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Educational Workshop
Hepatitis B virus infection and pregnant women (interactive case study)

It is estimated that more than 2 billion people have infected with hepatitis B virus (HBV) worldwide and about 350-400 million of them have chronic hepatitis of whom 600.000 die annually. Cirrhosis and hepatocellular carcinoma are frequent complications of HBV. The most common mechanism of HBV transmission is mother to infant, known as perinatal transmission. Approximately 90% of infected infants at birth develop chronic infection. Therefore, prevention of perinatal transmission is one of the most important goals in reducing HBV incidence worldwide. Universal hepatitis B vaccination program has been shown to reduce HBV infection rate globally. All pregnant women must be screened for HBsAg during their first prenatal visit. Pregnant women with unknown HBsAg status must be tested for HBV at the time of the admission to the hospital or delivery setting. In the case of HBsAg positivity, further investigation is required to determine the phase of the disease. Hepatitis B vaccination for HBV seronegative pregnant women is recommended. Pregnant women and healthcare personnel should be informed about the consequences of HBV infection and written protocols must be established in the medical institutions for screening and management. HBV infection in pregnancy may occur as acute hepatitis, chronic hepatitis and hepatitis B carriage. Acute HBV infection during pregnancy is generally benign and less than 1% of cases may progress to fulminant hepatitis. Acute HBV infection must be differentiated from other liver diseases such as acute cholestasis, acute fatty liver and HELLP syndrome seen in pregnancy. Baseline evaluation in early pregnancy (ALT, HBV DNA, abdominal ultrasonography etc.) is recommended for women who are HBV carriers. In order to reduce the risk of hepatic decompensation, antiviral therapy should be continued during pregnancy when there is apparent hepatic fibrosis. Discontinuation of therapy can cause hepatic decompensation as a result of flare which could also be risky for fetus. Also, antiviral treatment is recommended for pregnant women the women have risk of hepatic for decompensation. Chronic carriers and immune-tolerant cases do not require treatment. Drugs that can be used during pregnancy are lamivudine, telbivudine and tenofovir. According to the Food and Drug Administration (FDA), pregnancy category classification in terms of teratogenicity, lamivudine is assigned to category C whereas telbivudine and tenofovir are in category B. Moreover, due to their dual effects in HIV and HBV, many patients with HIV infection were treated with lamivudine and tenofovir during pregnancy and the registry data showed that the teratogenicity rates are similar to the general population. Risk-benefit assessment must be done in pregnant women if antiviral therapy is considered and decision must be given together with the patient. Tenofovir is preferable during pregnancy since it is effective, resistance does not occur and side effects are lower than other drugs. Cases receiving treatment with entecavir and adefovir should be switched to tenofovir. The most effective method of preventing perinatal transmission is hepatitis B immunoglobulin (HBIG) administration and HBV vaccination of the newborn right after the birth. This approach reduces the risk of HBV infection (90-95%) whereas the risk of infection is higher if HBIG is not given within 12 hours of birth. Even though HBIG and vaccination were given HBV infection may be developed in 5-10% cases. The most important risk factors for prophylaxis failure are a maternal HBV DNA level higher than 200.000 IU/ml and HBeAg positivity. The neutralizing effect of HBIG can be particularly insufficient when the HBV DNA level is high, in immune-tolerant and HBeAg positive cases. Therefore, antiviral therapy can decrease the transmission from mother to infant by reducing the viral load. Risk and benefits of prophylaxis must be shared with pregnant cases planned to receive prophylaxis and a decision must be given together. In the case of HBsAg positive pregnant women not receiving an