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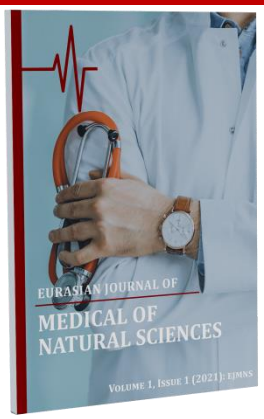

INFECTIOUS DISEASES IN PEDIATRICS: IMPORTANCE IN THE OCCURRENCE OF SOMATIC PATHOLOGY

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ABSTRACT

The article examines the connection between infectious pathology, primarily opportunistic and viral infections, and the formation of chronic diseases and somatic pathology. A scientific meta-analysis of the impact of infections with the onset of autoimmune diseases, chronic pathology of the bronchopulmonary and cardiovascular systems, gastrointestinal tract, urinary system and others is presented. Particular attention is paid to the significance of intrauterine viral infection in the formation of congenital malformations and intrauterine pathology. The infection prevention measures taken to control certain somatic diseases are outlined.

INTRODUCTION

The frequency of infectious pathology is growing every year; opportunistic and viral infections, which are prone to a protracted and recurrent course, come to the fore. There are indications of a connection with infections of autoimmune diseases, chronic pathology of the bronchopulmonary and cardiovascular systems, and the gastrointestinal tract. The role of intrauterine viral infection in the formation of congenital malformations and intrauterine pathology is undeniable.

Infectious diseases have a serious impact on a child's health. There is a group of childhood infections that affect the body primarily during growth. Mortality in childhood in 80% of cases has infectious causes. Over the past 5 years, the number of children under 1 year of age who died from generalized forms of infections, including viral etiology, has increased 2.5 times. In more than 30% of children, disability develops as a result of a severe, complicated course of infectious diseases, primarily neuroinfections [1].

MATERIALS AND METHODS

Understanding of the importance of infections and microorganisms for health has largely developed at the turn of the 21st century. The microflora of the human body is a special organ that covers the inside of the intestinal wall, other mucous membranes and human skin in the form of a stocking. This “stocking” weighs about 1.5 kg in a 10-year-old child and contains about 10 (one hundred billion) microorganism cells, which is an order of magnitude greater than the number of the host’s own tissue cells. This additional organ performs important functions in

the body, without which human existence is impossible; it is involved in digestion, the development of immunity, the synthesis of vitamins and enzymes, the neutralization of toxic substances, etc. One should also take into account the discovery related to the "social behavior" of microorganisms: the identification of information networks within their colonies that allow microbes to carry out simultaneous actions. Thanks to information networks, the mechanism of adaptation of microorganisms to the environment and factors of aggression operates [2]. The composition of the intestinal microbiota is one of the factors shaping human health [3].

RESULTS AND DISCUSSION

Children often suffer from respiratory infections, which, according to some scientists, are triggers for the growth and development of immunity at an early age. Allergists suggest that beneficial bacteria "teach" the baby's immune system to resist allergic reactions. Healthy "cultured" bacteria (probiotics) are found, for example, in yoghurts and cheeses. If a woman received probiotics during pregnancy, and after birth the child also receives them, the frequency of skin allergic reactions is significantly reduced.

In connection with the above circumstances, the connection between infectious diseases and somatic pathology is relevant for pediatrics. There are 3 types of participation of infectious factors in the formation of somatic pathology [4]:

- an infectious pathogen causes and maintains the course of the disease (pneumonia, bacterial endocarditis, carditis, pericarditis, pyelonephritis, cystitis, hepatitis, cholecystitis, meningitis, encephalitis, etc.);
- an infectious agent is a trigger that triggers the development of immune complex or autoimmune diseases - glomerulonephritis, rheumatoid arthritis, reactive arthritis, etc.;
- opportunistic infections contribute to the development of immunosuppression, which adversely affects the course of chronic non-infectious somatic pathology (bronchial asthma - BA, oncohematological diseases, etc.).

It is well known that the most common respiratory diseases among children - laryngotracheitis, bronchitis, pneumonia, sinusitis - are infectious, and only difficulties in verifying the pathogen allow us to consider them as somatic.

The role of infection as a trigger factor in the development or exacerbation of many cardiac, pulmonary, gastroenterological, and neurological diseases in children has been proven.

Timely identification of pathogens and targeted treatment of infections in "somatic" diseases significantly influences the reduction of childhood morbidity, disability and mortality.

Respiratory diseases and allergies

Studies on the role of viral infections in the sensitization of the body and the formation of asthma and chronic lung diseases in children of different ages have established a special role for rhinovirus (to a lesser extent, respiratory syncytial) infection [5]. In 70% of children with asthma, the occurrence of the first attack of suffocation is associated with the addition of acute bronchiolitis (in foreign literature - wheezing). The syndrome of bronchial obstruction in half of the children persists in the outcome of the disease [2].

Cardiovascular and rheumatic diseases

Cardio-rheumatological studies have proven that the development of congenital heart defects (atrial septal defect), as well as diseases of the cardiovascular system such as carditis, arrhythmias, is associated with an active form of CMV infection, and less often with congenital

toxoplasmosis. A special role in the development of cardiomyopathy (dilated variant) is assigned to intrauterine viral infection (respiratory syncytial infection, influenza virus), as well as M. pneumonia. According to the Marburg register of pericarditis (2011), compiled based on the results of pericardiocentesis, pericardioscopy and epicardial biopsy, about 30-50% of all pericarditis have a polyetiological infectious genesis associated with entero-, adeno-, parvoviruses, pneumoviruses, and meningococci, borrelia, etc. Severe pericarditis is observed with herpetic (HHV types 1 and 2) infection, which can also cause damage to the pericardium.

Digestive diseases

Chronic gastroduodenitis and peptic ulcer of the duodenum/stomach are in most cases etiologically associated with Helicobacter pylori (Hp), pseudomembranous colitis - with Clostridium difficile, liver cirrhosis - with the hepatitis C virus [2-4]. In addition, autoimmune chronic gastritis, which has begun to be diagnosed in children, usually occurs against the background of an active infection with the Epstein-Barr virus, more often in combination with Hp.

Chronic gastritis in children is associated with HP in 2/3 of all cases, duodenal ulcer - in 95% of cases. With superficial lesions of the mucous membrane of the stomach and duodenum, Hp is found in 30-60% of children, with erosive changes - up to 75%. Nevertheless, proving the connection between HP and chronic gastritis in a particular child is not an easy task. Determining the genetic heterogeneity of Hp can help, namely the presence of CagA+ and VacA+ phenotypes responsible for the cytolytic activity of bacteria.

CONCLUSION

The risk of developing intrauterine infection is largely determined by the nature of the relationship between the pregnant woman's body and microorganisms, which causes either primary infection during pregnancy or reactivation of a previously acquired infection during the neonatal period in the delayed period. Verified congenital infectious pathology is represented mainly by cytomegalovirus infection and toxoplasmosis, so the efforts of medical workers should be aimed primarily at their prevention. The role of persistent enterovirus infection in perinatal pathology remains a subject of debate. In most cases, we are talking about a mixed infection, detected in 85% of cases during autopsies and virological studies [4].

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