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МЕДИЧНИЙ ФАКУЛЬТЕТ ХАРКІВСЬКОГО НАЦІОНАЛЬНОГО УНІВЕРСИТЕТУ
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ПРОБЛЕМИ СЬОГОДЕННЯ В ПЕДІАТРІЇ

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Aim of study. To assess the role of vitamin D in the development of anemia of inflammation in young children with acute inflammatory bacterial diseases of the respiratory system.

Materials and methods. Studying included 60 young children. The average age was 1.3 ± 0.2 years. The main group included children with acute inflammatory bacterial diseases. Given the hematological pictures, patients shared to subgroups: the first subgroup included 15 children with anemia of inflammation, the second subgroup included 15 children without manifestations of anemia. The comparison group included 10 children with iron deficiency anemia without inflammatory background. The control group included 20 conditionally healthy children. The microbial spectrum of biological materials with mucous membranes of the oropharynx was studied from bacteriological analysis by VITEK 2 COMPACT (VioMerio, France) carried out before the appointment of antibacterial therapy. The determination of serum vitamin D and hepcidin levels in young children was determined using commercial kits: DIASource 25OH Vitamin D Total ELISA Kit (Belgium), Human Hpc (Hepcidin) ELISA Kit (Elabscience, USA). Statistical data processing was carried out using the Statistica 13.0 licensed package. The correlation coefficient was used Spearman's rank correlation coefficient. When evaluating different indicators in the compared groups, Student t-test was used. Differences were considered significant at $p < 0.05$.

Results. An analysis of the data showed that the development of anemia of inflammation occurred against the background of a decrease in the level of vitamin D in the blood serum of children who were under observation in the comparison group and the control group ($p < 0.01$). In the comparison group were no significant differences found. The vitamin D content in the group of children with acute bacterial inflammatory diseases without anemia of inflammation did not differ from its level in the group of children with iron deficiency anemia, but the control group is significantly lower by 1.5 times ($p < 0.05$). Taking into account the data of modern literature about the key role of hepcidin in the development of anemia of inflammation and the inverse correlation between the level of vitamin D and hepcidin ($\rho = -0.8$, $p < 0.05$) in the blood serum, we can assume that the low content of vitamin D is also increases the likelihood of developing anemia in young children, in patients with acute inflammatory bacterial diseases of the respiratory system.

Conclusions. The results of the study showed the pathogenetic role of vitamin D deficiency in the development of anemia of inflammation.

CHANGES OF BLOOD PRESSURE CIRCADIAN RHYTHM IN PATIENTS WITH DIABETES DEPENDING ON BODY MASS

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Introduction. Type 1 diabetes is associated with higher cardiovascular morbidity and mortality, and arterial hypertension is one of the risk factors leading to an increase in the incidence of vascular events in patients with diabetes. Because excessive weight is associated with an increased risk of cardiovascular disease in young people without diabetes, overweight in adolescents with diabetes can increase the risk of developing cardiometabolic complications, namely, hypertension.

Objective: to determine the characteristics of blood pressure (BP) parameters in children with normal body mass and overweight or obese patients with diabetes.

Methods: The study included 53 adolescent children suffering from insulin-dependent diabetes mellitus without signs of acute complications. There were 37 boys and 16 girls with an

average age of $13,83 \pm 0,24$ years. At the time of the examination, all children received insulin therapy with a basal-bolus method. The comparison group consisted of 14 children, representative of age and sex, who had no disorders of carbohydrate metabolism and intercurrent diseases at the time of the study. The diagnosis of obesity and overweight in adolescent children established by the results of the calculation of body mass index (BMI). The first subgroup included 43 diabetic patients with normative gender, age, and height BMI rates. The second subgroup consisted of 10 adolescents with an overweight (85-97 percentiles) and obesity (>97 percentiles). All children were monitored daily for blood pressure by the ABPM-04 (Meditech Ltd., Hungary) during active and passive periods of day with primary data processing by a licensed program. The probability of a null hypothesis (p) was assumed at 5% significance level ($p < 0.05$).

Results. Half of the children in the study group had a normal («dipper») variant of systolic blood pressure reduction at night, primarily at the expense of patients with normal body weight. Although the percentage of patients with insufficient reduction in systolic blood pressure ("non-dipper") in the same subgroup was 41,8%. No over-dipper systolic blood pressure was found in both subgroups at night. In contrast, close to 5% of patients reported a paradoxical increase in systolic blood pressure at night ("reverse dipper", "night-peaker"). Against the background of increasing body weight in patients with diabetes mellitus, there was a redistribution of variants of daily fluctuations in blood pressure. Thus, the number of children with a normal decrease in systolic blood pressure during the passive period decreased (40%) due to an increase in the proportion of patients with insufficient decrease in systolic blood pressure and nocturnal increase, which amounted to 50% and 10%, respectively. Some other results were obtained during the analysis of diastolic blood pressure daily index (DI). Among the children in the study group, a normal decrease in diastolic blood pressure during the passive period was observed in half of diabetic patients with age-related body weight. At the same time, among diabetic patients with overweight dipper-variant of the daily index was registered only in one third of the surveyed children. 25,5% of patients with normal body weight and 40% of overweight/obese patients had an excessive decrease in diastolic blood pressure during the passive period. Increases in diastolic blood pressure at night were recorded in 4,6% patients of the 1st subgroup. At the same time, in patients from 2nd subgroup increased diastolic blood pressure were registered twice as often, which also indicated an additional load on blood vessels among overweight/obese patients. Insufficient nocturnal decrease in diastolic blood pressure among the patients from study group was not significantly different in the subgroups.

Conclusions. In patients with diabetes, excess weight is an additional factor that accelerates the formation of cardiovascular complications.

DIAGNOSIS AND PREDICTION OF INTRAUTERINE INFECTION OF THE FETUS

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The progressive increase in the number of intrauterine infection of the fetus (IUI) is one of the most pressing problems of modern perinatology. Contamination of a pregnant woman with various types of pathogens leads to dystrophic changes and impaired permeability of the placental barrier mechanisms and its involvement in the inflammatory process, resulting in the appearance of clinical symptoms of IUI.

The infectious process in the mother stimulates the immune system of the fetus and leads to the activation of cellular and humoral immunity with insufficient effector mechanisms of the immune response in the newborn. The key role is played by cytokines, the synthesis of which is