Dependence of the periodontal state on the gestation period in the pregnant women

Abstract: The stomatological diseases in women during pregnancy present great social problem. Under stomatological examination there were 132 women in the different periods of pregnancy and control group included 50 women without events of inflammatory periodontium diseases. The research showed that the pregnancy results in occurrence and progressing of the parodontium diseases, and the severity of damage achieved maximum in the III trimester, the damage of parodontium induced by pregnancy does not stop in the early postpartum period, remaining statistically significant above the appropriate meanings of control group and index parameters of the I trimester.

Keywords: chronic polypoid rhinosinusitis, morphological study, immunohistochemical study, reticular fibers.

The high prevalence rate and increasing intensity of the main stomatological diseases in women during pregnancy present great social problem [1; 7]. In the meta-analytical systemic review the authors identified statistic clear association between periodontium and unfavourable outcomes of pregnancy [7]; and in the gram negative bacteria in the oral cavity connected with increase of levels of prostaglandin E2, tumor necrosis factor-a, retardation of the embryo growth and lowering weight in newborns [5], The absence of defensive antibodies due to systemic distribution of mother periodontal infection initiate preterm labor [3; 7].

In the pathogenesis of the periodontium lesions in pregnancy the change of balance between sexual hormones, pregnancy pathology, exacerbation of somatic pathology and others are of special attention [1; 6; 7].

In this connection the purpose was to determine prevalence and severity degree of the inflammatory periodontium diseases by CPITN index in the various periods of pregnancy and early postpartum period.

Material and methods. Under examination there were 132 women in the different periods of pregnancy: 132 (trimester I); 110 (trimester II) and 95 (trimester III of pregnancy); and control group included 50 women without events of inflammatory periodontium diseases. In order to obtain representative data in all trimesters of pregnancy there were preserved identical age ratio. The average age of women in groups fluctuated from 26.3 ± 0.81 to 28.82 ± 1.13 years. The number of pregnant women in groups was comparable in relation to percentage rate.

The frequency of the basic somatic pathology, pregnancy complications in the comparative periods, social-economic status of the pregnant women and control group were equal. The state of periodontium tissue was evaluated with use of municipal-parodontium.

Index (CPITN), developed by exerts of the WHO Working Group/FDI for population epidemiological examinations. This index allows evaluation of the prevalence and intensity of the indicators of periodontium tissue lesions (stomorrhagis ant probe taking, presence of perigingival calculus, parodontal pockets of various deep) based on the sextant examination of the oral cavity (4).

The receiving of the most objective data is possible only on the basis of the results of dynamic observation of the evolution of separate nosological forms of the periodontal pathology in the same group of pregnant women during all postpartum period, as well as in the first months of the postpartum period.

On the basis of the evaluation of the periodontal status in the homogenous group of pregnant women in the different period of pregnancy there was established progressing of the
severity stage with increase of pregnancy duration. In these cases the number of sextants with code 0 and 1 reflecting favorite periodontal state progressively reduced and a number of sextants indicating about severe periodontal lesion (codes 2, 3, 4 and X) decreased.

It was noted that the value of code 0 reduced in comparison with control (53.33 ± 7.06 %) in the first trimester by 31.25 % (45.45 ± 4.33 %) (P < 0.01); in the second trimester — by 49.38 % (27.0 ± 4.23 %) (P < 0.01) and in the third trimester — by 65.62 % (18.33 ± 3.97 %) (P < 0.01).

The dynamics of code 1 increased in comparison with control (21.67 ± 5.82 %) by 38.44 % (30.0 ± 4.0 %) (P < 0.01) and 7.69 % (23.33 ± 4.03 %) (P < 0.05) in trimester I and II, respectively, and showed reduction in the III trimester by 29.23 % (15.33 ± 3.70 %) (P < 0.01). This dynamics may be explained with regards to clinical positions, when in the II and III trimesters there were registered dental calculus, gingival-dental pockets and absent sextants in stead of gingival hemorrhage.

Thus, value of code 2 (dental calculus) (21.83 ± 5.84 %) increased in trimester I by 16.03 % (25.33 ± 3.78 %) (P < 0.01); in trimester II — by 38.93 % (30.33 ± 3.83 %) (P < 0.01) and in III — by 60.03 % (35.0 ± 4.89 %) (P < 0.01).

The following dynamics of code 3 (box 4–5 mm.) (2.67 ± 2.38 %) accounted for 43.75 % (3.83 ± 1.67 %) (P < 0.01); 293.75 % (10.50 ± 2.92 %) (P < 0.01) and 462.5 % (15.0 ± 3.66 %) (P < 0.01).

Code 4 (box ≥ 6 mm.) (0.50 ± 0.99 %) was, respectively. 73.3 % (4.17 ± 1.74 %) (P < 0.01); 1566.66 % (8.33 ± 2.63 %) (P < 0.001) and 2500 % (13.0 ± 3.45 %) (P < 0.01). At he same time in trimesters II and III there were registered uncounted sextants (code X) (12.67 ± 1.22 % and 3.33 ± 1.84 %), absent in the control, that indicated about progressing lost teeth in the pregnant women as output of tooth extraction due to caries so as due to periodontal lesion.

It is necessary to note that in the first months after pregnancy there was noted improvement of the periodontal state in relation to the corresponding values in the II trimester of pregnancy, however they remained significantly to be higher (P < 0.05) than the corresponding values in the I trimester.

Thus, the number of healthy sextants, code 0, increased more than 2 times and had no significant differences with trimester I (P > 0.05); the quality of sextants with code 1 (hemorrhages) reduced in comparison with trimester III by 32.62 % (P < 0.01); however it was lower than findings of trimester I by 32.22 % (P < 0.01); number of sextants with code 2 (dental calculus) had no significant differences with findings of trimester III (P > 0.05), but prevailed indicator of trimester I by 30.26 % (P < 0.01).

It is necessary to note, what quantity of sextants with codes 3 and 4 (pockets of 4–5 mm. and ≥ 6 mm.), reflecting current of inflammatory — destructive lesion of parodontium, was exceeded the meaning of the I trimester by 37.84 % (P < 0.01) and 21.87 % (P < 0.01) and was of the below the appropriate sizes of the II and III trimester by 170.27 % (P < 0.01) — 2113.24 % (P < 0.001) and 165.63 % (P < 0.001) — 143.75 % (P < 0.001).

Thus, the indexes of loss of dentogingival attachment (code 3 and 4) during pregnancy are higher, than after puerperal period, and quantity of a tooth stone (the code 2) does not undergo significant changes.

Essential that fact is represented, that the level of destructive damage of the parodontium after labors reliably (66.50 ± 5.62 %) (P < 0.01) exceeds the parameters of the I trimester (54.55 ± 5.43 %).

Conclusion. The received results convincingly prove:
1) the pregnancy results in occurrence and progressing of the parodontium diseases, and the severity of damage achieved maximum in the III trimester;
2) the damage of parodontium induced by pregnancy does not stop in the early postpartum period, remaining statistically significant (p < 0.01) above the appropriate meanings of control group and index parameters of the I trimester.

Increase of qualitative and quantitative parameters of the parodontium state in the dynamics of pregnancy progressing and early postpartum period indicates not only about high needs of the pregnant women in parodontological therapeutic care, but also about importance of the improvement of the current method of the oral cavity sanation in this contingent of the patients with parodontitis [2, 6].

References: