Thesis Title Immunogenicity and Reactogenicity of Different Doses of Hepatitis B Vaccine in Medical and Nursing Students

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Date of Graduation
15 January B.E. 2536 (1993)

Abstract

Vaccination against hepatitis B virus is limited by the high cost of vaccine. The immunogenicity and reactogenicity of different doses of hepatitis B vaccine were studied to compare the antibody response and adverse reactions after full and half doses of hepatitis B vaccine. Seventy-seven subjects were medical students in Pramongkutklao Medical College and nursing students in Nursing Army College who had seronegative for hepatitis B virus markers and never experienced with hepatitis B vaccine. The first group of fourty students received Engerix-B 20 μg and the second group of thirty-seven students received Engerix-B 10 μg. The subjects were inoculated intramuscularly according to 0, 1, 6 months. Blood samples were collected and anti-HBs determined by radioimmunoassay after one month of each injection. The reactogenicity was observed within fourty-eight hours after each injection. The result showed that, anti-HBs level after first dose was 2.24 mIU/ml in group 1 2.09 mIU/ml in group 2 (p=0.795). After third dose, anti-HBs level was 1,918.67 mIU/ml in group 1 and 1,088.43 mIU/ml in group 2 (p=0.059) but after second dose

anti-HBs level in group 1 (154.17 mIU/ml) was significantly higher than group 2 (59.00 mIU/ml), p=0.044. Seroconversion rate after first dose was 15 % in group 1, 8.1% in group 2 (p=0.1732) whereas after the second dose, seroconversion rate in group 1 (92.5%) was significantly higher than group 2 (72.9%), p=0.0058. However, when three complete doses of hepatitis B vaccine were given, the seroconversion rate was 100 % in both groups. Reactogenicity noticed in these groups was not significantly different. Some of studied subjects had adverse reaction such as local pain, itching, malaise and headache after first dose (group 1; 32.5% , group 2; 27.03%), second dose (group 1; 32.5%, group 2; 27.03%) and third dose (group 1; 27.5%, group 2; 18.92%). No severe reaction was found. The study indicates that the half dose of hepatitis B vaccine may be sufficient in the prevention of hepatitis B in adults.