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## **DIAGNOSIS AND TREATMENT OF VIRAL HEPATITIS IN YOUNG CHILDREN**

**Resume:** Over the past decades, our understanding of the etiology, clinical and laboratory assessment of the severity of lesions of the hepatobiliary system and the formation of outcomes in newborns and young children has significantly expanded.

Liver damage can occur both in utero and postnatal infection, and depends on the state of the protective mechanisms of the child. The introduction of modern and publicly available serological, molecular biological methods of examination into medical practice has allowed expanding the horizons of etiological verification of diseases of the hepatobiliary system. Currently, a wide range of pathogens are known that are interested in the formation of liver pathology in young children, and along with hepatitis B, C, D, G and TTV viruses, representatives of the herpes virus family, mycoplasmosis, chlamydia, parvovirus B19, etc. occupy a historical niche.

**Keywords:** diagnosis, treatment, viral hepatitis, early age.

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## **ДИАГНОСТИКА И ЛЕЧЕНИЕ ВИРУСНЫХ ГЕПАТИТОВ У ДЕТЕЙ РАННЕГО ВОЗРАСТА**

**Резюме:** За последние десятилетия наши представления об этиологии, клинико-лабораторной оценке тяжести поражений

гепатобилиарной системы и формировании исходов у новорождённых и детей раннего возраста значительно расширились.

Поражение печени может произойти как при внутриутробном, так и постнатальном инфицировании, и зависит от состояния защитных механизмов ребёнка. Внедрение в медицинскую практику современных и общедоступных серологических, молекулярнобиологических методов обследования позволило расширить горизонты этиологической верификации заболеваний гепатобилиарной системы. В настоящее время известен широкий спектр возбудителей, заинтересованных в формировании патологии печени у детей раннего возраста, а наряду с вирусами гепатитов В, С, D, G и TTV историческую нишу занимают представители семейства герпес-вирусов, микоплазма, хламидиоза, парвовирус В19 и пр.

**Ключевые слова:** диагностика, лечения, вирусный гепатит, ранний возраст.

**Relevance.** Parenteral viral hepatitis (VH) is one of the most important problems of modern hepatology and human infectious pathology, since they significantly exceed the incidence of other infections in terms of growth rates and prevalence on the globe [1, 2]. Thus, according to WHO, 3-4 million people are infected with hepatitis C virus every year, more than 240 million people have chronic liver damage caused by hepatitis B virus [3, 4, 5].

The frequency of detection of antibodies to hepatitis B and C in pregnant women ranges from 1-2.5% in Western Europe, the USA, Japan and Australia to 10% and higher in some countries of Africa and the Middle East. In the regions of the Russian Federation with moderate intensity of the epidemic process, the frequency of detection of ap<sup>^</sup>-N<sup>^</sup> among pregnant women is 0.9% in 1997 and 2.8% in 2002. A higher frequency is registered among pregnant women in risk groups, among those infected with the human immunodeficiency virus, it is 17-54% [1].

Studies of hepatologists have established that viral hepatitis B and C and pregnancy have a mutually aggravating effect. Manifestations of this influence are a high percentage of miscarriage - the threat of termination of pregnancy occurs 2.5 times more often than in healthy pregnant women; placental insufficiency - signs of intrauterine fetal hypoxia and intrauterine development delay syndrome occur in 22-25%, there is a threat of infection [9, 10, 11, 12]. In most patients, pregnancy does not have a negative effect on the course of the disease and does not pose a risk to the mother. The course of chronic viral hepatitis in pregnant women is characterized, as a rule, by low activity and the rarity of exacerbations [1, 9, 10].

All of the above leads to an increase in the number of pregnant women and women in labor among women suffering from HCV, which poses a real threat not only to the life and health of the expectant mother, but also to the child, who may become an asymptomatic carrier of infection, get sick with acute or chronic hepatitis with the outcome of cirrhosis and hepatocellular cancer.

**The purpose of the study:** to study the features of the course of pregnancy, childbirth, intrauterine development of the fetus and newborns in pregnant women with chronic viral hepatitis B and C.

**Material and methods:** We conducted a retrospective analysis of 75 birth histories with chronic viral hepatitis B and C and 76 (one twin) newborn histories.

**The result and their discussion:** The average age of pregnant women was  $25.1 \pm 3.72$  years. Chronic viral hepatitis B was diagnosed in 25 patients (33.3%), 49 women with chronic viral hepatitis C (65.3%) and 1 woman with viral hepatitis B and C (1.3%).

The social status assessment data revealed problems in the study group: unemployed, excluding housewives, 10 (13.3%); unmarried, excluding civil marriage, 8 (10.7%); most patients had bad habits: tobacco smoking in 29 cases

(38.7%), alcohol dependence was observed in 4 patients (5.3%), drug addiction was detected in 10 (13.3%) patients.

When analyzing the existing extragenital pathology, it was found that more than half of the women in the group (66.7%) were often ill in childhood and had several childhood infections. Diseases of the cardiovascular system (vegetative-vascular dystonia, hypertension) - 15.9%, diseases of the digestive system (chronic cholecystitis, gastritis) -13.3% were diagnosed the most frequent in the pregnant women we took into account. Hepatitis A was detected in 18 women (24%). When analyzing women's awareness of the diagnosis of viral hepatitis B or C before pregnancy, only 19 patients (25.3%) from the entire study group knew about the existence of the diagnosis. According to WHO data in developed countries, only 1/4-1/3 of young women are diagnosed with chronic hypertension before pregnancy [4, 5].

These estimates of reproductive function indicated an almost equal ratio of first- and second-born - 45 (60%) and 30 (40%), respectively. It should be noted that among the first-time pregnant women there were only 24 patients (53.3%), termination of pregnancy by spontaneous miscarriage prevailed - 13.7% or by medical abortion - 26.7%. Gynecological history is burdened in every second patient, the most common were: pelvic inflammatory diseases - 18.6% of cases; sexually transmitted infections - 17.2%.

The peculiarities of the course of the present pregnancy testified that every second pregnant woman was not registered for pregnancy in a women's consultation (33, or 44%). In the patients of the study group, in most cases, pregnancy proceeded against the background of various complications. The most common early cases were: the threat of termination of pregnancy - 17.2% of cases, early toxicosis - 21 pregnant women (28%), anemia of pregnant women -6 (8%) cases. Uncomplicated course of the first half of pregnancy was observed in 32 women (42.7%). Phases of exacerbation of viral hepatitis in the first half of pregnancy were not observed in any patient.

The second half of pregnancy occurred against the background of the threat of termination of pregnancy in 10 (13.3%) patients,

anemia was observed in 38.7% (29 women) of cases, moderate preeclampsia was detected in 25 pregnant women (33.3%). Disorders on the part of the mother-placenta-fetus (hemodynamic disorders, intrauterine growth retardation (IVRP)) were diagnosed in 19 pregnant women (25.3%), polyhydramnios - in 6 (8%) patients, lack of water - in 5 (6.7%). The diagnosis of "cholestasis" was made to 2 women - 2.7%, exacerbation of HCV with deterioration of the general condition was observed in 1 pregnant woman - 1.3%. In 16 (21.3%) women, the second half of pregnancy proceeded without complications.

The data of serological and biochemical blood tests of the examined women showed that 25 (33.3%) pregnant women were diagnosed with HCV, 49 (65.3%) women had antibodies to viral hepatitis C, 1 woman had HBsAg and antibodies to viral hepatitis C (1.3%).

Biochemical blood examination revealed the following deviations: the average value of total protein was  $64.87 \pm 6.71$  g/l; an increase in bilirubin was detected in 5 (6.7%) pregnant women (the maximum value was 65.7 mmol /l); an increase in AlAT occurred in 2 (2.7%) women, reaching a maximum value of 2 mmol /h/l (no. up to 0.68 mmol /h/l), AsAT - in 3 (4%) women, up to a maximum of 0.85 mmol/h/l (no. up to 0.45 mmol/h / l); an increase in the thymol sample was observed in 2 (2.7%) pregnant women, up to a maximum of 7 units (no. up to 4 units), alkaline phosphatase was increased in 12 (16%) people. No changes in coagulogram parameters were detected in any patient.

To compare the indicators of biochemical screening in the patients of the study group with the indicators of physiologically occurring pregnancy, a group of practically healthy women with uncomplicated course of the gestational process (n=21) was recruited. The analysis of the data obtained in the study group revealed significant differences in the average values of the amount of

bilirubin -  $18.83 \pm 3.64$  mmol / l and AlAT -  $0.64 \pm 0.12$  mmol / h/ l in the direction of increase compared with those in physiologically progressing pregnancy ( $p < 0.05$ ). The average indicators remained within the normative values.

Testing for markers of viral hepatitis B and C three times (in each trimester of pregnancy) is a routine examination method that allows you to identify asymptomatic hepatitis virus carriers, but does not exclude the possibility of further infection.

Viral hepatitis B and C have a negative effect on the course of pregnancy of both the first and second half, causing the threat of termination of pregnancy (13.3%), placental insufficiency (25.3%), moderate and severe preeclampsia (33.3%). In every 3rd pregnant woman (32%), there are changes in the biochemical parameters of the blood (total bilirubin, aminotransfer, alkaline phosphatase, thymol test) in the direction of increase.

**Conclusions.** The presence of changes in the utero-placental complex (chronic fetal hypoxia, fetal and second-degree IVRP) leads to a complicated course of the early neonatal period of newborns (development of cerebral ischemia, I and second degree (60%), hypotrophy of the newborn (28%), VAI (24%)).

Based on our data and literature data, it can be reliably stated that there is a transplacental transmission of HCV and HCV C antibodies, since, according to the data obtained, 6.7% of newborns have HCV, 58.7% have antibodies to HCV C. In 36% of cases, the presence of HBsAg and HCV antibodies were not detected. However, to resolve the issue of possible infection of the child, a repeated laboratory blood test for the presence of viral antibodies and RNA /DNA in 1-, 3-, 6-, 12-, 18- months of pregnancy.

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