

НАЦІОНАЛЬНА АКАДЕМІЯ МЕДИЧНИХ НАУК УКРАЇНИ  
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
Державна установа «ІНСТИТУТ ОХОРОНИ ЗДОРОВ'Я ДІТЕЙ ТА ПІДЛІТКІВ НАМН УКРАЇНИ»  
МЕДИЧНИЙ ФАКУЛЬТЕТ ХАРКІВСЬКОГО НАЦІОНАЛЬНОГО УНІВЕРСИТЕТУ  
ІМЕНІ В.Н. КАРАЗІНА  
РАДА МОЛОДИХ ВЧЕНИХ ДУ «ІНСТИТУТ ОХОРОНИ ЗДОРОВ'Я ДІТЕЙ  
ТА ПІДЛІТКІВ НАМН УКРАЇНИ»

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## **ПРОБЛЕМИ СЬОГОДЕННЯ В ПЕДІАТРІЇ**

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**Матеріали V науково-практичної конференції молодих вчених з  
міжнародною участю  
присвяченої 215-річчю Харківського національного університету  
імені В.Н. Каразіна**

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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**

*Shcherbyna I.M., Plakhotna I.U.*

**Kharkov National Medical University**

**Department of obstetrics and gynecology #1**

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

regulated by proteins of the acute phase of inflammation, such as lactoferrin (LF) and  $\alpha$ -2 - macroglobulin (MG). A change in the content of such proteins makes it possible to predict the development of the inflammatory process in a pregnant woman and evaluate the functional state of the fetoplacental complex.

**The purpose and objectives of the study.** Prenatal prediction of the development of IUI in a newborn based on the determination of the level of immunoregulatory proteins.

**Materials and methods.** 64 women were examined in the 3rd trimester of pregnancy. The main group included women who were retrospectively divided into two subgroups: 1st (n=31) - without the implementation of IUI; 2nd (n=20) with the development of IUI. The control group consisted of 13 healthy women with a physiological course of pregnancy, childbirth and the early neonatal period.

An analysis of the initial infectious morbidity was carried out. To determine the concentration of MG in the blood serum of pregnant women and umbilical cord serum, the method of low-voltage missile immunoelectrophoresis with monospecific antisera was used. The content of albumin in the amniotic fluid was investigated by a standard clinical spectrophotometric method. Determination of the LF content was carried out by the method ELIZA.

**The results of the study.** It was found that women with IgG antibodies to the herpes simplex virus type 1, type 2 (HSV-1,2) and Ch. trachomatis - 12 (23.5%) and 9 (17,6%) of patients, respectively; 7 (13.7%) patients were carriers of Staphylococcus aureus; IgG to CMV - 2 pregnant women (3.9%); mixed carriage was detected in 16 women (31.3%).

The LF concentration was increased  $>4.7$  mg/l, and the serum albumin level was decreased  $<36$  g/l in the group of patients with mixed carriage. At the same time, albumin levels  $>2.5$  g/l and  $MG > 0.09$  g/l increased in the amniotic fluid, which indicates the penetration of blood proteins into the fluid through the placental barrier due to an increase in its permeability. It was revealed that the level of MG in umbilical cord serum in newborns with IUI was increased  $>3.3$  g/l, and the LF level was decreased  $<2.2$  mg/l.

**Conclusions.** Thus, the determination of the level of immunoregulatory proteins can be informative for the functional assessment of the fetoplacental complex in predicting the risk of developing IUI.

## **MEDICAL AND SOCIAL FEATURES OF TEENAGERS STUDYING IN KHARKIV VOCATIONAL-TECHNICAL SCHOOLS**

*Shvets A.M., Arzhannikov I.S., Korobkova-Arzhannikova A.V., Gavrilova T.V.*

**V.N. Karaizn Kharkiv National University  
Department of hygiene and social medicine**

**Objective:** to study the medical and social features and risk factors in adolescents, studying in vocational-technical schools (VTS) in Kharkiv.

**Task:** to assess the prevalence of risk factors of a different nature among students of VTS, which is highly relevant for the prevention of diseases and adaptation to the profession.

**Subject.** A study of the medical and social status of VTS' students in Kharkiv (396 people) was made with using of the programs of the Institute of children's and adolescents' health protection "Children's Health". Data was processed using the program Statistica 7.0.

**Results.** Chronic diseases were observed in 10.3% of adolescents, 17% noted impairment of vision, 30% had allergic manifestations (girls 2.5 times more likely). Recurring complaints were noted by 20.2%. The detailed survey on specific complaints showed that the number of complaints was 2.9 per 1 respondent for boys and 3.5 for girls respectively. The first places were occupied by complaints related to the gastrointestinal tract, general irritability, musculoskeletal system (back

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## ПРОБЛЕМИ СЬОГОДЕННЯ В ПЕДІАТРІЇ

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**Автор ідеї:** Волошин К.В.  
**Відповідальний за випуск:** Волошин К.В.

*Фото на обкладинці:* Карпушенко Анастасія Максимівна  
*Фото надане:* Карпушенко Ю.В.  
*Дизайн та макет обкладинки:* Карпушенко А.М.

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