Assessment of the impact of hepatitis B vaccination in Bangladesh, a seroprevalence study

Hepatitis B virus infection is a leading cause of morbidity and mortality due to hepatocellular carcinoma and liver cirrhosis worldwide. Preventing infections acquired at birth and in early childhood is critical, as the risk of becoming chronically infected is high if infected before 6 months of age. During 2003-2005, Bangladesh introduced hepatitis B vaccine into the routine childhood vaccination schedule at 6, 10, and 14 weeks of age. This study evaluated the impact of hepatitis B vaccine introduction in Bangladesh by comparing hepatitis B surface antigen (HBsAg) prevalence among children born before and children born after hepatitis B vaccine introduction.

We selected a nationally representative sample of 2,100 children from both the pre-vaccine era and vaccine era from 105 randomly selected geographic units of Bangladesh. We collected a blood sample from each child along with vaccination and demographic information. All samples were tested for antibody to hepatitis B core antigen (anti-HBc); anti-HBc positive samples were further tested for HBsAg. One hundred-eighth (5.1%) pre-vaccine and 16 (0.8%) vaccine era children were anti-HBc positive. In the pre-vaccine era, 26 (1.2%) of children and in the vaccine era 1 (<0.1%) child were HBsAg positive. Study results suggest that the hepatitis B vaccination program in Bangladesh is highly effective. These findings support continued investment in Hepatitis B in other countries who introduced Hepatitis B vaccine into childhood immunization programs but have not yet evaluated impact.

About Repon Paul

Repon Paul is a PhD candidate at the School of Public Health and Community Medicine (SPHCM), UNSW. His PhD research is focusing on estimating mortality associated with hepatitis E virus in Bangladesh. Before moving to UNSW, he worked with icddr,b, Bangladesh as an Assistant Scientist. Repon’s previous studies focused on evaluating the impact of health interventions, modelling of risk factors associated with infectious diseases, and estimating the burden of infectious diseases in Bangladesh, including Japanese encephalitis, cholera, rotavirus, and influenza.