

Allergic Reactions to Beta-Lactam Antibiotics

What is a beta-lactam antibiotic?

Examples of beta-lactam antibiotics include: Amoxicillin, Ampicillin, Penicillin. These antibiotics are a doctor's first choice treatment for many common infections in children.

Why am I getting this information?

You are receiving this information sheet because your child developed symptoms after taking one of these antibiotics. Allergies to antibiotics change how doctors treat your child when they have an infection. Some children can outgrow their allergy. Others may have had a mild reaction that is not a true allergy.

What kind of reactions do people have to beta-lactam antibiotics?

There is a wide range of reactions from mild to severe.

Mild:

- Itching
- Swelling or Rash
- Stuffy, Runny Nose or Sneezing
- Itchy Watery Eyes
- Red Bumps or Hives anywhere on the body

Severe:

- Swelling of the mouth or tongue
- Trouble swallowing or speaking
- Wheezing or trouble breathing
- Belly pain, nausea, vomiting or diarrhea
- Dizziness or fainting

Severe reactions happen immediately or within 1-2 hours of taking an antibiotic. They are very rare and happen in < 1% of children. A severe reaction might require an Epi-Pen which is an emergency life-saving medicine that helps stop the allergic reaction.

Milder symptoms, like rashes, can be caused by a lot of different things other than an allergy to the antibiotic.

Why did my child develop a rash, if they are not allergic to the antibiotic?

Most rashes in children are caused by the infection, NOT the antibiotics. In other cases, the combination of the antibiotic and the infection can cause a rash that can sometimes mimic an allergic reaction. Both of these reactions are NOT allergic reactions.

For example, if your child has ever taken the same antibiotic again without a reaction, they are not allergic to it.

It is now recommended to do an amoxicillin challenge after your physician reviews some important information to rule out any serious allergic reaction.

How do you test for an allergy?

Your child can take a single dose of amoxicillin and be observed for 1 hour to ensure there is no allergic reaction. If they do not have a reaction - great news, they do not have an allergy!

Based on research, we expect 95% of children who are deemed safe to have a challenge will not be allergic, and not have a reaction. The remaining 5% may experience a mild reaction such as rash. A serious reaction like anaphylaxis occurs in <1% of children. If this happens, we administer an Epi-Pen.

What about a skin test instead?

Skin testing is not useful to screen for an allergy when there is no history of a convincing severe, immediate reaction.

Why should I do this for my child?

In January 2020, the Canadian Pediatric Society published a statement calling attention to this very important public health issue. Children labelled with antibiotic allergies may have longer stays in the hospital, may develop infections that are harder to treat, and may be given antibiotics that are not the first choice for their illness. It is best to de-label a child if they are not truly allergic to this type of antibiotic.

By de-labeling your child's allergy, this means more options for antibiotics if your child is to get sick and needing antibiotics.

How do I know if my child can be de-labelled?

Talk to your family doctor, pediatrician or pediatric emergency physician about whether your child would be safe for an oral amoxicillin challenge. If they are, it could be done in your doctor's office, in the emergency department or through referral to a pediatric allergist!

References

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