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Letter to the Editor-Editöre mektup

Pregnancy and hepatitis B

Gebelik ve hepatit B

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Dear editor,

It is estimated that approximately 2 billion people are infected with hepatitis B virus (HBV) and 350 million people carry the virus chronically all over the world [1]. The main transmission ways of HBV are parenteral contact with the blood or body fluids, transmission to the newborn from the infected mother (vertical way) and contact with the infected people (horizontal way) [2]. Two important complications of chronic HBV infection are primary hepatocellular carcinoma (HSC) and liver cirrhosis [3]. Since HBV infection in childhood causes liver cirrhosis and HSC on high rate in the future periods of life, it leads to an important public health problem [4]. Preventing the transmission to the newborn from the mother is very important in global eradication of chronic HBV infection [5]. Acute hepatitis B during the pregnancy does not increase the probability of abortion, stillbirths and congenital malformations. However, if the acute infection occurs at the last trimester of the pregnancy, it is related to the low birth weight and an increase in the prematurity incidence. In this setting, the perinatal transmission rate is high (60-90%). During the pregnancy, it is not likely that chronic Hepatitis B increases the maternal morbidity and mortality or fetal complication risk, but there exist reports about the increase in the incidence of maternal and neonatal complications (eg: gestational diabetes, antepartum haemorrhage and threatened preterm labor). Theoretical HBV transmission risks at the birth are related to the probability of the mixing of the maternal-fetal blood and exposing to the servical and vaginal secretion at the time of passing from the birth canal [6]. Since the perinatal transmission occurs during delivery on high rate, it is very important because of being preventable with the vaccine and/or hepatitis B hyperimmunoglobulin (HBIG) and because of the high rate of chronicity related to early facing with the virus. For children born from a mother whose HbeAg is positive, infection risk in the first six months is 70-90%, it is 10-40% when the mother is HbeAg negative and 90% of these infants develop chronic infection [2].

For this reason, World Health Organisation suggests to have all the pregnant women to be tested for HBsAg and apply HBIG with the vaccine at the time of birth to the newborns whose mothers are determined to be HBsAg positive [7]. If it is established after the delivery that the mother is HBsAg positive, HBIG must be done to the newborn immediately (in the first seven days after delivery) and the vaccine scheme must be completed. Also Hepatitis B vaccine is safe at the every stage of pregnancy and hepatitis B vaccine scheme must be applied to the every woman without immunity and who have risk factors [6]. Delivery by cesarean-section is not suggested because of the lack of

evidence showing that cesarean-section can prevent the vertical transmission. Also breastfeeding does not cause any risk for transmission of HBV [8]. The active-passive immunoprophylaxis applied to the newborn considerably decreases the transmission from HBeAg positive mother. However, in spite of the immunoprophylaxis with Hepatitis B vaccine and HBIG, between 5 and 10 percent of the infants born from HbeAg positive mothers become HBsAg positive later. This infection rate may be related to high viral load of the mother, transmission of HBV to fetus during intrauterine phase or the presence of mutation on the surface protein of HBV [6]. The treatment of the pregnant women who have chronic HBV infection remains a matter of debate because there do not exist strong evidences showing the benefits of the treatment. On the other hand, studies have showed that the HBV transmission risk for the infants born from the pregnant women whose viremia levels are high (≥8 log10 copy/ml), is increased despite the active-passive immunoprophylaxis [9]. A few short reports about the use of antiviral treatment to prevent the perinatal HBV infection were published [4-6]. In the study done by Xu eat al. [10], Lamivudine 100 mg/day treatment was given to 56 of 114 women whose serum HBV DNA levels are high (≥ 1.000 MEq/mL) by beginning week 32 of the pregnancy and continued up to four weeks after the delivery, the other 59 women received placebo treatment. All the infants took HBIG within 12 hours after delivery and were vaccined. When they became 1 year old, 18% of the treated children were HBsAg-positive, while 39% of the children in the control group were positive (p≤ 0.014). At the result of this study, Xu et al. proved that decreasing of maternal viral load by using lamivudine at the third trimester resulted low likelihood of perinatal transmission. If a treatment is required at the third trimester of a pregnant woman, the most effective three treatment choices are lamivudine (pregnancy class C), tenofovir (pregnancy class B) and telbivudine (pregnancy class B) [6]. With the placebo-controlled studies which will be done, answers to the questions that when to begin antiviral treatment, what the toxic effects of the medicines are, when to withdraw medicines and reactivation of the illness when the medicine was stopped, must be searched [5].

As a result; the aim of treating HBV infected pregnant women with an antiviral agent is to reduce the probability of transmission of HBV to the newborn. For this reason, current treatment approaches for pregnant women having high HBV viral load, after considering the risks and the benefits of the treatment with the mother, change on the direction of starting treatment with an oral antiviral agent at the third trimester.

References

1. World Health Organization: Hepatitis B. World Health Organization fact sheet 204 (revised October 2000). Available at http:/who.int/inf-fs/en/fact204.html. (Accessed on March 2009).
2. Borkowsky W, Krugman S. Viral Hepatitis: A, B, C, D, E and newer hepatitis agents. In: Katz SL, Gershon AA, Hotez PJ (editors). Krugman's Infectious Diseases of Children. 10 th ed. Inc St.Louis: Mosby-year Book; 1998.pp.157-87.
3. McMahon BJ. The natural history of chronic hepatitis B virus infection. Hepatology 2009: 49; 45-55.
4. Üstün C, Basugay E, Deveci U. seroprevalence of hepatitis B and hepatitis C in children admitted to pediatric surgery policlinic. Nobel Medicus 2009; 5: 4-9.
5. Chotiyaputta W, Lok AS. Role of antiviral therapy in the prevention of perinatal transmission of hepatitis b virus infection. J Viral Hepat 2009; 16: 91-3.
6. Tran TT. Hepatitis B and pregnancy. Current Hepatitis Reports 2009: 8; 91-5.
7. Recommendations of the Immunization Practices Advisory Committe. Prevention of perinatal transmission of hepatitis B virus: Prenatal screening of all pregnant women for hepatitis B surface antigen. MMWR 1988; 37: 341-6.
8. Gambarin-Gelvan M. Hepatitis B in pregnancy. Clin. Liver Dis 2007; 11: 945-63.
9. Xu DZ, Yan YP, Choi BC, Xu JQ, Men K, Zhang JX, Liu ZH, Wang FS. Risk factors and mechanism of transplacental transmission of hepatitis B virus: a case-

control study. J Med Virol 2002; 67: 20-6.
10. Xu WM, Cui YT, Wang L, Yang H, Liang ZQ, Li XM, Zhang SL, Qiao FY, Campbell F, Chang CN, Gardner S, Atkins M. Lamivudine in late pregnancy to prevent perinatal transmission of hepatitis B virus infection: a multicentre, randomized, double-blind, placebo-controlled study. J Viral Hepat 2009; 16: 94-103.