Abstract

Hepatitis B virus (HBV) infection is endemic in Taiwan, with a high frequency in adult. It results in cirrhosis, hepatocellular carcinoma and death. HBV vaccines have been largely shown to be effective in preventing infection of healthy children with an efficacy of > 90%. Taiwan has a national policy about routine infant immunization with HBV vaccine since 1985. The efficacy is very fair. But it remains unclear that the Hepatitis B (HB) vaccine would provide the same effective protection in the children who received chemotherapy and bone marrow transplantation. We do not know whether these children would receive the booster of the HB vaccine or not.

In this study, 97 children with acute lymphoblastic leukemia (ALL) and 2268 healthy children were enrolled. We divided the children into 4 groups : standard risk, high risk, very high risk and relapse by ALL risk factors. The result showed that 3 cases had persistent seropositive anti-HBc Ab. The other 3 cases had anti-HBc seroconcersion in the follow-up period. 19 (19.6%) of the ALL children were seronegative for anti-HBs antibody. The geometric mean titers of anti-HBs antibody at diagnosis in the ALL children were significantly lower than that of age-compatible healthy children. After chemotherapy, the anti-HBs titer of the ALL children appeared decreased trend.

In the booster study, there were 55 children with ALL and 18 children after hematopoietic stem cell transplantation enrolled. The anti-HBs Ab responded rate were 71.4%(20/27) and 39.3%(11/28) in complete treatment and under chemotherapy children with ALL. There was significantly difference between two groups. In the post transplant children, only 4 children had response to booster vaccine.

Keywords：acute lymphoblastic leukemia；hematopoietic stem cell transplantation；anti-hepatitis B surface antigen；hepatitis B vaccine