

## Splenectomy for Hematological Disorders in Iranian Pediatric Patients: A Single Center Study

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Splenectomy is a widely accepted therapeutic strategy in the management of a variety of hematological disorders<sup>[1]</sup>. Regardless of its therapeutic advantages, it may be followed by overwhelming post-splenectomy infection (OPSI), the most devastating complication in asplenic individuals, which is a fulminant and rapidly fatal condition mainly due to encapsulated organisms<sup>[2]</sup>. The true incidence of OPSI is not well known; however, age at time of splenectomy, the underlying diagnosis, and the time elapsed from splenectomy constitute the main determinants of fatal outcome<sup>[3,4]</sup>. Vaccinations against *Streptococcus pneumoniae*, *Haemophilus influenzae* type b, and *Neisseria meningitidis*, and long-term antibiotic prophylaxis, in conjunction with patient education, have been strongly advocated in splenectomized patients<sup>[2,5]</sup>.

The present study was conducted to address issues related to the enforcement of and compliance with current prevention guidelines among splenectomized patients in a tertiary care setting. In a retrospective cross-sectional study,

we evaluated 53 patients aged 1.5 to 23 years (32 males and 21 females) undergoing splenectomy within a 5-year period at Mofid Children's Hospital, Shahid Beheshti University of Medical Sciences and Health Services, Tehran, Iran. The most common indications for splenectomy were thalassemia major (43.3%), hereditary spherocytosis (HS) (15.1%), and idiopathic thrombocytopenic purpura (ITP) (11.3%). Findings from other studies indicated that ITP<sup>[6,7]</sup>, sickle cell disease<sup>[8,9]</sup>, and HS<sup>[10]</sup> were the most common single hematologic disorders requiring elective splenectomy in the course of the disease. The noted discrepancy might be partially due to the fact that beta-thalassemia is particularly prevalent among the Mediterranean countries, justifying its high prevalence among Iranian patients undergoing splenectomy.

Studies conducting retrospective audits of vaccination status in splenectomized individuals reported 62-80.6% vaccination rate against *Streptococcus pneumoniae*<sup>[11-13]</sup>, whereas in the present study, all 53 patients (100%) received pneumococcal vaccination perioperatively, with 41.5% and 35.8% of them being respectively vaccinated against *Neisseria meningitidis* and *Haemophilus influenzae* type b as well. On the whole, 58.5% received all three vaccines.

Of all studied patients, 38 (71.7%) were provided with follow-up care, of whom, 4 developed OPSI and died at the time of study. A review of available follow-up data revealed that 33 (out of 34) patients were receiving daily prophylactic oral penicillin, compared to 63-93% of patients being prescribed long-term antibiotic prophylaxis in other studies<sup>[13-15]</sup>.

Besides appropriate and timely immunization with pneumococcal vaccine and a high compliance rate to daily antibiotic prophylaxis, adherence to the remaining key guidelines concerning proper immunization against *Haemophilus influenzae* and *Neisseria meningitidis* and, more important, patient education, i.e. providing patients with clear

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discharge instructions emphasizing on the importance of timely follow-up visits and recognizing the need for urgent referral for any suspected infection, is not fully satisfying. Many of these could be met affordably by developing a registry of splenectomized patients, which will be aiding in providing patients with continued follow-up cares.

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