Yukon-Kuskokwim HEALTH CORPORATION

Clinical Guideline

Amoxicillin Allergy Trials (Pediatric)

Background

• Only 4-9% of those...labeled [penicillin-allergic] are currently allergic. It is important to identify those who are not allergic, because children mislabeled as penicillin-allergic have more medical visits, receive more antibiotic prescriptions, and have longer hospitalizations with more antibiotic-related complications.[1]
• Up to 10% of children develop rashes while receiving antibiotics. Most are diagnosed...as allergic to the implicated antibiotic, and most continue to avoid the suspect antibiotic in favor of alternatives, which may be less effective, more toxic, and more expensive.[2]
• Do not label a patient as allergic to penicillin/ amoxicillin unless he or she has true hives, anaphylaxis, or a life-threatening reaction. Please include photos of rashes in RAVEN.
• Children labelled as allergic to penicillin/amoxicillin often carry that label for the rest of their lives.
• Please consult a pediatrician with any questions.

Anaphylaxis

• Acute onset – several minutes to hours from exposure.
• Generalized hives, pruritis or flushing, swelling of lips/tongue/uvula, and at least one of the following:
  Dyspnea, bronchospasm, stridor
  Hypotension
  Evidence of hypoperfusion of end-organs
  Persistent crampy abdominal pain, and/or vomiting or diarrhea

Hives vs Viral Rash

• True hives are raised, itchy, larger than dime-sized, come and go, move around the body, and change shape and size. True hives are uncomfortable. Ask if the rash bothered the child.
• Keep in mind that many parents refer to any rash as "hives." Get a description every time.
• A viral exanthem is typically diffuse, fine, pinpoint red dots and can be dense, coalesced, larger raised lesions. The rash typically covers the face and chest but can cover the whole body. The rash typically worsens and takes days to clear.

Patient labeled with a penicillin/ amoxicillin allergy.

→ Review history. (See box.)

→ Was the reaction anaphylaxis (see box) or other life-threatening reaction (eg Stevens-Johnson syndrome, etc.)?

Yes → • Do not give drug or perform trial.
• Update chart, including the Problem List and a comment on the allergy.
• Refer to Allergy & Immunology at 5.

No → What was the reaction?

History

Chart review:
• Review notes in allergy alert. Find date allergy was added, and then review notes from that day. Was ED visit or hospital admission required?
• Review Multimedia Manager photos.
• Were steroids or other treatment given?
• Has patient received a drug of the same class since the allergy was reported? Was it tolerated? Were there symptoms?

History from patient/family:
What was the reaction?
- Vomiting and/or diarrhea?
- Rash?
  Age? Time from first dose?
  Hives? (See box.) Was it itchy?
  Blistering or peeling?
  Photos from family?
- Trouble breathing?
- Swelling of tongue/lips?
- Joint swelling or fever?
- Mucous membrane involvement?

Rash

True hives, skin blistering/peeling, or mucous membrane involvement → • Do not give drug or perform trial.
• Update chart, including the Problem List and a comment on the allergy.
• Refer to Allergy & Immunology at 5.

Viral-appearing rash or other type of rash → **Not a true allergy.**
• Educate and perform Amoxicillin Trial (see box).
• If patient/family refuses trial, update Problem List.
• Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

Vomiting and/or diarrhea without any other S/Sx anaphylaxis

→ **Not a true allergy.**
• Educate and perform Amoxicillin Trial (see box).
• If patient/family refuses trial, update Problem List.
• Offer future trial or refer to Allergy & Immunology at age 5 for amoxicillin allergy testing.

Other

→ Get more history. Consider pediatric consult.

Amoxicillin Trial Procedure[2]

Use AMB Amoxicillin Trial Power Plan.

1. Obtain VS. Perform physical exam, including lung exam. Have appropriate dose of EpiPen or epinephrine. Epinephrine (1 mg/mL): 0.01 mg/kg (or 0.01 mL/kg) IM Q5-15 minutes.
Per AAP recommendations:
  • 7.5-25 kg: use EpiPen Jr (0.15 mg)
  • ≥ 25 kg: use EpiPen (0.3 mg)
2. Calculate weight-based dose of amoxicillin. Give patient 10% of that dose.
3. Place patient in nearby room and instruct caregiver to notify staff of any changes in status.
4. If no reaction by 20 minutes, give patient remaining 90% of weight-based dose of amoxicillin.
5. Observe another 60 minutes. If no reaction, check VS and physical exam. If all stable, discharge home with regular course of drug.
6. Give patient and family amoxicillin trial education sheet.
7. Update allergy alert in RAVEN. Click the allergy in the banner. Right click over the drug name and choose "cancel." On the "reason" drop-down menu, choose "OK on Retrial."

Notes:
• If patient is on a beta-blocker, stop this for 24 hours prior to procedure, if possible. Beta-blockers can interfere with treatment for anaphylaxis, if it occurs.
• Ensure that patients with asthma have optimal control prior to this procedure.

References
1. Kelso JM. "Provocation challenges to evaluate amoxicillin allergy in children." JAMA Pediatrics 2016;170(6):e160282.
2. Mill C, et al. "Assessing the diagnostic properties of a graded oral provocation challenge for the diagnosis of immediate and nonimmediate reactions to amoxicillin in children." JAMA Pediatrics. 2016;170(6):e160033.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 8/3/21. Click here to see the supplemental resources for this guideline.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.