Vaccination Guidelines for Patients with Functional or Anatomic Asplenia

Purpose

Review the appropriate vaccinations and the appropriate timing of vaccination administration in patients with functional or anatomic asplenia.

Definitions

Functional asplenia: presence of a spleen, however absence of splenic function due to diseased tissue and/or spontaneous infarction.
Anatomic asplenia: physical absence of the spleen most likely due to splenectomy.

Background

Patients who are asplenic or have impaired spleen function are potentially at a higher risk of infection, typically due to encapsulated organisms such as *Streptococcus pneumoniae, Haemophilus influenza type B, and Neisseria meningitides.* With this risk it is crucial that patients receive the appropriate vaccinations at the appropriate time as per current CDC recommendations.

Guidelines

The vaccination schedule consists 4 vaccines given initially in patients with an *unknown* vaccination history. Day 1 is dependent upon whether splenectomy/embolization is elective or emergent

- If elective, initial administration of vaccinations should occur 2 weeks prior to procedure
- If emergent, initial administration of vaccinations should be given once the patient has stabilized post-operatively
    - Waiting 14 days post-operatively for administration of vaccines is unnecessary and may lead to missed vaccinations

Vaccination Guidelines for Functional or Anatomical Asplenia in Adult Patients with Unknown Vaccination History		
Dose #1 Day 1	***Dose #2 4 weeks post initial dose***	***8 weeks post initial dose***
Haemophilus b conjugate (Hiberix®) ¥	-	-
Meningococcal serogroup B (Bexsero®)	Meningococcal serogroup B (Bexsero®)	-
Meningococcal A/C/Y/W-135 (Menveo®)	-	Meningococcal conjugate (Menveo ®)
Pneumococcal conjugate 13-valent (Prevnar 13®) *	-	Pneumococcal polysaccharide 23-valent (Pneumovax® 23)
¥ Do not administer to patients who have previously received Haemophilus vaccination ** If pneumococcal vaccination history is known, please refer to "Streptococcus pneumoniae" below*		

Haemophilus influenza type B

For patients who have not received Haemophilus vaccination or have an unknown Haemophilus vaccination history

- Haemophilus b conjugate (Hib) vaccine
    - Initial administration: Day 1

For patients who have received Haemophilus vaccination

- Do not administer

Neisseria meningitides

- Meningococcal serogroup B vaccine
    - Initial administration: Day 1
    - Follow-up dose: 4 weeks after initial dose
- Meningococcal conjugate A/C/Y/W-135 vaccine
    - Initial administration: Day 1
    - Follow-up dose: 8 weeks after initial dose
    - Every 5 years thereafter

Streptococcus pneumoniae

For patients who have not received pneumococcal vaccination or have an unknown pneumococcal vaccination history

- Pneumococcal conjugate 13-valent (PCV 13) vaccine
    - Initial administration: Day 1
- Pneumococcal polysaccharide 23-valent (PPSV23) vaccine
    - Initial administration: 8 weeks after PCV 13

For patients who have a known pneumococcal vaccination history

- Consult with pharmacy or refer to https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf, page 5, section 7.

N.B.: *Patients may receive up to three doses of PPSV23 in their lifetime, two doses under age 65 and one dose at age 65 or older. Doses must be given at least five years apart.*

References

1. http://www.cdc.gov/vaccines/adults/rec-vac/health-conditions/asplenia.html
2. http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html
3. http://www.cdc.gov/vaccines/vpd-vac/pneumo/downloads/adult-vax-clinician-aid.pdf
4. Konradsen, H. B., et al. "Antibody levels against Streptococcus pneumoniae and Haemophilus influenzae type b in a population of splenectomized individuals with varying vaccination status." Epidemiology and infection 119.02 (1997): 167-174.
5. Shatz, David V., et al. "Immune responses of splenectomized trauma patients to the 23-valent pneumococcal polysaccharide vaccine at 1 versus 7 versus 14 days after splenectomy." Journal of Trauma and Acute Care Surgery 44.5 (1998): 760-766.