatment for dental problems such as caries and gingivitis were 86.0%, 97.0% and 94.8% (Chanduaykit, Buranasan, Kulayasiri, 1991: 15-22).

This study was conducted to compare periodontal health during pregnancy and postpartum.

Materials and methods. 54 pregnant women under the age of 20 weeks of gestation (GW) were randomized into two groups: the experimental group (during pregnancy) and the control group (complex periodontal therapy after childbirth). The main clinical indicators were periodontal index (PI), gingivitis index (GI), periodontal probing depth (PPD), clinical attachment level (CAL), bleeding on probing (BOP), and gingival sulcus fluid (GCF) volume. After the baseline examination, women in the experimental group received periodontal treatment up to 24 GW. The final exam was held at 26 to 28 GW. Women in the control group received therapy 30 days after delivery and were examined 30 days after treatment (Lindhe, Branemark, 1968: 6-11).

Inflammation of soft tissues surrounding the teeth, without loss of attachment, is known as gingivitis, while periodontitis involves damage of supporting tooth structures. The inflammation of gums that is exaggerated during the period of pregnancy is known as pregnancy gingivitis given rise due to changes in hormonal levels and in that of life style of a pregnant woman. In various previous studies, poor oral health such as periodontitis in a pregnant woman has been associated with various adverse pregnancy outcomes such as preterm births and low birth weights. Increase in the hormonal levels of estrogen and progesterone can cause hyperaemia, edema, and bleeding in periodontal tissues; and these are the risk factors for bacterial infections. Hence, there arise a need to know the attitude of pregnant women toward their dental care so that oral health promotion strategies can be aimed at in the required direction for early diagnosis and treatment of pregnancy gingivitis and periodontitis, hence leading to prevention of its probable adverse outcomes on new born babies. Thus, the present study was conducted among the child-bearing age group of pregnant women to assess their knowledge, attitude, and perception of pregnancy gingivitis (Periodontol, 1989: 201-208).

Conclusion

Periodontal therapy significantly reduced periodontal inflammation in both groups. The mean BOP percentage was reduced from 49.14% (± 22.49) to 11.10% (± 7.84) and from 45.71% (± 17.86) to 8.07% (± 5, 21) in the main and control groups, respectively ($p = 0.95$). No statistically significant differences were observed between groups for PI, GI, PPD, CAL, and GCF. The reduction in the mean percentage of BOP stratified for baseline PPD ≥4 mm was higher in the control group ($p < 0.01$), but no difference was observed for HCM at these locations. Conclusions Hormonal changes during pregnancy do not interfere with treatment outcomes in women with widespread gingival inflammation and limited periodontal disease. The role of these hormonal changes in pregnant women with various forms of the disease remains uncertain. Clinical relevance Gum health can be restored regardless of the hormonal challenge that occurs during pregnancy. Pregnant women should focus on good hygiene. This will reduce the workload by reducing dental procedures so as not to include occasional cleanings. During pregnancy, hormone levels continue to rise. This increase in hormone levels leads to an increase in the blood supply to the gum tissue. This increase in blood flow can lead to gum disease known as gingivitis, in which the gum cords are swollen and bleed easily. This disease can lead to acute discomfort.

References

1. Belousov N., Bulanov, V. (2004). Problems of examination and diagnosis in periodontal diseases. Dentistry. No 2, p.19-20.
2. Belousov N. (2005). Causes of widespread severe forms of inflammatory periodontal disease. Periodontology. T. 36, No 3, p.26-29.
3. Akaev, I. (1996). T.27, No 1, p.3-20.
4. Buchkova, I., Chalenko, Yu. (2003). Modern dentistry. № 1, p.32-34.
5. Bezrukov, I. (1997). Moscow: JSC "Dentistry". 11 p.
6. Borisenko, A. (2000). Modern dentistry. No 1 (9), p.42-44.
7. Davidovskaya, M., Aksenova, A. (1983). Problems of clinical microbiology in the clinic. M., p.31-82.
8. Formenko, O. (2004). Moscow: Central Research Institute of Dentistry. 129 p.
9. Leous, P., Zborovsky, E. (1995). Social and Economic Potential of a Preventive Oral Health Program in Belarus within the Framework of Cindi, p.1-21. WHO Regional Office for Europe, Copenhagen.
10. Barak, S., Oettinger-Barak, O., Oettinger, M., Machtei, E., Peled, M., Ohel, G. (2003). Common oral manifestations during pregnancy: a review. Obstet Gynecol Surv. 58:624-628 p.
11. Loe, H., Silness, J. (1963). Periodontal disease in pregnancy. I. Prevalence and severity. Acta Odontol Scan. 21:533-551 p.
12. Cohen, D., Friedman, L., Shapiro, J., Kyle, G. (1969). A longitudinal study in the investigation of the periodontal changes during pregnancy. J Periodontol. 40:563-570 p.
13. Kornman, K., Loesche, W. (1980). The subgingival microbial flora during pregnancy. J Periodont Res. 15:111-122.
14. Lapp, C., Thomas, M., Lewis, J. (1995). Modulation by progestrone of interlukin-C production by gingival fibroblast. J Periodontol. 66:279-284 p.
15. Machuca, G., Khoshfeiz, O., Lacalle, J., Machuca, C., Builon, P. (1999). The influence of general health and socio-cultural variables on the periodontal condition of pregnant women. JPeriodontol. 70:779-785 p.
16. Sooriyamoorthy, M., Gower, D. Hormonal influences on gingival tissue.
17. Little, J., Falace, D., Miller, C., Rhodus, N. (1997). Dental Management of the Medically Compromised Patient, p.373-380. Mosby, St. Louis.
18. Cuco, G., Fernandez-Ballart, J., Sala, J., Viladrich, C., Iranzo, R., Vila, J., Arija, V. (2006). Dietary patterns and associated lifestyles in preconception, pregnancy and postpartum. Eur J Clin Nutr. 60:364-371 p.
19. Chanduaykit, S., Buranasan, N., Kulayasiri, K. (1991). The Study of Dental Status of Pregnant Women in Antenatal Care Clinic of Mothers, Child Hospital, Research Report, p.15-22. Bang Ken Health Center, Bangkok.
20. Lindhe, J., Branemark, P. (1968). The effect of sex hormones on vascularization of granulation tissue. J Periodontal Res. 3:6-11 p.
21. Periodontol, C. (1989). 16:201-208 p.

Reviewer: doctor of medical sciences Jamila Gurbanova

Received: 16.09.2022 Accepted: 28.11.2022