Abstract

Objective

The study was done to assess the protective efficacy of 2,4,6 month schedule of hepatitis B vaccination in the Expanded Programme on Immunization (EPI) in a selected population in Sri Lanka. The objectives were to determine the percentage of seroconversion following primary vaccination, to identify factors associated with low titres of antibodies following seroconversion and to study the effect of a booster dose among infants with inadequate level of seroconversion.

Methods

The study was conducted in the Bope Poddala MOH area in Galle District in 2008. A cross sectional study was first carried out among 154 infants (having completed 9 months of age) attending the EPI programme to detect HBs antibody titres using an enzyme immunoassay test.

The second stage of the study was an interventional study, where 42 infants detected with low titres of antibodies (9 non-responders, 33 hypo-responders) in the first stage, were given a booster dose of hepatitis B vaccine. HBs antibody titres were retested after 2-4 weeks.

Results

Following 3 doses of hepatitis B vaccination, 5.8% (9/154) did not have protective antibody levels (non-responders/ anti-HBs titre < 10 mIU/mL). Nearly one third (30.5% -47/154) were hypo-responders (anti-HBs titre - 10 to 100 mIU/mL). The overall protection after 3 doses of vaccine was 94.2% (145/154) and had a geometric mean titre of 233.37 mIU/mL. Sex, birth weight, body mass index, weight for height

were not significantly associated with anti-HBs levels. None of them had potential risk factors for acquiring HBV infection.

Only 26 (3 non-responders and 23 hypo-responders) out of 42 re-vaccinated infants returned for repeat testing of antibody levels. All non-responders and hypo-responders developed protective anti-HBs titres after the booster dose. Geometric mean titre was 699.55 and 909.97 mIU/mL respectively in these two groups.

Conclusions

The majority (94.2%) of infants seroconverted following three doses of Hepatitis B immunization in EPI in Sri Lanka. Therefore checking the hepatitis B antibody level at the end of the primary course of vaccination, in a routine immunization program of infants is not indicated.

Protective anti-HBs titres were demonstrated by giving a booster dose to infants with inadequate level of seroconversion, depicting a good memory following the primary vaccination and thus a booster dose of vaccine may not be needed in the population of infants vaccinated for hepatitis B in Sri Lanka.