Important Vaccines in Asplenic Adults

ADULTS only. Go elsewhere for a pediatric talk

By Ronald Chia-Rong Chang

Splenectomy and Vaccines (adults)

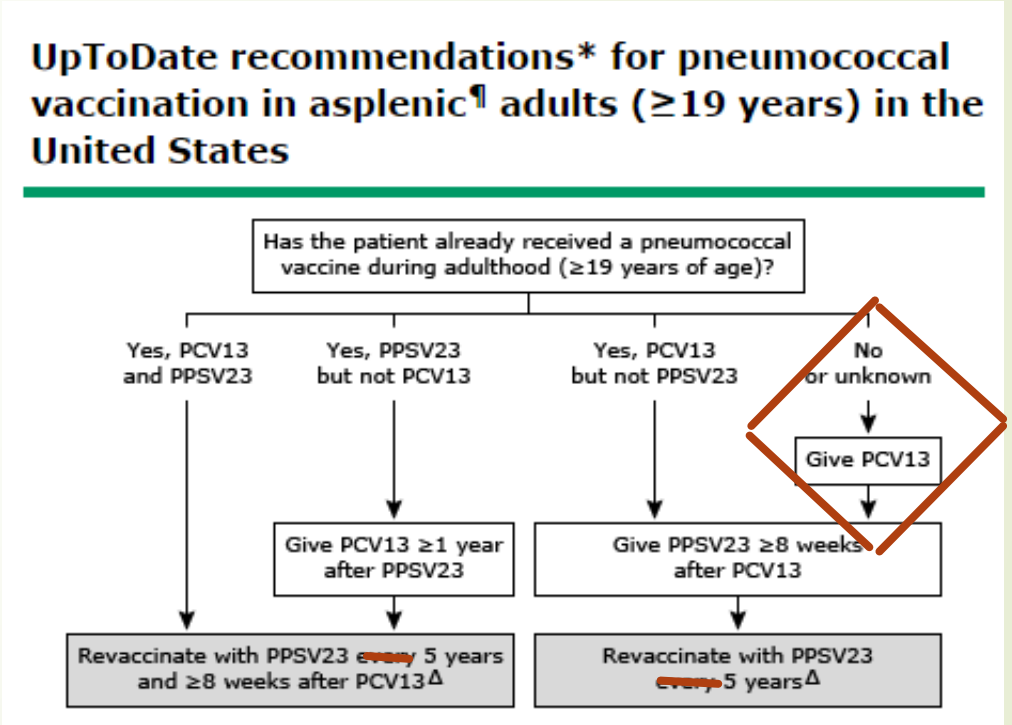
- WHY?
  - People without spleens die of infection…like, a LOT
- What Kind of Infection?
  - Encapsulated organisms
    - Spleen is the dominant site of IgM Antibody production for encapsulated organisms
      - No Spleen = Weaker immune system to certain things

Splenectomy and Vaccines (adults)

- WHAT to vaccinate?
  - Streptococcus Pneumoniae (1)
  - Neisseria meningitides (2)
  - Haemophilus Influenzae type B (3)
- When to vaccinate?
  - Ideally, 14 days **before** surgery.
  - Otherwise, 14 days **after**.
    - Something about opsonophagocytic function of Abs

Vaccination: Streptococcus Pneumoniae

- **Pneumococcal**
  - Prevnar **13** and Pneumovax **23**
    - Rationale: Streptococcus Pneumoniae the MOST dangerous of encapsulated organisms.
    - Exact timing depends on prior vaccinations…you will pull up a table to make certain you're doing it right
  - Prevnar 13 > in **8** weeks Pneumovax 23 >> **5yr** Pneumovax 23 >> age **65** Pneumovax 23
  - there is a movement towards Q5year repeat Pneumovax in Europe. Not standard in USA



Vaccination: Neisseria Meningitides

- AKA: Meningiococcal Vaccine
- This is probably the most confusing one given the multiple different kinds, and new updates on vaccination guidelines
  - Vaccine type #1: quadrivalent (targets 4 serogroups ACWY). **Menactra/Menveo**
  - Vaccine type #2: mono-serogroup (serogroup B only). **Trumenba/Bexsero**
  - ~~Vaccine Type #3: mixed (ie MenHibrix. Serogroup C and Y + haemophilus influenza B). For children only; IGNORE~~
- serogroups C, B, then Y most common serogroups causing infection
  - There are multiple different vaccines
  - WHY? Because of production issues in order to target the serogroups
    - Serogroup B notoriously difficult to target

Vaccination: Neisseria Meningitides (Meningococcal)

Menactra/Menveo:

- **conjugated** targets serogroups A, C, Y and W (abbreviation Men**ACWY**) or **quadrivalent**
- Difference: different conjugate protein
- Give 2 doses 2 months apart: then boost Q5year with repeat dose

Trumenba/Bexsero:

- NEW as of 6/2015
- Monovalent serogroup B
- Trumenba: 1, 1-2, then at 6 months
- Bexsero: 2 doses at least 1 month apart (not available in LACUSC)

People with functional or anatomic asplenia, including sickle cell disease		
For age 2 through 18 months	Give Menveo at ages 2, 4, 6, and 12 months or MenHibrix at ages 2, 4, 6, and 12 to 15 months.	Give Menactra or Menveo booster after 3 years fol years thereafter.
For children age 19 through 23 months who have not initiated a series of Menveo or MenHibrix	Give two doses of Menveo 3 months apart.	
For age 2 through 9 years	Give two doses of Menactra or Menveo 2 months apart‡‡.	Boost every 5 years with Menactra or Menveo†, ¥¥
For age 10 through 55 years	Give two doses of Menactra or Menveo 2 months apart‡‡ **and either** Trumenba (3 doses administered at 0, 1 to 2, and 6 months) or Bexsero (2 doses administered at least one month apart)ΔΔ.	Boost every 5 years with Menactra or Menveo†, ¥¥
For age 56 years and older	Give two doses of Menactra or Menveo 2 months apart¶¶ **and either** Trumenba (3 doses administered at 0, 1 to 2, and 6 months) or Bexsero (2 doses administered at least one month apart)ΔΔ.	Boost every 5 years with Menactra or Menveo¥¥.

Vaccination: Haemophilus Influenza B

- **H influenza b**
  - Conjugated vaccine **x1** (PRP-OMP or PRP-T)
    - Rationale: most adults are already immune by age 5, so its more of a 'safety'/'theoretical' thing
    - The PRP-OMP/PRP-T refers to different conjugated proteins

Guidance for Haemophilus influenzae type b (Hib) vaccination in high-ris

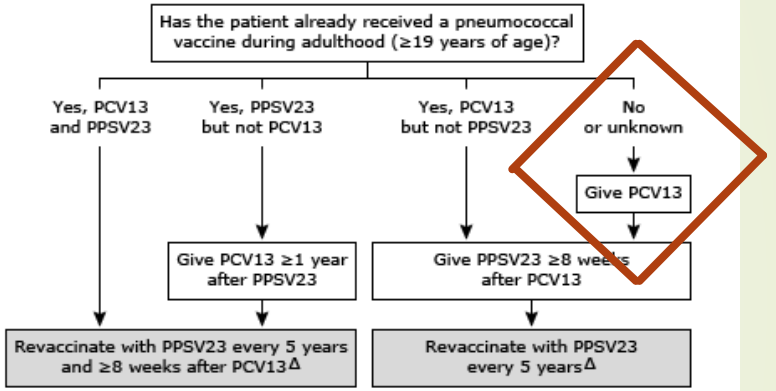
High-risk group*	
Patients aged <12 months	Follow routine Hib vaccination rec
Patients aged 12 to 59 months	If unimmunized or received 0 or 1
	If received ≥2 doses before age 1
	If completed a primary series and
Patients aged <60 months undergoing chemotherapy or radiation therapy¶	If routine Hib doses administered
	If dose administered within 14 da
Patients aged ≥15 months undergoing elective splenectomy	If unimmunized: Δ 1 dose prior to
Asplenic patients aged >59 months and adults	If unimmunized: Δ 1 dose
HIV-infected children aged ≥60 months	If unimmunized: Δ 1 dose
HIV-infected adults	Hib vaccination is not recommend
Recipients of hematopoietic stem cell transplant, all ages	Regardless of Hib vaccination hist

Vaccinations of adults (by Organisms)

Guidance for Haemophilus influenzae type b (Hib) vaccination in high-risk groups

High-risk group*	
Patients aged <12 months	Follow routine Hib vaccination recommendations
Patients aged 12 to 59 months	If unimmunized or received 0 or 1 dose before ag
	If received ≥2 doses before age 12 months: 1 do
	If completed a primary series and received a boo
Patients aged <60 months undergoing chemotherapy or radiation therapy¶	If routine Hib doses administered ≥14 days befor
	If dose administered within 14 days of starting th
Patients aged ≥15 months undergoing elective splenectomy	If unimmunized: Δ 1 dose prior to procedure ◇
Asplenic patients aged >59 months and adults	If unimmunized: Δ 1 dose
HIV-infected children aged ≥60 months	If unimmunized: Δ 1 dose
HIV-infected adults	Hib vaccination is not recommended
Recipients of hematopoietic stem cell transplant, all ages	Regardless of Hib vaccination history: 3 doses (at

UpToDate recommendations* for pneumococcal vaccination in asplenic¶ adults (≥19 years) in the United States



People with functional or anatomic asplenia, including sickle cell disease		
For age 2 through 18 months	Give Menveo at ages 2, 4, 6, and 12 months or MenHibrix at ages 2, 4, 6, and 12 to 15 months.	Give Menactra or Menveo booster after 3 years follow years thereafter.
For children age 19 through 23 months who have not initiated a series of Menveo or MenHibrix	Give two doses of Menveo 3 months apart.	
For age 2 through 9 years	Give two doses of Menactra or Menveo 2 months apart ‡‡.	Boost every 5 years with Menactra or Menveo †, ¥¥.
For age 10 through 55 years	Give two doses of Menactra or Menveo 2 months apart ‡‡ **and either** Trumenba (3 doses administered at 0, 1 to 2, and 6 months) or Bexsero (2 doses administered at least one month apart) ΔΔ.	Boost every 5 years with Menactra or Menveo †, ¥¥.
For age 56 years and older	Give two doses of Menactra or Menveo 2 months apart ¶¶ **and either** Trumenba (3 doses administered at 0, 1 to 2, and 6 months) or Bexsero (2 doses administered at least one month apart) ΔΔ.	Boost every 5 years with Menactra or Menveo ¥¥.

Ronald, that's too Difficult. Can we have a cheat sheet by organism?

- AKA…I have no time to figure out patients prior vaccinations AND minimize clinic visits
- Rationale: vaccinations in general are HIGH benefit LOW risk
- Timing: start 14 day before or 14 days after splenectomy ideal

- Pneumococcal
  - **x1** Prevnar 13 > in 8 weeks **x1** Pneumovax 23 >> **5yr** Pneumovax 23 >> age 65 Pneumovax 23
- Meningococcal
  - Menactra/Menveo (conjugate): x1 >> in 2 months x 1 >>**Q5yr** booster of either conjugate
  - Serogroup B (trumenba/bexsero): depends
    - Trumenba: x1 >> in 2 months x 1 >> at 6 months x 1
    - Bexsero: x1 >> in 2 months x 1
- H influenza b: **x1** conjugated ONLY

Post Splenectomy Vaccinations

In County (Trumenba)

- 1st eval: 14 days before OR after surgery
  - **Prevnar 13**
  - Meningococcal **conjugate** (ACWY) AND Meningococcal **Serogroup B** (Trumenba ONLY)
  - **Haemophilus B**
- 2 months:
  - **Pneumovax** 23
  - Meningococcal **conjugate** (ACWY) AND Meningococcal **Serogroup B** (Trumenba ONLY)
- 6 months:
  - Meningococcal **Serogroup B** (Trumenba ONLY)
- Q 5 years:
  - **Pneumovax** + Meningococcal **conjugate** (ACWY)