



ANALYSIS OF CHILDREN'S INFECTIOUS INFECTIONS IN HEPATITIS

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Abstract: In this article, the author analyzes the structure of the prevalence of viral hepatitis in the past and present. Offers a review and discussion of identified articles on the analysis of childhood infections, particularly hepatitis.

Key words: children, prevalence, viral hepatitis

АНАЛИЗ ДЕТСКИХ ИНФЕКЦИЙ В ЧАСТНОСТИ ГЕПАТИТА

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Аннотация: В данной статье автор проводит анализ структуры распространенности вирусных гепатитов в прошлом и в настоящем. Предлагает обзор и обсуждение выявленных статей по анализу детских инфекций в частности гепатита.

Ключевые слова: дети, распространенность, вирусные гепатиты

Annotatsiya: Ushbu maqolada muallif oldingi va hozirgi vaqtda virusli gepatitning tarqalish strukturasi tahlil qiladi. Bolalar infeksiyalari, xususan, gepatit tahlillari bo'yicha aniqlangan maqolalarni ko'rib chiqish va muhokama qilishni taklif qiladi.

Kalit so'zlar: bolalar, tarqalish, virusli gepatitlar

Relevance of the problem : In the last 20 years, the problem of viral hepatitis is one of the most urgent problems in medicine. In our country, this is often seen as a threat to national security. The incidence of parenteral hepatitis remains high in all regions, especially in Uzbekistan, where hepatitis B virus carriers make up 11.6% of the population. In Russia, viral hepatitis is second only to respiratory infections and acute intestinal infections. According to official statistics, children account for approximately 20% of all viral hepatitis registered annually (18.1% in 2015, 11.3% in 2020, and 6.3% in 2023). But these statistics are only approximate. First, they reflect the number of newly registered patients in the reporting year. Taking into account that the problem of viral hepatitis is mainly defined by the chronic condition, as well as the so-called "carrier" forms, it is desirable to increase the number of registered patients several times. According to many experts, this figure shows a hidden increase in the number of people infected with hepatitis B and C in our country. At least 1/6 of them are children under the age of 14 and twice as many children under the age of 18. Of course, the urgency of the problem is determined



not by the high level of the disease, but by the risk of developing liver cirrhosis in connection with the frequent occurrence of chronic forms.

Purpose : to study the distribution structure of viral hepatitis in the past and now

Research materials and methods : review and discussion of identified articles on the analysis of childhood infections, particularly hepatitis.

Results and discussion: Today, in the etiological structure of acute viral hepatitis in children, as in previous years, hepatitis A dominates (about 90%), the share of acute hepatitis B does not exceed 3-6% (since 2003, children have been vaccinated taking into account the implementation), and hepatitis C is 1-2%. Significant changes have occurred in the etiological structure of chronic viral hepatitis in children. The share of hepatitis C is increasing year by year: from 25% in 2005 to 51% in 2015, the share of hepatitis B is constantly decreasing from 57% in 2005 to 44% in 2015. When comparing other viral hepatitis, their difference does not exceed 2% in recent years.

A similar situation can be seen in the group of children under one year of life. In recent years, the share of hepatitis A did not exceed 1-3%, hepatitis B decreased from 36% at the end of 2005 to 11% in 2015, hepatitis C from 34.2% in 2005 to 55.8% in 2015 increased, the incidence of other hepatitises (cytomegaly, etc.) did not exceed 7%.

As in previous years, the problem of viral hepatitis in patients with somatic pathology remains relevant. According to our data, 3 years after the start of observation, hepatitis B virus infection in hemophilia patients - 85.2%, in bronchial asthma - 33.3%, in chronic lung diseases - 32, 8%, in diabetes - 13.1%. formed the circumstances; hepatitis C was found in 58.1% of hemophilia patients, 55.8% of hemodialysis patients, and 53.8% of cancer patients. In the etiological structure of viral hepatitis recorded in children with somatic pathology, 44.2% were hepatitis C, 49.1% were hepatitis B, and in the remaining cases (about 10%) were mixed viral hepatitis (HCV + HBV + HDV, etc.). A hepatitis B and C virus genotyping study conducted in collaboration with the Department of Pathology of the National Institute of Infectious Diseases of Japan found that 13.3 percent of hepatitis B patients and 9.3 percent of hepatitis C patients percent were found to have two or three genotypes at the same time, which may indicate repeated infection of children with hepatitis B or C viruses.

Thus, in the etiological structure of viral hepatitis in children, hepatitis A still dominates, while the incidence of hepatitis B shows a tendency to decrease, but the percentage of hepatitis C is increasing. The number of carriers of the hepatitis C virus is growing especially rapidly, and if we take into account that viral carriage is almost equal to chronic hepatitis C with low activity, in the future we should expect an increase in the incidence of liver cirrhosis in adults due to the lack of effective preventive measures. we can come to the conclusion that

Children are infected with viral hepatitis mainly through blood transfusions and operations (more than 50%), during parenteral treatments (about 28%) and family contact (about 5%). Perinatal infection is about 5% with a constantly increasing probability. Taking into account the high incidence of viral hepatitis, we can expect a further increase in the number of people infected by the perinatal route.



Despite the fact that hepatitis A is often present in childhood, from a clinical point of view this infection is not of great importance. The disease is of good quality: light (50-60%) and non-jaundice (8-25%) forms prevail. Severe forms are almost never found. In only 2-3% of acute hepatitis, the process lasts more than 6-12 months, but regardless of the specific time period, it ends with recovery. Long-term observations and studies have shown that patients with hepatitis A do not require mandatory hospitalization or special treatment, and therefore can be treated at home. The ultimate solution to the hepatitis A problem is mass vaccination with inactivated, safe, and highly effective vaccines. The implementation of the mandatory vaccination program according to the national calendar aims to eliminate hepatitis A infection as well as to eliminate it. This problem can be solved because the hepatitis A virus, although not antigenically identical, is characterized by high immunogenicity and forms a strong protective permanent immunity. We believe that the task of eliminating HAV infection can be solved within 10-15 years from the time when the entire population is covered by 100% vaccination. Currently, vaccination of children against hepatitis A virus is carried out privately when they are admitted to state children's institutions.

The results of studying the problem of hepatitis B are not positive enough. In recent years, the number of cases of HBV infection registered annually has decreased significantly: in 2005, the incidence of acute hepatitis B in children was 1.9. 5 and 10 years ago, this figure was 9.9 and 15.3 per 100,000 children, respectively. Also, HBV transmission rate decreased to 8.1 per 100,000 children in 2005 compared to 22.8 and 21.4 in 2010 and 2020, respectively. From a clinical point of view, the disease is well studied. Acute infection is mainly manifested in moderate and severe forms, the risk of fatal fulminant forms remains. But despite this, the main problem is that the percentage of non-jaundice, hidden and subclinical forms is relatively high, in which there is a high probability of becoming chronic. On the other hand, we are convinced that almost all cases of acute hepatitis do not lead to a chronic state and end with a complete recovery of the structure and function of the liver. These data made it possible to consider chronic hepatitis not as a result of the acute stage, but as an independent clinical form. A comprehensive study of the nature of the immunological reaction made it possible to substantiate the concept of the pathogenesis of chronicity, which is a deficiency and imbalance of genetically determined cellular immunity, a decrease in the functional activity of cells of the macrophage-phagocytic system, a decrease in interferon synthesis - as a result, the long-term persistence of HBV and the preservation of the pathological process in the liver allows, in which the liver parenchyma filled with viral antigens participates in the immune process carried out by specially induced T-killer and less K-cells. However, due to genetic determinism, this mechanism of cellular immunity does not lead to getting rid of the pathogen, the disease becomes chronic, and the process of integration of the viral genome into the genome of hepatocytes takes place. Later, the viral genome can be completely integrated into the genome of hepatocytes, but often only the viral gene responsible for the synthesis of the surface antigen is integrated, which proves the unusually high production of HBsAg as a result of chronic hepatitis B, which makes HBV called "healthy portability."

Despite the high risk of integration of the viral genome, the clinical picture of the disease is of good quality; After 10 years, liver cirrhosis develops in only a few patients - 1.3%, and even then, all children have one or another congenital liver pathology. Most often (89%) stable remission



occurs with residual HbsAg emia, and in 9.7% recovery with complete seroconversion occurs during this period.

At the heart of the solution to the hepatitis B problem is mass vaccination, which is actually regulated by the new National Preventive Vaccination Schedule. Since 2013, the hepatitis B vaccination prevention program has been actively implemented in Bukhara. As of August 1, 2006, 85% of the total number of vaccinated people was covered by 2-dose immunization against hepatitis B, which also affected the incidence of HBV infection. Accumulated experience allows us to believe that if universal immunization is achieved in the coming decades, solving the problem of hepatitis B will become a reality.

Against the background of clear successes in solving the problem of viral hepatitis A and B, the problem of hepatitis C can be evaluated radically differently in both adults and children. According to official statistics, although the number of patients with acute hepatitis C has decreased in recent years, the overall incidence does not show the possibility of a clear decrease, and the number of "HCV carriers" does not decrease. Commonly accepted preventive measures (disposable devices, blood tests, certain successes in preventing the use of intravenous drugs, etc.), although they have slowed down the growth of the number of patients, HCV infection in the country remains an epidemic. did not solve the problem of increase. In the current structure of hepatitis C disease, children's disease can be considered to be of good consequence. An increase in the number of infected people is not observed in children under 14 years of age, but if the category of children under 18 years of age is taken into account, these differences are no longer visible, which is explained by the increase in the number of people infected when using parenteral narcotic drugs. The number of pregnant women infected with HCV is increasing, and therefore the incidence of perinatal hepatitis C can be expected to increase further. From a clinical point of view, HCV infection is well studied. The disease, at first glance, is mild. Mild (20-30%) and jaundice-free forms (more than 40%) predominate in the structure of acute hepatitis C, in other cases (about 30%) moderate forms of the disease are diagnosed. Severe and especially fulminant forms do not occur. The clinical presentation of the acute stage of hepatitis C is the same as that of hepatitis B. The main differences are identified when evaluating the nature of the transition. In 70-90% of cases with hepatitis C, the disease takes on a chronic tone, regardless of the severity of the acute stage. The mechanism of damage to hepatocytes lies in the direct cytopathic effect of the virus, in addition, it was found that HCV proteins can cause apoptosis (programmed death) of hepatocytes. It is more difficult to answer the question why acute hepatitis C becomes chronic with such a high frequency. Our data show that the high genetic variability that allows the virus to evade the cellular cytolysis reaction is crucial. In the chronic period, the weakening of the ability of blood mononuclear cells to produce alpha-interferon, a decrease in the activity of the mononuclear-phagocytic system, and an imbalance in the ratio of the effectiveness of T-helpers and T-suppressors to the cellular and humoral immune response against the pathogen is determined.

In childhood, during the entire observation period (up to 10-15 years), the disease, as a rule, manifests itself with minimal clinical signs. The leading clinical symptom is a slight increase and densification of the liver, rarely - the spleen, but 2-5 times, rarely higher, activity of plasma transaminases in the blood is constantly found. As the duration of the disease increases, the number of patients with signs of liver tissue fibrosis increases, and every 5 years the number of



children with morphological signs of liver cirrhosis with significant impairment of the main functions of the liver approximately doubles.

The results of a comprehensive study of etiology and pathogenesis made it possible to develop a unified approach to the treatment of acute and chronic forms of viral hepatitis. We have shown that acute hepatitis A and B do not require special drugs. Such patients do not require mandatory hospitalization, they can be treated at home (hospital at home), observing the developed restrictions on movement, nutrition and symptomatic and pathogenetic treatment. Patients with acute manifest forms of hepatitis A and B do not necessarily require the prescription of recombinant interferon drugs, except for acute forms of hepatitis C, in which early treatment with viferon suppositories, as well as immunocorrectors (cycloferon, etc.) reduces the risk of transition from acute stage to chronic stage. For patients with fulminant hepatitis, administration of glucocorticosteroids according to the scheme we have developed is indicated.

Recombinant interferon-alpha drugs have taken the leading place in the treatment programs for chronic hepatitis B, C and D. Viferon suppositories, as well as various inducers (cycloferon, etc.) are included in pediatric practice. Our research showed that remission was achieved in 66% of chronic hepatitis B patients, 39% of chronic hepatitis C patients, and 25% of chronic hepatitis D patients during treatment with Viferon suppositories; most children in the control group did not experience remission. In the combined treatment of chronic viral hepatitis with viferon and rimantadine, remission occurs in 70%. Thus, treatment results were 14% better than monotherapy with viferon. In the complex treatment of children with chronic viral hepatitis with Viferon combined with Fosfogliv, complete and complete remission was noted in 72% of patients who received monotherapy, while remission was observed in only 56% of children who received Viferon monotherapy. Promising results were also achieved with monotherapy with Fosfogliv . After completing a 3-month course of treatment with Fosfogliv capsules, the viral load for hepatitis B decreased by 2.2 times, and for hepatitis C by 1.6 times.

The programs developed by Russian scientists for the treatment of chronic viral hepatitis in children are no less effective than those of older patients. After completing a 6-month course of therapy with Viferon in patients with chronic hepatitis B, complete remission was observed in 19.7% of children, and partial remission was observed in 44.2% of children, in the group treated with parenteral interferon - 29 and 29, respectively. It was 19.4%. In chronic hepatitis C, after a 6-month course of viferon therapy, complete remission was noted in 20.8%, partial remission in 29.2% of children. In the group treated with parenteral interferons, 31.8% complete remission, 31.9% partial remission was observed in children.

It is very important that the treatment programs we develop using recombinant interferon drug suppositories are safe. We did not observe any side effects in any patient, which is of great importance for pediatric clinics. The concentration of interferon-alpha administered in the form of suppositories is the same as for intramuscular administration.

Conclusion: 1. The problem of viral hepatitis is still one of the most urgent problems in the field of health. 2. The solution to the problem of hepatitis A and B is mass vaccination of the population, and also lies in the purity of vaccination. 3. Currently, there is no alternative to recombinant interferon drugs in the treatment of chronic viral hepatitis. In pediatric practice, suppositories of recombinant interferon-alpha preparations (Viferon) are an effective and safe



means of therapy. 4. Increasing the effectiveness of interferon therapy can be achieved by combining interferon with other drugs (rimantadine, etc.).

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