

Natural Immunity against Neisseria meningitides in beta Thalassemia Major: A Descriptive Study in a South-West of Iran

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ABSTRACT

Natural immunity to Neisseria meningitides (NM) was evaluated in patients with beta thalassemia. Then, the proportion of natural protective immunity was compared between splenectomised and non splenectomised patients.

Methodology: All patients with beta thalassemia major were enrolled in our descriptive study that was done in Thalassemia Ward of the academic hospital at Motahari Hospital, Jahrom, Iran. There was not any vaccination against Neisseria meningitides in Iranian National Vaccination schedule. All patients were categorized to groups A (non splenectomised) and B (splenectomised). Demographic data such as age and sex, and time after splenectomy (month) were recorded by a questionnaire. The levels of serum ferritin and serum anti meningococcal polysaccharide capsule antigen IgG were determined by enzyme-linked immune sorbent assay method. An IgG antibody level of $2\mu\text{g/ml}$ or higher was named as protective immunity (natural immunity) against N. meningitides. We used the independent student t, One-way ANOVA and chi square test to compare the means and ratios between study groups. For the data record and analysis, we used SPSS software version 16 (SPSS Inc., Chicago, IL, USA). A p-value less than 0.05 were considered as statistically significant. Results: Overall, 14.4% of patients had natural protective MN specific IgG antibody ($\geq 2\mu\text{g/ml}$). The trend of this protective immunity was insignificantly decreased with advancing age. Sex, post splenectomy duration and serum concentration of ferritin was no significant differences between immune and un-immune patients. The proportion of natural protective immunity was 17% and 11.7% in non splenectomised and splenectomised cases, respectively. Conclusions: Our results showed a lower natural protective immunity in patients with beta thalassemia major that it was similar in splenectomised and non splenectomised patients. Thus seems to be necessary that these susceptible patients vaccinate against NM.

Keywords: Neisseria meningitides, protective immunity, beta Thalassemia, Splenectomy