Hepatitis B Virus Complications of Pregnancy After Kidney Transplantation

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In this issue of the *Iranian journal of Kidney Diseases*, the case report of "Successful Pregnancy in a Kidney Transplant Recipient With Chronic Hepatitis B Virus Infection" by Kashif and colleagues[1] confronts us to different challenging topics in nephrology. First, hepatitis B virus (HBV) infection has been discovered after kidney transplantation with a negative report of hepatitis B surface antigen (HBsAg) before transplantation. There is no report of anti-hepatitis B core antigen antibody (HBcAb) or hepatitis B viral load (HBV DNA) at transplant time in this case. However, primary infection after transplant is probable, but occult hepatitis B is the best explanation for presented case. Occult HBV infection might be transmitted via hemodialysis, blood transfusion, and organ transplant. It is most frequently seen in HBcAb-positive patients.[2] However, no HBcAb or anti-HBsAg could be detected in some individuals. In a study of 289 hemodialysis patients in Iran, there were 18 cases with isolated HBcAb. Half of them had low titers of HBV DNA.[3] In high endemic areas, the prevalence of occult HBV infection is higher. Before solid organ transplantation, HBcAb test is obligatory for donors and recipients. If there is a positive HBcAb or a high risk of infection, HBV DNA should also be checked.[4]

Second, the patient had active HBV in pregnancy with a functioning kidney transplant. In a kidney transplant with HBV infection, interferon α is not recommended due to the increasing rate of rejection and low efficacy. Nucleoside analogs are treatment of choice. In this group, lamivudine has a high risk of resistance or low barrier. In transplant recipients, entecavir is often considered as a preferable first-line option because of the lower risk of nephrotoxicity compared with tenofovir.[5] None of these drugs has been approved by the Food and Drug Administration for pregnancy. Tenofovir and telbivudine are in category B and others in category C. There are no large studies for safety of these drugs, but lamivudine has been used in human immunodeficiency virus-infected pregnancies for a long time. In this case report, due to the high resistance to lamivudine, monitoring of HBV DNA viral load was essential.

Third, the patient had chronic kidney disease stage 4 with pregnancy. In a study of 50 000 kidney transplant women in reproductive age in the United States, complications of preeclampsia

(27.0%), gestational diabetes (8.0%), cesarean section (56.9%), and preterm delivery (45.6%) were higher than the general population (3.8%, 3.9%, 31.9%, and 12.5% in the general population, respectively).[6] The diagnosis of preeclampsia in chronic kidney disease patient was also difficult since the patient already had hypertension and proteinuria. This patient was on methyl dopa. We do not know the amount of proteinuria and blood pressure at delivery time in this case. The child was born at 33 weeks of gestation, which shows a preterm delivery.

Studies have shown the kidney outcome is related hypertension and serum creatinine level before preeclampsia. Ten to 15% of women experience a temporary or permanent decline in kidney function, especially when serum creatinine is high before pregnancy.[7] The presented case had a low glomerular filtration rate (23 mL/min), which decreased at the end of pregnancy.

Finally, this case ended up with preterm labor and decreased kidney function. We do not have any information on the long-term follow-up for liver and kidney function in this patient. The most important message in this report is that patient selection, family counseling, and evaluation of patient compliance are essential steps before kidney transplantation.

CONFLICT OF INTEREST

None declared.

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