

# Oral Condition in Pregnant Women with Various Types of Diabetes Mellitus



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## Abstract

**Background:** In literature much attention is paid to connection of oral diseases in pregnant women with diabetes, because the course of pregnancy in patients with diabetes can adversely affect both the intrauterine development of fetus, and state of mother. It is proved that the frequency of the carious process and inflammatory periodontal diseases (gingivitis and periodontitis) significantly increase during pregnancy, and diabetes mellitus is an additional adverse factor.

**Aim:** To study and compare dental status of pregnant women with different types of diabetes mellitus and without it using basic and additional clinical research methods, as well as method of periodontal liquid cytology.

## Materials and Methods

There was the examination among 100 pregnant women with different types of diabetes mellitus (1 group– gestational diabetes mellitus, 2 group–type-1 diabetes, 3 group–2-type diabetes, 4 group–control group without diabetes) including survey of oral cavity, questionnaire with questions about obstetric-gynecologic history, women`s complaints and their oral condition, revealing dental indices (hygiene index OHI-S and periodontal index PMA). In addition to clinical methods of investigation, there was done a cytological research of dentogingival sulcus by method of liquid-based cytology and also pH-measurement of mixed saliva.

## Results

Results of case histories analysis among patients who were at departments of pregnancy pathology confirmed that all 100% of women had a pregnancy pathology. There were women with following diagnoses: hypothyroidism, Gilbert`s disease, hepatitis A and B, and gastrointestinal diseases. Pregnant control groups without diabetes were hospitalized to maintain pregnancy with such diagnoses as anemia of pregnant women, polycystic ovary, dermoid ovarian cyst, threatened miscarriage, hypertension of the uterus, hypertension of I and II degrees, chronic pyelonephritis, bronchial asthma, thrombocytopenia, hepatitis A and B.

It is proved that the state of periodontal and hard tissues of teeth is affected by number of pregnancies in history. Among the examined there were women with the first, second, third, fourth and seventh pregnancies, some of them had unsuccessful pregnancy outcomes (frozen pregnancy, spontaneous abortion,

ectopic pregnancy). In group of pregnant women with 2-type diabetes cases of frozen pregnancy (40%) are significantly more often than in other groups.

According to results of questioning, all the patients with diabetes mellitus had symptoms such as high teeth sensitivity from thermal and chemical irritants (29%), bleeding gums during teeth brushing (46%), bad breath (11%) and dryness in oral cavity (7%). More than half (54%) of pregnant women expressed dissatisfaction with their dental and periodontal condition. Only 27% of surveyed were pleased with their status of oral cavity.

Clinical and laboratory studies have shown that most pregnant women have inflammatory periodontal diseases; it was confirmed by results of sounding periodontal space. At dental examination was found that hygienic index OHI-S and periodontal index PMA were significantly higher in groups with diabetes than in the control group, especially in the 2 nd and 3 rd groups (OHI-S1= 1,24, OHI-S2= 1,60, OHI-S3 = 1,47, OHI-S4= 0,75, PMA1= 32,17%, PMA2= 45,27%, PMA3= 51,86%, PMA4= 19,82%). The lowest pH was in 1st group (5,94 points). During the study highest rates of dental indices were found in women in the II trimester of pregnancy.

Cytological condition of periodontal liquid was almost presented in inflammatory type of cytograms with mixed flora, leukocytes and erythrocytes among women with diabetes. In control group cytological picture was presented with cells of multilayered laminated epithelium with admixture of blood. It is scientifically proven that normal type of cytogram is found more



often in control group and less in pregnant women with type-2 diabetes. Subatrophic multilayered laminated epithelium with dystrophic changes was more common in patients with type-1 diabetes mellitus in comparison with other groups.

### Conclusion

Investigation data has showed insufficient condition of dental and periodontal tissues in pregnant women, especially with type-

1 and type-2 diabetes mellitus. It follows that pregnant women with diabetes are at risk for dental diseases and require more attention from dentists, endocrinologists and obstetricians. Using liquid-based cytology method in general assessment of dental status among women with diabetes mellitus helps in diagnosis of inflammatory periodontal diseases.