

BIOLOGICAL SIGNIFICANCE OF SOME MICROELEMENTS IN WOMEN OF REPRODUCTIVE AGE WITH CHRONIC VIRAL HEPATITIS B LIVING IN THE ARAL SEA REGION

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The aim of the study was to investigate the influence of certain microelements (zinc, selenium) on the clinical course of chronic viral hepatitis B (CVHB) in women of reproductive age living in the city of Urgench.

Materials and methods of research. A prospective case-control study was conducted with 52 women of reproductive age diagnosed with CVHB, undergoing treatment at the Urgench District Infectious Diseases Hospital, and a control group of 10 apparently healthy women of reproductive age living in the Urgench district of Khorezm region. The levels of selenium and zinc microelements in the blood serum of patients were analyzed in the clinical laboratory of RIIEMYUPKIATM using the "endpoint" method with a biochemical analyzer.

Results obtained. The mean serum selenium level in the main group was 48.7 ± 0.98 $\mu\text{g/dL}$, which was 1.0 times lower than the value in healthy women (51.3 ± 0.23 $\mu\text{g/dL}$) ($p=0.012297$). The content of zinc in the blood serum of patients was 3704.3 ± 74.3 $\mu\text{g/L}$ and was 1.1 times lower than the value in healthy women (5048.7 ± 110.1 $\mu\text{g/L}$) ($p=0.001987$). When studying the microelement levels depending on the activity of the chronic infectious process in patients of the main group, it was found that in 5 patients with minimal activity of the chronic infectious process, the level averaged 52.2 ± 1.1 $\mu\text{g/dL}$, in patients with moderate activity - 47.7 ± 0.87 $\mu\text{g/dL}$, and in those with high activity - 44.3 ± 0.73 $\mu\text{g/dL}$. When studying the correlation between selenium levels and activity of the chronic infectious process, a strong positive correlation was revealed ($r=1.0$), which means that as the serum selenium level decreased, the chronic process intensified. Similar changes were also found in relation to zinc levels. In patients with high activity, the zinc level was on average 3054.8 ± 54.3 $\mu\text{g/L}$, in women with moderate activity - 3827.6 ± 71.2 $\mu\text{g/L}$, and in those with minimal activity - 3140.2 ± 68.7 $\mu\text{g/L}$. Selenium and zinc levels in the blood serum of apparently healthy women of reproductive age living in the city of Urgench, which is considered an environmentally unfavorable area, were significantly lower than the reference level. In women with chronic viral hepatitis B, the levels of these microelements decreased even further, which led to the activation of the chronic infectious process.

Conclusions. Selenium and zinc levels in the blood serum of apparently healthy women of reproductive age in the ecologically unfavorable area of Urgench are below normal, and in women with CVHB, a deficiency of selenium and zinc in blood serum is observed. There is a strong, positive correlation between the decrease in selenium and zinc levels and the activity of the chronic infectious process.