Abstract

Background:The national HBV vaccination program to all newborn was initiated in Taiwan in 1986 that has resulted in a significant reduction of chronic HBV infection among the recent birthcohorts. However vaccinated children of indigenous origin not only mounted to a lower protective antibody response, but also had a higher HBV chronic carrier rate than that of Han children, a phenomenon now attributed to host backgroud. We now consider this population as having higher risk for HBV vaccine failure and HBV chronic infeciton, that warrants a close monitoring.

Purpose：To follow up the so called highly risk group children for HBC chronic infection; to estimate the newly incidence rate and carrier rate; and to identify the effect between serum vaccine and recombinant vaccine.

Method：In the year 2002, we recruited all children attending elementary schools in two indigenous villages in where in a previous epidemiological studies were conducted in 1993. Under parental consents, the serum samples are collected from each child for HBV serological markers (HBsAg, anti-HBc, and anti-HBs titer). All information, including the ethnic background parents, maternal HBsAg status, and vaccination information of each child, was compiled as computerized format and analyzed by use of SAS statistical software.

Result：Among 1707 school children participating the study, HBV vaccine coverage rate is generally high. The natural infection rate reached 10% in this population. Having been born to a HBV carrier mother is the most important factor associated with vaccine failure, the HBsAg carrier rates among children born to carrier and non-carrier mothers are 17.2% and 2.8%, respectively. Among the unvaccinated children who were born to carriers and non-carrier mothers, the HBsAg carrier rates were 15.4% and 8.0%, respectively. From 1993 to the year 2002, the horizontal infection rate among these children is about 1.0% per year, and three children became chronic carriers. The carrier rate and natural infection rate among children who received serum vaccine and children who received recombinant vaccine are different. Recombinant vaccines seem to show a better protection against chronic HBV infection Discussions These results showed a consistency with the study in sconducted last year. There is a high rate of HBV infection and HBV vaccine failure among aborigine children, but a better protection in the children who received recombinant vaccine (second generation vaccine) than those who received the first generation HBV vaccine. However, we are unable to comment on the efficacy of the different doses of vaccines, 10 versus 20 microgram, by the two international vaccine manufacturers at this point due to insufficient data. Of importance to the vaccine policy is that high proportion of these children still received their first dose of vaccination after 1 month of age; this is a point in focus for further improved vaccination program.

Keywords：HBV vaccine；aborigines；highly risk groups