THE COURSE OF PREGNANCY AND CHILDBIRTH IN VIRAL HEPATITIS B

[1]Azimova Komila Islomovna, [2]Jurakulov Sukhrob Zafar ugli
Alfraganus University, non-governmental higher education institution
https://doi.org/10.5281/zenodo.10928116

Abstract. *Viral hepatitis B is a significant global health concern, affecting millions of people worldwide. In pregnant women, hepatitis B virus (HBV) infection can have important implications for both maternal and fetal health. This abstract provides an overview of the course of pregnancy and childbirth in women with viral hepatitis B. During pregnancy, women with chronic HBV infection may experience fluctuations in viral load, with potential consequences for liver function and overall health. Close monitoring of liver enzymes and viral load is essential to ensure timely interventions if necessary. Antiviral therapy may be recommended in certain cases to suppress viral replication and reduce the risk of vertical transmission to the newborn.*

Keywords: *hepatitis B virus (HBV), antigen (HBsAg), viral hepatitis, Chronic viral hepatitis B (CHB), bloodborne hepatitis viruses.*

Viral hepatitis and pregnancy remain one of the current issues in obstetrics. The prevalence of viral hepatitis is enormous. Worldwide, approximately 400 million people are infected with viral hepatitis B.

Hepatitis B is a viral infection primarily affecting the liver and characterized by a wide range of clinical manifestations, ranging from asymptomatic carrier state and acute hepatitis B to progressive chronic forms, ultimately leading to liver cirrhosis and hepatocellular carcinoma.

Chronic viral hepatitis B (CHB) is a chronic infectious disease characterized by the persistence of hepatitis B surface antigen (HBsAg) for more than 6 months after an acute infection caused by hepatitis B virus (HBV).

Viral hepatitis ranks third among infectious diseases in terms of their wide distribution, the damage they cause to population health, and economic losses (Zueva LP, Rahmanova AG, et al., 2012).

Viral hepatitis is one of the prevalent infections worldwide, with reproductive-age individuals being predominantly involved in the epidemic process. There is also a high risk of perinatal and postnatal transmission of the infection to children. In recent years, the frequency of viral hepatitis and the number of carriers among pregnant women have increased (V.N. Kuzmin, 2008; I.I. Kosagovskaya, E.V. Volchkova, 2013; A. Baumann-Popczyk, 2011; M.C. Ferguson, 2011; D. Gomez-Barroso et al., 2012; J.J. Ott et al, 2012).

Chronic viral hepatitis often does not have an adverse impact on the course of pregnancy, but there is a risk of vertical transmission of the virus. The majority of HBsAg carriers are asymptomatic, potentially infectious, and a source of new infections [5, 6].

In the structure of viral hepatitis cases among pregnant women, 40% to 70% are comprised of bloodborne hepatitis viruses, such as hepatitis B, C, and D. This may be attributed to the more frequent medical procedures undergone by this population group (H.E. Blum, 2009; K.A. Serepko, 2011; I.I. Kosagovskaya, E.V. Volchkova, 2013; K. Abdul Qawi et al., 2010; A. Azarkeivan et al., 2012).

It has been found that under the same conditions of infection in infection foci, pregnant women are 5 times more likely to develop viral hepatitis compared to non-pregnant individuals. This can be explained by the high susceptibility of pregnant women's bodies to the infectious hepatitis virus due to changes in liver function and a weakened immune system (V.N. Kuzmin, 2008; M.G. Peters, 2009; R. Aggarwal, 2011). Timely diagnosis of hepatitis is of great importance, as suspicion of viral hepatitis arises in 1.2% of cases in maternity hospitals (K.A. Andriutsa et al., 2003; V.V. Gorbakov, 2009).

The issue of the impact of viral hepatitis on the course of pregnancy remains insufficiently studied (Evtushenko I.D., Chuikova K.I., Radchenko L.I., et al., 2007; Spradling Ph.R., Rupp L., Moorman A.C., et al., 2012).

There are three possible routes of transmission of hepatitis B virus from an infected mother to her child: prenatal (intrauterine or transplacental), intranatal (during childbirth), and postnatal transmission (through childcare or breastfeeding). It is widely recognized that the most common transmission occurs during or immediately after childbirth. That is why timely vaccination of newborns can prevent infection in approximately 80-95% of cases. The risk of transmission of HBV during childbirth depends on the duration and intensity of contact between the newborn and cervical secretions and maternal blood.

In general, women with chronic viral hepatitis B usually tolerate pregnancy well. During pregnancy, exacerbations of hepatitis B are usually not observed, and liver enzymes often normalize. According to our data, normalization of alanine aminotransferase (ALT) levels occurs in 78% of women who had elevated ALT levels at the beginning of pregnancy by the third trimester. However, there are several reports of exacerbations of hepatitis B during pregnancy, including cases of fulminant hepatic failure (Liu Y., Hussain M., Wong S., et al., 2007; Mahtab M.A., Rahman S., Khan M., et al., 2008). Some women experience hepatitis exacerbations in the first few months after delivery (Lin H.H., Wu W.Y., Kao J.H., et al., 2006; Nguyen G., Garcia R.T., Nguyen N., et al., 2009; Borg M.J., Leemans W.F., de Man R.A., et al., 2008).

There is limited data on the impact of maternal chronic hepatitis B virus (HBV) infection on pregnancy outcomes. The results of published studies on this topic are contradictory. Some studies have found no association between adverse pregnancy outcomes and the presence of chronic HBV infection in mothers (Connell L.E., Salihu H.M., Salemi J.L., et al., 2011). However, there are also studies indicating higher rates of maternal and neonatal morbidity in the presence of chronic HBV infection, including conditions such as fetal distress syndrome, preterm birth, and meconium peritonitis (Nguyen G., Garcia R.T., Nguyen N., et al., 2009; Potthoff A., Rifai K., Wedemeyer H., et al., 2009).

Fetoplacental insufficiency (FPI) is one of the main causes of perinatal morbidity and mortality. In cases of severe chronic hepatitis B virus (HBV) infection during pregnancy, there is suppression of the fetoplacental system function, leading to fluctuations in the levels of fetoplacental hormones. This is attributed to the decreased detoxification function of the liver and placenta. The severity of these impairments correlates with the etiology, duration of the infectious process, and the development of obstetric and perinatal pathology (Evtushenko I.D., Chuikova K.I., Radchenko L.I., et al., 2007; Bai H., Zhang L., Ma L., et al., 2007).

The results of the conducted study revealed that in cases of acute hepatitis B, acute hepatitis C, and viral hepatitis of mixed etiology, there were no significant differences in somatic or gynecological morbidity compared to the control group. However, patients with chronic hepatitis

B and C were significantly more likely to have combined somatic pathology and gynecological disorders compared to women in the control group. They also had a higher frequency of spontaneous miscarriages and missed pregnancies in their reproductive history.

When studying the peculiarities of pregnancy in women with viral hepatitis, it was found that in the first trimester, the most common complications were early toxemia and threatened miscarriage. These complications were more frequent in cases of acute viral hepatitis compared to chronic forms and compared to the control group.

Among the complications in the second trimester of pregnancy, threatened miscarriage was most commonly observed in the viral hepatitis group. It accounted for 53.6% in acute viral hepatitis and 41.2% in chronic viral hepatitis, exceeding the control group by 5.2 and 4 times, respectively. In contrast, for viral hepatitis of mixed etiology, acute viral hepatitis with superinfection, and chronic viral hepatitis with superinfection, this indicator exceeded the control group by 1.8, 3.5, and 2.5 times, respectively. The next most common complication in the second trimester was maternal anemia, with the highest prevalence observed in the chronic viral hepatitis group (40.2%) and viral hepatitis of mixed etiology group (35.3%), which was 1.4 and 1.3 times higher than in the control group, respectively. The frequency of this complication in the other groups was similar to that of the control group (Shonaeva N.D., 2016).

Common complications during childbirth for women with chronic viral hepatitis B include untimely rupture of membranes, preterm birth, abnormal uterine contractions, intrauterine fetal hypoxia, abnormal placental attachment or detachment, bleeding during labor and the early postpartum period. The aforementioned data provide strong grounds to classify women with chronic viral hepatitis B as a high-risk group for potential adverse pregnancy outcomes for both the mother and the fetus (Shonaeva N.D., 2016).

The damaging effect of the virus on the pregnant woman's body is least pronounced in acute viral hepatitis A (VHA), while it is significantly more severe in acute viral hepatitis B (VHB) and acute viral hepatitis C (VHC). The worst clinical outcomes are observed in the acute stage of the disease. Pregnant women with acute viral hepatitis B tend to have a more severe course compared to those with acute viral hepatitis A and acute viral hepatitis C. Disease exacerbations in acute viral hepatitis B and acute viral hepatitis C occur more frequently in the first trimester (32.1%) and the third trimester (46.4%) (Shonaeva N.D., 2016).

REFERENCES

1. World Health Organization. (2019). Hepatitis B. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hepatitis-b

2. World Health Organization. (2019). Hepatitis C. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hepatitis-c

3. World Health Organization. (2017). Hepatitis D. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hepatitis-d

4. Centers for Disease Control and Prevention. (2021). Hepatitis B FAQs for the public. Retrieved from https://www.cdc.gov/hepatitis/hbv/bfaq.htm

5. Centers for Disease Control and Prevention. (2021). Hepatitis C FAQs for the public. Retrieved from https://www.cdc.gov/hepatitis/hcv/cfaq.htm

6. Lavanchy, D. (2004). Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. Journal of viral hepatitis, 11(2), 97-107.

7. Mohd Hanafiah, K., Groeger, J., Flaxman, A. D., & Wiersma, S. T. (2013). Global epidemiology of hepatitis C virus infection: new estimates of age-specific antibody to HCV seroprevalence. Hepatology, 57(4), 1333-1342.

8. Lok, A. S., & McMahon, B. J. (2009). Chronic hepatitis B: update 2009. Hepatology, 50(3), 661-662.

9. Zampino, R., Boemio, A., Sagnelli, C., Alessio, L., Adinolfi, L. E., & Sagnelli, E. (2010). Hepatitis B virus burden in developing countries. World journal of gastroenterology, 16(40), 5096-5102.