

**SEROPREVALENCE AND RISK FACTORS OF
HEPATITIS B AMONG PREGNANT WOMEN IN
KIGALI, RWANDA**

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ABSTRACT

Background

Hepatitis B virus belongs to the family *Hepadnaviridae*. It is the commonest cause of chronic viral hepatitis. It is responsible for up to 80% of primary liver cancers. Despite the existence of a safe and effective vaccine, HBV infections still remain a global public health problem. The incorporation of the HBV vaccine into routine childhood immunization schedules has greatly reduced morbidity and mortality due to HBV. However in areas of high endemicity new infections still remain a concern. Pregnant women who are carriers of the virus pose a significant risk to their unborn babies. Maternal HBV infection has also been associated with adverse pregnancy outcomes including prematurity, gestational diabetes, perinatal deaths and miscarriages as well as risk of mother to child transmission. Certain epidemiological risk factors have been associated with HBV infection among pregnant women. These include women in polygamous relationships, increasing parity, female genital mutilation, tribal marks and scarification, living with a HBV infected partner, previous surgeries or dental procedures, previous blood transfusions, body piercing and tattoos, working in a hospital and history of STIs. Despite its public health importance, majority of countries in developing world, including Rwanda have not yet adopted universal screening for pregnant women. Early diagnosis in this group can provide an avenue for prevention of mother to child transmission which will in turn lead to a reduction in the number of chronic carriers who act as a source of new infections. Understanding the risk factors associated with HBV infection is paramount in adopting control measures.

Objective

To determine the prevalence and risk factors of HBV infection among pregnant women in Kigali

Study design

A multi-centre, cross sectional study

Study sites

Muhima, Kibagabaga and Masaka Hospitals ANC clinics

Study Population

Pregnant women attending ANC clinics at the three hospitals who consented to join the study

Methodology

The study set out to determine the prevalence and risk factors for hepatitis B infection among pregnant women in Kigali. It was a multicenter, cross-sectional study. Data collection was using a questionnaire-guided interview followed by HBsAg determination using SD Bioline test device. Data entry and statistical analysis was done using SPSS version 16. A p-value of less than 0.05 was considered significant.

The information obtained shall be shared to health facilities involved and the Ministry of Health, Rwanda. Apart from giving a snapshot of Hepatitis B disease burden among pregnant women in Kigali, it also gives an indication of the disease burden in the general population. Risk factor assessment useful in understanding the transmission dynamics of Hepatitis B in this set up and to inform policy on transmission prevention.

Results

Three hundred and eighty five (385) pregnant women were recruited from from the three study sites between May and August 2013. The mean age of the participants was 28 years. The ages ranged between 15 years and 46 years with majority being between 25 and 29 years. Most of the women had attained primary level education and most were earning less than one dollar a day.

The prevalence of Hepatitis B among pregnant women in Kigali is 3.1% (95% CI 1.7% to 5.3%).

The risk factors assessed for association with HBsAg positivity include history of contact with a HBV positive person, history of blood transfusion and previous surgeries, tribal marks, body piercings and tattoos, STIs and multiple sexual partners. The most frequently reported risk factor was body piercing by 43.7% while history of working in a hospital was the least frequently reported risk factor by 2.1% of the study participants. Statistical assessment of the risk factors in

correlation with HBsAg positivity yielded low statistical power of association (p values above 0.05) using the chi square test of association or Fisher's test where frequencies were low.

Conclusion

According to WHO classification, Kigali has intermediate endemicity of Hepatitis B among pregnant women. However, risk factors that have been linked with HBV infection among pregnant women were not found to have statistically powerful correlation with HBsAg positivity. Intermediate endemicity of HBV infection among this group poses a risk of vertical transmission to their unborn children as well as horizontal transmission to their contacts including delivery staff.

Recommendations

Universal and free ante-natal screening to be adopted, and possibility of using a point of care testing could be considered. Vaccination coverage to be expanded to include health care delivery staff and family contacts of infected individuals.

Possibility of a birth dose of monovalent Hepatitis B vaccine to be considered in addition to the existing three dose pentavalent vaccine