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Prevalence and risk factors of HBV infection among pregnant women in urban and rural Egyptian communities

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Background: Approximately 240 million people worldwide are chronically infected with hepatitis B virus (HBV), with Egypt being an area of intermediate endemicity. Children born to hepatitis B surface antigen (HBsAg) and envelope antigen (HBeAg) positive mothers have a 70-90% chance of HBV perinatal acquisition; 85-90% of these infections become chronic. HBV vaccination in conjunction with gamma globulin at birth reduces perinatal transmission rates by 90%. Chronic HBV carriers have an increased lifetime risk of dying from hepatocellular carcinoma and liver cirrhosis and are the main reservoir for HBV transmission. Routine HBV antenatal screening is not practiced in Egypt.

Aim: To assess the prevalence and risk factors for HBsAg positivity among pregnant women in one urban and three rural Egyptian communities.

Design/Methods: Pregnant women seeking antenatal care in the rural health units of three villages in the Nile Delta and in the Outpatient Clinic of the Obstetrics Department, Kasr Al-Ainy School of Medicine, Cairo University, were enrolled in this perinatal cohort studying hepatitis transmission. After obtaining informed consent, serum samples were tested for HBsAg and liver function tests (ALT, AST, total and direct bilirubin). Demographic characteristics and risk factors for infection were assessed using questionnaires. All infants born to HBsAg positive women in the study were given HBV prophylaxis after delivery.

Results: About 1.2% of the screened rural and urban pregnant women (42/3408 and 23/2000 respectively) were HBsAg positive. The median age of recruited women was 24 (range: 16-48) and 27 (range 19-37) years respectively. In both urban and rural communities it was found that age, parity, working in a health care facility, and history of jaundice, liver disease or viral hepatitis were not significantly associated with HBsAg. In the rural community, women with primary/preparatory school had 2.3 times greater risk to be HBsAg positive than those with a higher level of education ($p=0.012$). When asked about their health perceptions, HBsAg positive women were 2.5 times more likely to perceive their health as very bad ($p=0.003$). Family history of hepatitis, hospital admission and parenteral risk factors (surgery, blood transfusion, needle stick injury, sutures, injections, IV lines, endoscopy, renal dialysis, dental procedures, injection treatment for schistosomiasis, abortion, stillbirth, cesarean section or episiotomy) were not significantly associated with HBsAg. While in the urban community, risk factors significantly associated with HBsAg seropositivity were history of seeking medical advice in a clinic ($OR=7.02$), history of hospitalization (Odds ratio [OR]=6.82), history of injections ($OR=5.65$), history of surgery ($OR=4$) and family history of hepatitis ($OR=3.89$) ($P<0.05$). There were no significant differences in levels of ALT, AST, total and direct bilirubin between those with and without HBsAg. Having hepatitis C antibodies or RNA was not associated with HBsAg seropositivity.

Conclusions: Antenatal screening for HBV should be done to detect HBV-infected pregnant women to allow the application of the appropriate preventive measures for the newborn thus reducing potential perinatal transmission and liver-related complications.

Biography

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