

## Original Paper

# Antibody responses to vaccination with pneumococcal polysaccharide vaccine in splenectomized patients

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## Abstract

**Background and Objective:** An increased risk of invasive infections with encapsulated bacteria such as *Streptococcus pneumoniae* has been described among splenectomized patients. Pneumococcal vaccination has been recommended in these patients. In this study, the serum antibody response to pneumococcal polysaccharide antigens in splenectomized patients with idiopathic thrombocytopenic purpura (ITP) or trauma who immunized with Pneumovax 23 was evaluated.

**Materials and Methods:** This case - control study was performed on two groups of patients including fifteen cases of trauma patients (11 male, 4 female) and twenty patients with ITP (10 male, 10 female) along with 40 healthy volunteers as controls who were immunized with Pneumovax 23 to prevent pneumococcal infections. All patients received the pneumococcal vaccine before splenectomy. The serum antibody response (IgG and IgG2) to pneumococcal antigens was determined by enzyme-linked immunosorbent assay (ELISA) technique prior to vaccination and 4 weeks post-vaccination. Analyzing of data was performed using student t-test and linear regression test.

**Results:** The mean of post-vaccination IgG or IgG2 titer to the pneumococcal antigens in ITP patient group was significantly lower than those in controls or in trauma group ( $P < 0.05$ ). No significant differences in IgG or IgG2 antibody titer increase were found between trauma group and healthy control group. Response to immunization was poor in 9 of 20 ITP patients.

**Conclusion:** This study indicated that 45 percent of patients suffered from ITP who have undergone splenectomy responded poorly to pneumococcal antigens.

**Keywords:** Splenectomized patients, Pneumococcal polysaccharide vaccine, Idiopathic thrombocytopenic purpura, Trauma

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