CLINICAL AND LABORATORY DIAGNOSTICS OF VIRAL HEPATITIS IN CHILDREN

Daminov Feruz Asadullaevich
Associate Professor of the Department of Clinical and Laboratory Diagnostics with a course of clinical and laboratory diagnostics of FOPE,
Ibragimova Nadiya Sabirovna,
assistant at the Department of Clinical and Laboratory Diagnostics with a course of clinical and laboratory diagnostics at the Faculty of Postgraduate Education,
Boboqulova Aziza Kurashboyevna
clinical resident of the Department of Clinical and Laboratory Diagnostics with a course of clinical and laboratory diagnostics of FOPE,
Samarkand State Medical University,
Uzbekistan, Samarkand

КЛИНИКО-ЛАБОРАТОРНАЯ ДИАГНОСТИКА ВИРУСНЫХ ГЕПАТИТОВ У ДЕТЕЙ

Даминов Феруз Асадуллаевич
доцент кафедры Клинико-лабораторной диагностики с курсом клинико-лабораторной диагностики ФПДО,
Ибрагимова Надия Сабировна
ассистент кафедры Клинико-лабораторной диагностики с курсом клинико-лабораторной диагностики ФПДО,
Бобокулова Азиза Курашбоевна
клинический ординатор кафедры Клинико-лабораторной диагностики с курсом клинико-лабораторной диагностики ФПДО,
Самаркандского Государственного Медицинского Университета,
Узбекистан, Самарканд

Annotation. For many years, the problem of viral hepatitis has remained one of the most important in the health care system. Hepatitis transmitted parenterally is of particular relevance, since it is characterized not only by a high frequency of chronicity with the subsequent development of cirrhosis and primary liver cancer, but also by a high risk of death [2, 12]. Currently, 8 pathogens of viral hepatitis are known, named by letters of the Latin alphabet (A, B, C, D, E or letters denoting the initials of the patient in whom the virus was first detected, or the method of transmission of the virus

(GB, TT and SEN), i.e. the “hepatitis alphabet” has increased threefold, but the final etiological decoding of hepatitis has not been completed [2, 11].

Key words: viral hepatitis, clinical course, laboratory diagnostics, prognosis.

Аннотация. На протяжении многих лет проблема вирусных гепатитов остается одной из важнейших в системе здравоохранения. Особую актуальность имеют гепатиты, передающиеся парентеральными путями, так как они отличаются не только высокой частотой хронизации с дальнейшим развитием цирроза и первичного рака печени, но и высоким риском летального исхода [2, 12]. В настоящее время известны 8 возбудителей вирусных гепатитов, названных буквами латинского алфавита (A, B, C, D, E или буквами, обозначающими инициалы больного, у которого впервые был обнаружен данный вирус, или способом передачи вируса (GB, TT и SEN), т. е. «гепатитный алфавит» увеличился втрое, но окончательно этиологическая расшифровка гепатитов не завершена [2, 11].

Ключевые слова: вирусные гепатиты, клиническое течение, лабораторная диагностика, прогноз.

Introduction. Modern possibilities of hepatitis verification allow us to reconsider the role of each pathogen, its influence on the prognosis and outcome of the disease, the necessity and possibility of therapeutic measures. The similarity of infection routes, the absence of cross-immunity predetermine the high frequency of hepatitis of mixed etiology, reaching, according to a number of authors, from 14 to 39% in the structure of all viral hepatitis (VH) [1, 16]. The pathological process in the liver with combined damage by hepatotropic viruses can have a multidirectional character depending on the antagonistic or synergistic influence of the etiological agents, which will determine the tactics of antiviral therapy [2, 18].

The aim of the work: analysis of the epidemiology, diagnostics, clinical course features and prognosis of outcomes of viral hepatitis of mixed etiology in children.

Materials and methods of the study. The study included 62 children aged 1 to 18 years with hepatitis of mixed etiology. Hepatitis A (HA) + chronic hepatitis C (CHC) were diagnosed in 10 children; HA + chronic hepatitis B (CHB) in 6 children; hepatitis B (HB) + CHC in 3 children; hepatitis O (HO) + CHB + CHC in 2 children; CHB + CHC in 36 children; and CHB + chronic hepatitis O (CHO) in 5 children. The disease history and duration were analyzed taking into account the age aspect in order to establish the time of infection with hepatitis viruses.

A comprehensive examination of patients included clinical, biochemical, serological and virological studies, including diagnostics of hepatitis etiology by polymerase chain reaction and instrumental examination. Determination of the level of cytokines I-4, IEI-y, IEI-a by the IFA method was carried out in the immunological

laboratory. 62 patients underwent ultrasound scanning of the liver at least once a year. Morphological studies of liver biopsy specimens were performed in 22 children. The comparison group consisted of 68 patients: 18 with monohepatitis A, 25 with monohepatitis B, and 25 with monohepatitis C.

Results and discussion. It was found that in 12.9% of cases, patients were infected with hepatitis viruses in the first 3 years of life, in 49.3% - in preschool and early school age, and in 37.8% - in adolescence. Infection in 43.6% occurred during surgical interventions and transfusions of blood products, in 35.0% - during intravenous drug administration, in 8.5% - during sexual contacts, and only in 12.9% of patients the route of infection was not established. In most patients, despite a thorough anamnestic examination, it was impossible to determine the sequence of infection with viruses, except for infection with the HA virus.

Among the concomitant pathologies, gastrointestinal diseases prevailed (68%), such as chronic gastritis, biliary dyskinesia, as well as oncopathology - acute lymphoblastic leukemia accounted for 15%, lymphomas - 17%.

Among the observed patients, only in 23.0% of cases did hepatitis of mixed etiology proceed in an acute manifest form, with jaundice syndrome. Moreover, acute forms were recorded mainly with the superposition of GA on CHB and CHC.

The clinical picture of GA disease as a superinfection of chronic hepatitis was typical and practically did not differ from monohepatitis A. The leading syndromes were dyspeptic (67%), asthenovegetative (46.6%) and hepatomegaly (100%). Splenomegaly was detected only in 28.6% of cases. The average biochemical indices were somewhat lower than those in patients with monohepatitis A, but no significant differences in their values were established. Severe forms of the disease in mixed infection were not registered. The icteric period did not exceed 2 weeks. Seroconversion of apN-NAU 1dM to apN-NAU 1dS in 41.1% of patients occurred at the beginning of the 2nd week; the course of hepatitis A in combination with CHB and/or CHC did not worsen, and even a faster recovery was recorded (improved well-being, reduction in liver size and normalization of transaminases). None of the patients observed during the year after hepatitis A showed exacerbation of the chronic process. Thus, the nature of the course of CHB or CHC in children with superinfection with hepatitis A did not change.

Three children (8%) had superinfection of hepatitis B on chronic hepatitis C. Acute hepatitis B on the background of chronic hepatitis C proceeded with a pronounced clinical picture. The icteric period was shorter, compared with monoinfection. After 7 months, all three patients with hepatitis B + chronic hepatitis C had HBeAb, which indicated recovery from hepatitis B in mixed hepatitis B + chronic hepatitis C.

When analyzing clinical and laboratory parameters in 2 patients with NOU superinfection against the background of mixed CHB and CHC, no fulminant forms were detected. NOU superinfection was moderate. When indicating the genomes of viruses B, C and O, NOU RNA was detected in these children in the presence of HBV DNA in one patient, and HSU RNA in the other. During further follow-up observation, it was found that these patients developed CHG against the background of CHB + CHC.

36 patients (57.6%) had chronic mixed hepatitis B + C. These patients had virtually no complaints or manifestations of the disease, except for a slight enlargement of the liver in half of the patients. In this group of patients, elevated ALT levels (from 2 to 3 norms) were noted in 71%. Moderate signs of dysproteinemia (gamma globulins 23% + 1.5) were detected in 22% of children.

When comparing serological parameters, an earlier onset of HBeAg seroconversion to anti-HBe was established in patients with chronic mixed hepatitis B + C, compared to chronic monohepatitis B. Indication of hepatitis B and C genomes in mixed CHB and CHC showed a more frequent detection of HSU RNA - in 51.0%. The opposite process - suppression of HSU RNA of the virus while maintaining HSU DNA was detected much less often - in 12% of cases. In this study, no patients with simultaneous suppression of replication of 2 viruses - HSU DNA (-) and HSU RNA (-) were identified. According to our study, in chronic monoinfections, the frequency of detection of replication of pathogenic viruses in children was: with CHB - 61%, and with CHC - 76%.

Thus, according to both the literature [1, 5, 7] and our data, inhibition of HBV replication in patients with CHB occurred at a faster rate in the presence of the hepatitis C virus. This is probably due to the mutual suppression of the activity of hepatotropic viruses. The subsequent course of HBV infection in these patients followed its inherent patterns.

Initially, chronic mixed hepatitis B + O was observed in 5 patients. Of the clinical symptoms, hepatomegaly was detected in all of them, and splenomegaly in 2 patients. The disease was monotonous, with long-term low (from 2 to 3 norms) hyperenzymemia, without pigment metabolism disorders. HBV RNA was detected in all five patients, and HBV DNA was detected only in 3 patients.

The pathological process in the liver in chronic hepatitis of mixed etiology was characterized by different rates of fibrosis formation, including transition to cirrhosis. However, in general, moderate and severe fibrosis in mixed hepatitis CHB + CHC was registered no more often than in chronic monohepatitis B and C - in 30.6% of cases.

In two children with chronic mixed hepatitis B and C at the age of 1-2 years, liver cirrhosis was documented, which could not be directly associated only with infection with hepatitis B and C viruses, since they had a congenital herpes mixed

infection with cytomegalovirus and herpes virus type 2. These congenital herpes infections could contribute to the development of liver cirrhosis at an early age.

When studying the level of a number of cytokines in chronic mixed hepatitis B + C, hyperproduction of the proinflammatory cytokine IL-4 was established against the background of a sharp deficiency of IFN-a and IFN-y, which indicated the prevalence of Th2 in the immune response. Sharp suppression of interferonogenesis contributes to the disruption of the process of lysis of infected hepatocytes and prevents the elimination of the virus, which induces chronic inflammation in the liver [2, 13].

We believe that the choice of therapy in patients with CHB + CHC should be determined by the dominant role of one or another virus. The main goals of treatment are: reducing the level of viral replication and reducing the degree of liver fibrosis to prevent progression to cirrhosis or hepatocellular carcinoma and improving the quality of life of the sick child [2, 10, 19]. Considering the fact of mutual suppression of the activity of hepatotropic viruses and the possibility of rapid cessation of HBV replication in the presence of HCV, the initial therapy in children with mixed hepatitis B + C can be monotherapy with α-interferon, and the appointment of combination regimens: α-interferon + zeffix for CHB and α-interferon + rimantadine for CHC can be delayed for 3 months.

The obtained results are in accordance with the literature data that the elimination of the hepatitis B virus from the body occurs faster in the presence of the hepatitis C virus [3, 8, 9]. It seems important to monitor the replication of hepatotropic viruses during the course of the disease for the purpose of prescribing antiviral therapy, the choice of which is primarily determined by the dominant role of one or another pathogen.

Conclusions. Superinfection of HA with CHC and CHB proceeds typically, similar to the course of monohepatitis A. The nature of the course of CHB and CHC in children with superimposed HA did not change. The prognosis of the course of chronic mixed hepatitis CHB and CHC depends on the level of replicative activity of the viruses. Inhibition of HBV replication occurred at a faster rate in the presence of the hepatitis C virus.

Pathogenetically significant in chronic mixed hepatitis is the suppression of the production of the cytokine IFN-y, which prevents the elimination of hepatotropic viruses and induces the chronic course of the disease.

Literature

1. Учайкин В. ф. Вирусные гепатиты от А до TTV у детей / В. ф. Учайкин, Н. И. Нисевич, Т. В. Чередниченко — М.: Новая волна, 2003. — 431 с.
2. Шахгильдян И. В. Парентеральные вирусные гепатиты (эпидемиология, диагностика, профилактика) / И. В. Шахгильдян, М. И. Михайлов, Г. Г. Онищенко — М.: ГОУ ВУНМЦ М3 Рф, 2003. — 384 с.

3. Руководство по инфекционным болезням / Под ред. Ю. В. Лоб-зина — СПб., 2000. — С. 38—42.
4. Sabirovna I. N., Muhammadali B. LABORATORY INDICATORS OF NEPHROPATHY IN TYPE II DIABETES MELLITUS //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 5. – С. 93-95.
5. Kudratova Z. E.Isomadinova L. K.Sirojeddinova S. F. Tursunova M. E.Current modern etiology of anemia. novateur publications international journal of innovations in engineering research and technology. № 10. 2023, P. 1-4.
6. Isomadinova L.K. Qudratova Z.E. Shamsiddinova D.K.Samarqand viloyatida urotiliaz kasalligi klinik-kechishining o'ziga xos xususiyatlari. Central asian journal of education and innovation №10. 2023 , P. 51-53
7. Sabirovna I. N., Fotima I. PROBLEMS OF DIAGNOSIS OF COMMUNITY ACQUISITED PNEUMONIA IN YOUNG CHILDREN //TADQIQOTLAR. UZ. – 2024. – Т. 31. – №. 2. – С. 188-192.
8. Бердиярова Ш.Ш., Юсупова Н.А. Особенности иммунометаболических нарушений иммунологической реактивности при гематогенных остеомиелитах, Вестник науки и образования, 29-32
9. Dushanova G. A., Nabiyeva F. S., Rahimova G. O. FEATURES OF THE DISTRIBUTION OF HLA-ANTIGENS AMONG PEOPLE OF THE UZBEK NATIONALITY IN THE SAMARKAND REGION //Open Access Repository. – 2023. – Т. 10. – №. 10. – С. 14-25.
10. Berdiyarova Sh.Sh., Ahadova M.M., Ochilov S.A. COMPLICATIONS OF TREATMENT OF ACUTE HEMATOGENOUS OSTEOMYELITIS, LITERATURE REVIEW, Galaxy International Interdisciplinary Research Journal 293-298
11. Бердиярова Ш.Ш., Юсупова Н.А., Ширинов Х.И. Клинико-лабораторная диагностика внебольничных пневмоний у детей, Вестник науки и образования, 80-83
12. Kudratova Zebo Erkinovna, Karimova Linara Alixanovna Age-related features of the respiratory system // ReFocus. 2023. №1. URL: https://cyberleninka.ru/article/n/age-related-features-of-the-respiratory-system.
13. Sabirovna I. N. et al. Dysfunctions of the Immune System and Their Role in the Development of Diseases //The Peerian Journal. – 2023. – Т. 23. – С. 49-52.
14. Давлатов С. С., Сайдуллаев З. Я., Даминов Ф. А. Миниинвазивные вмешательства при механической желтухе опухолевого генеза периампулярной зоны //Сборник Научно-практической конференций молодых ученных СамМИ. – 2010. – Т. 2. – С. 79-80.

15. Ибрагимова Н. и др. РАССТРОЙСТВА ИММУННОЙ СИСТЕМЫ. ПАТОГЕНЕТИЧЕСКИЕ ОСНОВЫ //Центральноазиатский журнал академических исследований. – 2024. – Т. 2. – №. 1. – С. 4-8.
16. Isomadinova L.K, Qudratova Z.E., Babaxanova F.Sh.clinico-laboratory features of the course of covid-19 with hepatitis b journal of new century innovations №-3. 2023 P. 60-65.
17. Nabiyeva F. S., Ibragimova N. S., Diamatova D. N. 2-TIP QANDLI DIABET KECHISHINING O'ZIGA XOS XUSUSIYATLARI //TADQIQOTLAR. UZ. – 2024. – Т. 31. – №. 1. – С. 28-32.
18. Ширинов Х. И., Ибрагимова Н. С., Ибрагимов Б. Ф. НЕБЛАГОПРИЯТНЫЕ ИСХОДЫ СИНДРОМА ПОЛИКИСТОЗНЫХ ЯИЧНИКОВ У МОЛОДЫХ ЖЕНЩИН //Journal of new century innovations. – 2023. – Т. 26. – №. 3. – С. 185-189.
19. Nabiyeva F. S. et al. CREATION OF OPTIMUM CONDITIONS FOR PROPAGATION OF SACCHAROMYCES CEREVISIAE YEAST //Journal of new century innovations. – 2023. – Т. 23. – №. 1. – С. 85-91.