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**PECULIARITIES OF VITAMIN D AND CYTOKINE CONTENT IN
PREGNANT WOMEN**

The scientific evidence accumulated over the past 20 years on the multimodal properties of vitamin D, including the ability to influence the immune system, thus reducing the risk of bacterial or viral invasion, provides a basis for studying these mechanisms in assessing the real contribution of vitamin D provision in pregnant women, as well as its participation in the anti-infectious immunity of this category of patients.

Objective: to study the indicators of cytokine status and the level of vitamin D in pregnant women.

Materials and methods. The study was based on the survey data of 76 pregnant women in the I-II trimester of gestation. The average age of women was 27.0 ± 2.5 years. To diagnose vitamin D deficiency, the serum concentration of 25 (OH) D was determined. Vitamin D deficiency was defined as a decrease in 25 (OH) D levels below 20 ng / ml, while vitamin D deficiency was in the range of 21-29 ng / ml.

The 1st subgroup consisted of 46 pregnant women with vitamin D deficiency in the blood ($<20\text{ng} / \text{ml}$) with an average level of $14.5 \pm 0.5\text{ng} / \text{ml}$. The 2nd subgroup consisted of 30 pregnant women with vitamin D deficiency, the average level was $22.4 \pm 0.6 \text{ ng} / \text{ml}$ ($p < 0.05$).

Cytokines (INF α , IL-8, IL-4, IL-10) in blood serum were determined by ELISA.

Results. IL-10 in group 1 was 67.8 ± 8.5 pg / ml on average, while in group 2 it was 70.1 ± 3.4 pg / ml. IL-4 indices of pregnant women of the 1st group averaged 16.2 ± 3.2 pg / ml, while in the 2nd group - 19.8 ± 2.9 . Significantly high levels of IL-8 (a pro-inflammatory cytokine) were noted in the 1st group of pregnant women compared with the 2nd group (836.4 ± 11.6 versus 559.3 ± 8.9 pg / ml; $P < 0.05$). The content of INF γ in blood serum in group 1 on average reached 63.7 ± 5.8 pg / ml, while in group 2 this indicator was significantly higher and was calculated - 97.4 ± 6.4 ($P < 0.05$). Correlation analysis between the level of vitamin D and cytokines in the blood serum of the 1st and 2nd subgroups showed an inverse relationship between the level of vitamin D and the pro-inflammatory cytokine IL-8 ($R_s = -0.54$; $p: 0.05$).

Conclusions. The study confirms the effect of vitamin D on the functioning of the immune system in pregnant women: it inhibits Th-cell differentiation and the production of Th-cytokines, shifts the balance of Th / Th2-cell responses towards Th2 - responses, producing anti-inflammatory cytokines that protect the body from development infectious process. The results of the studies carried out make it possible to classify vitamin D deficiency as one of the markers of the immune status in pregnant women.