

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



МАТЕРІАЛИ

101 – ї

підсумкової наукової конференції

професорсько-викладацького персоналу

Вищого державного навчального закладу України

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THE EFFECT OF MINERAL METABOLISM AND 25-HYDROXYVITAMIN D ON THE RISK OF ESSENTIAL HYPERTENSION

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Hypertension is a major risk factor for a cardiovascular disease with established complications of stroke, myocardial infarction and heart failure. Despite the high worldwide prevalence of essential hypertension (EH) and known clinical consequences, the underlying causes of EH are not fully elucidated. Identifying novel risk factors for EH is important for understanding the etiology and pathogenesis of it, as well as for suggesting new possible preventive targets in order to reduce the high burden of morbidity and mortality.

The aim of the research was to establish the influence of mineral metabolism and 25-hydroxyvitamin D (25(OH)D) on the risk of essential hypertension.

The study involved 48 healthy individuals in the control group and 72 patients with EH in the main group. The mean age in the healthy group was 43 ± 7.7 years, in the group of patients it was 58 ± 7.2 years. In terms of gender distribution, there were 30 females and 18 males in the control group, 51 and 21 ones in the main group, respectively.

The serum levels of parathormone (PTH) and ionized calcium were measured to assess the mineral metabolism. The serum concentration of ionized calcium was determined by potentiometry, «SINNOWA». To determine the concentration of 25(OH)D and PTH the method of competitive immunofluorescence assay, «MAGLUMI» test was applied. Descriptive statistics was used to study arithmetic mean and standard deviation. To compare the mean in two independent samples the Student's t-test was used. Pearson's chi-squared test was applied to compare frequency of the data values. The difference was considered as statistically significant at the p value less than 0,05 ($p < 0.05$).

The results of the analysis showed that the average level of PTH in the main group was significantly higher, compared to the control group, specifically 60.8 pg/mL versus 54.8 pg/mL ($p < 0.05$). However, the mean of the parameter did not go beyond the reference values in both groups. The study of 25-hydroxyvitamin D levels in the sample examined showed a statistically significantly lower level of it in the group of patients with EH, that was 21.3 ng/ml, compared to the group of healthy individuals, which was 24.4 ng/ml ($p < 0.05$). The data obtained point to the vitamin D deficiency in patients in the main group.

Reduction of ionized calcium (below the lower quartile of normal) increases the risk of essential hypertension by 1,12 times [OR=1,12; 95%CI:0,54-2,32; $p > 0,05$]. With the growth of content PTH risk of EH in the population was significantly lower [OR=0,48; 95%CI:0,21-0,97, $\chi^2=3,31$; $p=0,049$]. Reduction of 25(OH)D concentration (below the lower quartile of normal) increases the risk of hypertension in the examine by almost 3 times [OR=2.83; 95%CI:1.07-8.59, $\chi^2=3.84$; $p=0.049$].

Consequently, the reduction of 25-hydroxyvitamin D concentration increases the risk of essential hypertension in the population by almost 3 times, the increase in parathormone content played a protective role in the examined persons, the decrease of the ionized calcium content had no effect on the risk of EH in the population.

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SYSTEMIC INFLAMMATORY RESPONSE AS A PART OF HEPATORENAL SYNDROME

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Hepatorenal syndrome is a unique type of acute renal failure that develops in patients with decompensated cirrhosis and considered to be a very serious complication of the disease in its