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Case report

Antiviral therapy of chronic HBV infection in pregnancy

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Abstract

We describe a 27-year-old hepatitis B virus (HBV)-infected pregnant woman, with a history of miscarriage a year ago. The patient has been HBsAg and HBeAg positive for 20 years but has never been treated for HBV infection, because of stable elevated alanine aminotransferase (ALT) activity and high viral load. Treatment with tenofovir disoproxil was introduced in the 10th week of pregnancy and HBV DNA became undetectable. The clinical course of pregnancy was normal and the patient gave birth by caesarean section to a healthy child. At birth the newborn was HBsAg negative, after 3 months of follow-up is healthy, and evaluation of HBV status will be scheduled shortly. The decision to treat HBV infection during pregnancy should be individualized.

Key words: pregnancy, HBV infection, treatment.

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Introduction

Females chronically infected with hepatitis B virus (HBV) transmit the virus to the newborn usually during the perinatal period. The probability of newborn infection in the case of the viral load exceeding 10^7 IU/ml and detectable HBeAg is estimated at 70-90% [1]. However, even in such cases, active and passive neonatal prevention is effective against HBV infection in more than 95% of cases [2]. Prophylactic use of antiviral therapy in pregnant women for possible HBV transmission to the newborn is currently not recommended by the Food and Drug Administration (FDA). However, in special situations such treatment can be considered by the physician after discussing with the pregnant woman possible risks and benefits [3].

Case report

We describe a 27-year-old pregnant woman with documented 20-year history of HBV infection. The route of transmission is unknown, but HBV infection was confirmed in the father and excluded in the mother. The patient had never been treated with antivirals for HBV and no alanine aminotransferase (ALT) elevation was documented up to now. She did not attend the hepatitis out-patient department regularly. A year ago, the patient experienced spontaneous abortion at 12 weeks of gestation, and gynecological examinations did not reveal the cause of miscarriage including exclusion of toxoplasmosis, toxocariasis or *Cytomegalovirus* (CMV) infection.

The patient returned to the hepatitis out-patient department at the beginning of pregnancy with no physical abnormalities, but ALT was elevated to 74 U/l, normal serum α-fetoprotein (1.41 ng/ml), positive HBsAg and HBeAg as well as a viral load of 1.7×10^8 IU/ml. Ultrasound did not reveal any liver abnormalities. Obstetrician examination confirmed normal status of pregnancy.

Taking into consideration the history of pregnancy failure, elevated ALT activity, high viral load and presence of HBeAg the patient was informed about possible risks associated with HBV infection during pregnancy, possibilities of antiviral therapy, and possible benefits and side effects for both the patient and the fetus. She signed informed consent to start antiviral therapy. Tenofovir disoproxil (TDF) therapy at a dose of 245 mg/day was started in the 10th week of pregnancy. After 4 weeks of ALT normalization was achieved

and the viral load decreased to 2.9×10^4 IU/ml. During the whole period of pregnancy ALT was normal, and there were no abnormal values indicative for hepatic damage or cholestasis. Delivery was carried out by cesarean section at 40 weeks of gestation. A male newborn weighing 3650 g obtained 10 points in the Apgar score and he was HBsAg negative just after the birth. The decision on the method of delivery was taken by the obstetrician and was independent of HBV infection and viral load. The newborn received specific anti-HBs serum and the first dose of HBV vaccine. The patient is still on TDF and breast-feeding has not been started. After 48 weeks of treatment (18 weeks after delivery) the mother is in a good clinical condition and HBV DNA is undetectable. After 3 months of follow-up the child is healthy and evaluation of HBV status will be scheduled shortly.

Discussion

Tse *et al*. showed that high levels of proinflammatory cytokines interleukin (IL)-2, IL-6, IL-10, macrophage migration inhibitory factor and tumor necrosis factor α (TNF-α) in a pregnant woman infected with HBV may affect the pregnancy and increase the risk of miscarriage or affect the newborn, with possible reduction of the Apgar score [4]. Since the patient experienced a miscarriage a year before the current pregnancy we were unsure about its possible association with HBV infection. Therefore we decided to prevent possible fetal/newborn infection with a nucleotide or nucleoside analogue and to reduce possible consequences of the infection in the already infected mother [5, 6]. We selected for this purpose TDF because of extensive experience with this nucleotide analogue in HIV-infected pregnant women and relatively high, B category positioning of this medicine in the FDA pregnancy classification.

The happy ending of the pregnancy in this patient confirms the need for an individual decision regarding antiviral therapy in HBV-infected pregnant women.

Disclosure

Authors report no conflict of interest.

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