

Assessment of antibody titers and immunity to Hepatitis B in children after chemotherapy

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Objective: There is a decrease in vaccine-specific antibody to certain vaccine-preventable diseases in children after chemotherapy, but the frequency of non-immune patients is not clear. In this case-control study, we investigated protection level to Hepatitis B infection in children 6 months after completing chemotherapy.

Methods: In this study 68 patients with cancer and 68 healthy donors were enrolled. Patients were 1.5 -12 years old with completed standard chemotherapy at least for 6 months. All the patients and healthy donors were negative for HBsAg and HBeAg and had received Hepatitis B vaccination. IgG antibody concentrations against Hepatitis B Virus (HBV) were determined in the patients and healthy subjects serum by ELISA method. IgG antibody titer > 10 mIU/ml was considered as baseline protective titer for preventing HBV infection.

Results: Anti-HBs antibody titer in 19.12% of patients was less than 10 mIU/ml and 11.76% of the patients had borderline antibody titer (10-20 mIU/ml). In healthy subjects 2.94% and 5.88% had antibody titer < 10 mIU/ml and 10-20 mIU/ml respectively. According to statistical analysis frequency of non immune subjects in children with cancer was significantly higher than those in healthy children (PV=0.024).

Conclusion: Hepatitis B vaccination post-intensive chemotherapy in the children with cancer is strongly recommended.

Keywords: Hepatitis B infection, vaccination, cancer, immunity.

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