

Question 2 – August 12

A 27 year old white female is 20 weeks pregnant. During a prenatal visit, her liver enzymes were normal but her hepatitis B surface antigen and hepatitis e antigen was positive. HBV DNA levels are detectable at 10,000 IU/ml.

What strategy is recommended to best reduce the risk of vertical transmission?

- A. Vaccinate the mother now.
- B. Vaccinate the infant at the time of birth.
- C. Give Hepatitis B immune globulin and vaccinate the infant at the time of birth.
- D. Treat the mother with lamivudine now.
- E. Treat the mother with entecavir now.

Answer: C

Infants born to hepatitis B virus (HBV) infected mothers are at high risk of acquiring HBV infection themselves, particularly if the mother has a high level of HBV DNA and hepatitis Be antigen (HBeAg) in her plasma. Without intervention the risk of transmission from an HBeAg seropositive mother is 70%-90% compared with the risk of about 10% from an HBeAg negative mother^(1,2). A combination of various doses of hepatitis B vaccine and human anti-HBs immunoglobulin (HBIG) has been shown in many studies in Europe and elsewhere^(3,4), to be highly effective in reducing vertical transmission from chronically infected women. The risk of HBV infection can be reduced to 5% when the newborns are given a three-dose regimen of HBV vaccine and single dose of HBIG. Therefore, antiviral treatment of the mother to prevent newborn HBV infection remains highly controversial and cannot be recommended at this time.

None of the current antiviral agents is licensed for use in pregnancy, and prominent warnings exist for the potential risk of harmful effects on the fetus.

References:

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2. Beasley RP, Trepo C, Stevens CE, Szmuness W. The e antigen and vertical transmission of hepatitis B surface antigen. *Am J Epidemiol.* 1977 Feb;105(2):94-8.
3. Wheeley SM, Jackson PT, Boxall EH, Tarlow MJ, Gatrad AR, Anderson J, Bissenden J. Prevention of perinatal transmission of hepatitis B virus (HBV): a comparison of two prophylactic schedules. *J Med Virol* 1991; 35(3):212-5.
4. Andre FE, Zuckerman AJ. Review: protective efficacy of hepatitis B vaccines in neonates. *Journal of medical virology* 1994; 44(2):144-151