JBACHS
Journal of Basic and Clinical Health Sciences

J Basic Clin Health Sci 2020; 1:82-84
https://doi.org/10.30621/jbachs.2020.807

Case report

A Case Report of a Pregnant Woman with Chronic Hepatit B: Use of Tenofovir in Pregnancy

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Received: 16.08.2019; **Accepted:** 06.12.2019; **Available Online Date:** 27.01.2020

Cite this article as: Güven H, Arıcı MA, Aktürk G, Güner Ö. A Case Report of a Pregnant Woman with Chronic Hepatit B: Use of Tenofovir in Pregnancy J Basic Clin Health Sci 2020; 1:82-84.

ABSTRACT

Objective: To overview the effects of tenofovir use in chronic Hepatit B in pregnancy and asses the effects on the vertical transmission of HBV from mother to baby.

Case Report: We presented a pregnant woman who has Chronic Hepatit B with high viral load in the 26th week of her pregnancy. She took tenofovir in the 37th week of her pregnancy once a day along six days. Then she gave birth to a healthy baby at the 37th week of the pregnancy. Hepatit B Immunoglobulin (HBIG) and Hepatit B vaccine had applied to the baby. In the follow-up, the mother's viral load was decreased. HBV DNA was not detected in the baby.

Conclusion: Only six-day tenofovir use in this pregnant woman with chronic Hepatit B may contribute to preventing vertical transmission of HBV from mother to baby. However, the importance of HBIG and vaccination should not be forgotten.

Keywords: Tenofovir, chronic Hepatit B, pregnancy, vertical transmission

INTRODUCTION

Chronic Hepatitis B infection is a serious public health problem, which can cause cirrhosis and hepatocellular carcinoma (1-2). Hepatit B virus (HBV) may transmit to the fetus vertically in delivery. Antiviral treatment during pregnancy and immunoprophylaxis (Hepatitis B Immunoglobulin and HBV vaccine) in the first 12 hours after birth, play an important role in preventing the vertical transmission from mother to the baby (3-4). The transmission rate is higher if the mother's serum HBeAg is positive and HBV-DNA level is high (>200.000 IU/mL or 10^6 copy/mL) (5).

Tenofovir disoproxil fumarate (TDF) and entecavir are recommended as the first-line therapy for chronic HBV (6). TDF is preferred for patients who are resistant to treatment. In recent years it is reported that it should be started TDF treatment at the 28-32th week of pregnancy and terminate within 6 months after delivery for preventing vertical transmission with respect to the clinical status of the patient (7). We presented a 36 years old pregnant woman who had chronic HBV and used TDF during 6 days at the 37th week of pregnancy for preventing vertical transmission.

Case Presentation

The patient was diagnosed with chronic HBV before two years ago. HBV-DNA level was 155.587 IU/mL at the 26th week of gestation. Pregnant was consulted to the Dokuz Eylul University, Medical Pharmacology Teratogenity Information Service for the use of Tenofovir during pregnancy.

The patient had gestational diabetes mellitus and blood glucose levels were within the target range with insulin therapy which was insulin aspart and insülin detemir. Biochemical parameters other than HBV-DNA level were measured normally in the 26th week of her pregnancy. Although a two-week antiviral treatment proposal, she has not received any antiviral therapy until her admission to our Teratogenity Unit. HBV-DNA level was determined as 1.990.000 IU/mL at the 37th week of gestation, when antiviral treatment was started. It was learned that she used 245 mg of TDF prescribed daily for a total of six days until she was taken to the cesarean section because of impairment alteration in blood glucose regulation. Pregnant woman, gave birth to a healthy baby who had a normal APGAR score without any malformation. Hepatitis B vaccine and immunoglobulin were administered to

the infant within 24 hours after delivery for preventing the vertical transmission. Baby's Hepatitis B markers and liver function tests were found within normal limits at 14th and 25th weeks after delivery. The mother's HBV-DNA level was determined as 5670 IU/mL and liver function tests were within normal limits at 14th weeks after birth.

DISCUSSION

It is estimated that approximately 248 million people who are carriers of chronic hepatitis worldwide (8). HBV infection during pregnancy is considered to be an important health problem due to the risks. Monitoring of liver function tests and viral loads are recommended for pregnant women with chronic HBV.

If the HBV vertically transmitted to the baby, HBsAg is positive at 6–12 months of life and HBV-DNA load is high in the baby. It is proposed that to initiate antiviral treatment to prevent vertical transmission of the virus also in pregnant women with high viral load (2,3,9). The aim of antiviral treatment of chronic HBV infection during pregnancy is to improve the liver function of the mother and to reduce the risk of vertical transmission.

Effective agents in the treatment of chronic HBV infection are Pegylated Interferon, lamivudine, entecavir, adefovir, telbivudine and tenofovir. However, telbivudine, lamivudine and tenofovir are usually preferred in pregnancy because of the more number of studies related to their safe use in pregnancy (7,10,11).

Even though the TDF is categorized as B in FDA pregnancy risk categories and has not been shown cause an increased risk of congenital anomalies, the teratogenic risk may not be excluded. tenofovir is an acyclic nucleoside analog and acts as a DNA chain terminator by with chronic HBV carrier; pregnants should be treated with tenofovir at 28-30th weeks, However, the time of discontinuation of the treatment is not clear. In most of the studies, it was reported that prophylaxis was discontinued within the first 4 weeks postpartum but in practice, the treatment could be continued until the postpartum 6th month (12). In a study, it is reported that pregnant women usually well tolerate the TDF but had more gastrointestinal adverse effects. In the same study, it was reported that TDF reduced vertical transmission as expected (13). In contrast with these reports in a study conducted by Jourdain et al., it has been reported that it did not significantly reduce the vertical transmission of HBV (14). HBIG and Hepatitis B vaccine are also important in the prevention of the vertical transmission of HBV. It has been reported that vaccinate of HBV alone to infants born to HBeAg positive mothers reduces the risk of developing persistent carriage by 75% in infants. It has also been reported that HBIG administration with vaccine increases this rate to 95% (15).

In this case report, the duration of TDF treatment is only six-day at 37th weeks of gestation. Although the recommended use of tenofovir during the pregnancy was longer, no health problems had been observed in the postpartum health check of the mother and her baby.

Certainly, the role of HBIG and HBV vaccine administration is also important but we think that TDF may contributes to preventing HBV transmission.

CONCLUSION

In pregnant women with chronic Hepatitis B, liver function tests and viral load should be monitored during pregnancy. We suggested that tenofovir which was used for 6 days although it is not certain that it is effective in the studies about its effectiveness, has decreased the viral load in pregnant women and prevented the vertical transmission to the baby with the use of HBV vaccine and HBIG.

Therefore, tenofovir in pregnancy may contributes to preventing vertical transmission of HBV. However, the importance of HBIG and vaccination should not be forgotten in the prevention of vertical transmission.

Acknowledgement
We thanks to Family Medicine physician Tolga Gunvar for valuable contribution to follow-ups.

Informed Consent: Informed consent was obtained from the patient

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - HG, MAA, GA, ÖG; Design - HG, MAA, GA, ÖG; Supervision - HG, MAA; Data Collection and/or Processing - HG, MAA, GA, ÖG; Analysis and/or Interpretation - HG, MAA, GA, ÖG; Literature Search - HG, MAA, GA, ÖG; Writing Manuscript - HG, MAA, GA, ÖG; Critical Review - HG, MAA, GA, ÖG

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

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