



of group I (100%). In group II in 33.3% of children adenoviral and in 66.7% - respiratory syncytial infection was detected; in group III - in 25.0% of patients adenoviral, in 55.0% - respiratory syncytial infection, the combination of the two above - in 5.0% of cases, and no pathogen in 15.0% of studied cases.

The content of metabolites of nitrogen monoxide in the condensate of exhaled air indicated a more pronounced inflammatory reaction in the presence of viral and bacterial infection of the respiratory system in patients of clinical group II. For instance, the content of metabolites of nitrogen monoxide in the condensate of exhaled air in children of I and III clinical groups almost coincided and amounted to 35.4 ± 7.02 and 39.3 ± 3.63 $\mu\text{mol/l}$, respectively. And in the meantime, in patients from clinical group II this parameter was 1.5 times higher and averaged 52.3 ± 7.51 $\mu\text{mol/l}$ ($p > 0.05$). At the same time, markers of the proteolytic activity of condensate of exhaled air in children from clinical groups of comparison were characterized by the predominance in the cohort of patients with community-acquired pneumonia according to indices of lysis of small- and medium-molecular proteins. Thus, the proteolytic activity of azoalbumin lysis in children of group I was 1.72 ± 0.11 ml/h, group II - 1.34 ± 0.09 ml/h, group III - 1.32 ± 0.05 ml/h ($p < 0.05$ I: II, III), and by lysis of azocasein, respectively, 1.42 ± 0.14 ml/h, 1.19 ± 0.15 ml/h, 1.08 ± 0.06 ml/h 0.05 I: III).

Thus, we may conclude that bronchial obstruction syndrome accompanies the course of bacterial pneumonia in an average of 44.0% of cases of pneumonia, often is caused by viral infections (most often respiratory syncytial virus). Peculiarities of inflammatory markers in comorbid pneumonia with bronchoobstructive syndrome are the increase in the content of nitrogen monoxide metabolites and proteolytic activity in the condensate of exhaled air.

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PARTICULAR PARACLINICAL INDICES IN NEWBORN SEPSIS PATIENTS WHOSE PARENTS CONSTANTLY LIVED IN DIFFERENT ENVIRONMENTAL CONDITIONS

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Xenobiotics can have a variety of effects on the human body, and especially on the course of intrauterine development. Numerous researchers point out that it is the nature of the environment that can negatively affect the course of certain diseases in both children and adults. Neonatal sepsis is one of the most serious diseases in neonatology practice. And, in our opinion, the topic of the influence of adverse environmental factors on the features of sepsis in newborns depending on the ecological situation of their parents' habitats is unclarified.

The aim of research was to study some paraclinical indices in children with neonatal sepsis whose parents constantly lived in different environmental conditions.

A comprehensive survey of 260 newborns who suffered from neonatal sepsis in 2016-2018 was conducted. The groups have been formed based on the complex evaluation of the prolonged influence of the anthropogenic pollution of air, water and soil on the body of parents of newborns in the parts of the region. The ecological risk coefficient (ERC) has been proposed concerning the environmental situation in the regional centers. Thus, the first clinical group (the main group) included neonatal sepsis patients whose parents permanently lived in parts with an ERC of 2.0 or more and with unfavorable environmental characteristics of the regional center. The second group (comparison) was formed by newborns with sepsis, whose parents permanently lived in areas with a low risk of adverse effects of these environmental factors on their body ($\text{ERC} < 2.0$).

The content of interleukins-6, -8,-10, C-reactive protein, presepsin and procalcitonin in the blood serum of patients with neonatal sepsis showed the activity of the systemic inflammatory response of the body to an infectious agent. It should be noted that high serum levels of interleukin-10, which has an anti-inflammatory effect, was more often registered in patients of the I clinical group. Thus, the blood content of this interleukin 35.0 pg/ml occurred in the newborn of the main group in 23.7% of cases, and in children of the comparison group – in 18.1% of observations. Along with a clearer identification of high levels of anti-inflammatory interleukin-10 in patients of



the I group, a significant decrease in serum concentrations of immunoglobulins of classes A, G, M was observed in these newborns.

Thus, the decrease in the level of the above serum immunoglobulins is probably due to the immunosuppressive effect of xenobiotics on the fetus, whose mother was under the conditions of long-term action of xenobiotics. This, in turn, reduces the resistance of the newborn body to infection and contributes to a more severe course of the infectious process. Probably, the more severe manifestations of neonatal sepsis in newborns of the I clinical group are partly due to a combination of decreased immunoglobulin synthesis and increased interleukin-10 production.

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FEATURES OF CLINICAL-PARACLINICALLY DIAGNOSTICS OF GASTROINTESTINAL FUNCTIONAL DISORDERS OF GROUP NEWBORNS OF PERINATAL RISK

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Dysfunction of the gastrointestinal tract in children under 1 year of age who had a history of perinatal pathology is a topical issue in modern neonatology and pediatrics. One of the most common pathological conditions of the gastrointestinal tract in newborns is disorder of the composition and function of the microflora of the colon, occurring under the influence of perinatal factors and is a precondition for the development of inflammatory bowel disease in the future. Clinical manifestations of intestinal dysfunction in newborns with underlying perinatal pathology are nonspecific, their severity depends on the duration and severity of disorders, the presence or absence of background conditions and are characterized by bloating, delayed meconium excretion due to impaired motor-evacuatory function, paresis with insufficiency of processes of digestion and absorption against signs of endogenous intoxication. Diagnosis of intestinal disorders is made by studying the anamnesis in detail to identify possible causes and pathogenesis of the pathological process, based on clinical examination of the child with local (intestinal) and systemic (extraintestinal) manifestations of the disease, as well as in-depth laboratory and instrumental studies.

Two groups of newborns were examined: I study group consisted of 30 newborns with perinatal diseases of varying severity; Group II - 30 newborns with physiological early neonatal period. Diagnostic complex included detection of secretory immunoglobulin A, alpha-1-antitrypsin and albumin in faeces. Increased levels of these markers showed functional disorders of the intestine.

In response to acute hypoxia, the fetus has a special form of protective reactions aimed not at activating life support mechanisms, but at their suppression, which is manifested by changes in homeostasis with the predominant provision of organ systems responsible for adaptation. As a result, newborns have a complex of vegetative-visceral disorders, which include changes in the functional state of the gastrointestinal tract. On day 6-7 in neonates of group I there was a significant increase in the level of alpha-1-antitrypsin 1125.7 ± 56.25 mg/g against group II 96.5 ± 1.83 mg/g, $p > 0.05$ which is marker of interstitial protein loss and indicates increased permeability of the intestinal mucosa. With inflammation, the level of α -1-antitrypsin can increase threefold, as a result of which it is classified as a marker of acute phase inflammation. Increased albumin levels in children of group I 55.1 ± 2.76 mg / g relative to group II 3.0 ± 0.15 mg/g, $p > 0.05$ indicates a disorder of the processes of parietal absorption, as well as the passage of plasma into the intestinal lumen. The level of sIgA in the feces of newborns who had signs of intestinal dysfunction was slightly higher compared to healthy newborns - 534.3 ± 26.72 mg/g and 373.8 ± 18.69 mg/g respectively, $p > 0,05$. In our opinion, the increase in sIgA levels in newborns with perinatal pathology may be associated with disorders of the formation of the biofilm characteristic of this stage of microbiocenosis formation, with a predominance of opportunistic pathogens.

Thus, early diagnosis of intestinal dysfunction in newborns will increase the effectiveness of treatment and prevent the development of diseases in infancy.