

Splenic Vaccines Guideline

Written on March 1, 2023

Background:

The spleen is one of the most commonly injured organs and is affected in about one-third of cases with traumatic abdominal injuries. These injuries are graded according to the AAST Injury scoring scale (1). Injuries are managed with any combination of observation with serial exams/hemoglobin levels, angioembolization, or splenectomy. Increased ISS and high-grade splenic injuries are associated with failure of observation alone. Multiple studies have shown angioembolization increases splenic salvage rates. Splenic salvage is important as asplenic patients are known to be more susceptible to infections from encapsulated bacteria (*Haemophilus influenzae*, *Streptococcus pneumoniae*, *Neisseria meningitidis*). The most feared sequel of splenectomy is overwhelming post-splenectomy infection (OPSI), a syndrome consisting of a nonspecific prodrome rapidly evolving toward pneumonia, meningitis, or fulminating sepsis. Although several strategies have been embraced, namely antibiotic prophylaxis, rescue therapy, and even splenic autotransplant, the cornerstone of OPSI prevention remains prophylactic immunization. There is an estimated lifetime risk of 5%. To reduce the risk of OPSI, all patients who undergo traumatic splenectomy should be vaccinated prior to hospital discharge with post-splenectomy vaccines against the three above-mentioned encapsulated bacteria (2). However, in a recent EAST PMG (3), recommendation was made against routine post-splenectomy vaccines in patients who have undergone splenic angioembolization. This recommendation was made given that when comparing angioembolization patients to controls, there seemed to be no difference in immune markers and therefore presumably no difference in immune function or infectious risk.

Clinical Practice Guideline:

Post- Splenectomy: Yes, Vaccinate

- Patients should receive post-splenectomy vaccines immediately after splenectomy, or at the latest prior to discharge. They should also receive vaccines according to schedule below at 4 and 8 weeks.
- Furthermore, annual seasonal influenza vaccination is equally advised to prevent secondary bacterial coinfections, especially *S pneumoniae* and *Staphylococcus aureus*
- Patients can receive vaccines through primary care physician, pharmacies such as CVS/Walgreens, or through the trauma clinic. Note, the 5-year boosters will not be obtained through the trauma clinic.

Post- Embolization: No, do not vaccinate

Vaccine Schedules and Recommendations for Patients With Splenectomy, According to US Centers for Disease Control and Prevention–Advisory Committee on Immunization Practices (2019) and Infectious Disease Society of America Guidelines (2013)

- Pneumococcal Vaccination⁵
 - Provide pneumococcal conjugate vaccine (PCV) 20
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- Meningococcal ACWY Vaccination
 - Provide meningococcal ACWY (MenACWY) plus MenACWY 8 wk later, plus MenACWY boosters every 5 y.
- Meningococcal B Vaccination
 - Provide meningococcal (Men) B-4C, plus MenB-4C 1 mo later.
 - Alternatively, provide MenB-fHbp, plus MenB-fHbp 1 to 2 mo later and MenB-fHbp 6 mo later.
- Haemophilus Type B Vaccination
 - Provide Haemophilus Influenzae type B conjugate vaccine, single dose.
- Seasonal Influenza Vaccination
 - Provide seasonal influenza vaccination annually. The recommended month is October.
- Notes
 - Live attenuated vaccines are contraindicated for patients with asplenia.
 - Patients with oncological diseases should be given immunization before starting cytotoxic, immunosuppressive, or radiation therapy.
 - If immunization is not feasible 2 wk before treatment, it should be initiated 3 mo after treatment completion.
 - For patients receiving anti-B-cell antibodies (rituximab and similar agents), vaccination schedule should be postponed up to 6 mo after treatment completion.
 - Pregnant women have no contraindications to conjugated or inactivated vaccines. MenB vaccination needs precaution and might be delayed until after pregnancy.
 - Vaccines can be administered simultaneously either before or after surgery, except for Menactra® (MenACWY), which should be administered at least 4 wk apart from PCV13. Menveo® and Menquadfi® do not require separation from other vaccines. Different injection sites should be preferred.

Deleted: MenACWY, which should be administered at least 4 wk apart from PCV13.

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