

Fig. 2 Penicillin allergy assessment guide

Penicillin allergy assessment guide

NEW UNDERSTANDINGS IN PENICILLIN ALLERGY

- 1** **Penicillin allergy often wanes over time**
50% of people will no longer be allergic at 5 years.
- 2** **Many reported penicillin allergies are not true allergies**
Over 90% of reported penicillin allergies can be excluded by skin testing and oral provocation.
- 3** **Cross-reactivity between penicillins and cephalosporins is less common than previously thought**
Overall, only 1 to 2% of patients with a confirmed penicillin allergy have a cephalosporin allergy. (However, a reaction to cefalexin or cefaclor is more likely if the patient had a recent amoxicillin or ampicillin allergy, because these drugs have a similar side-chain structure.)

ASSESSING PENICILLIN ALLERGY

Appropriate antibiotic prescribing in a patient reporting a penicillin allergy requires an understanding of allergy SEVERITY (severe vs nonsevere) and TIMING (immediate vs delayed), and antibiotics tolerated since the reaction.

Questions to ask in a penicillin allergy assessment

SEVERITY—severe or nonsevere	<ol style="list-style-type: none"> 1. Do you remember the details of the reaction? 2. How was the reaction managed? Did it require treatment or hospitalisation?
TIMING—immediate (onset within hours of first or second dose) or delayed (onset after days); recent or distant past	<ol style="list-style-type: none"> 3. How long after taking the antibiotic did the reaction occur? 4. How many years ago did the reaction occur?
ANTIBIOTICS TOLERATED SINCE REACTION	<ol style="list-style-type: none"> 5. Since the reaction, have you taken any other antibiotics without problems? Having tolerated an antibiotic before an allergic reaction does not mean you will tolerate it after the reaction.

If the patient cannot recall the details of the reaction, use the time since reaction (childhood vs recent) and treatment (eg no treatment vs hospitalisation) to gauge the likely severity. Many people who report allergy to a penicillin in childhood are able to tolerate the drug as an adult.

Examples of penicillin allergy, classified by severity and timing

	Severe	Nonsevere
Immediate	anaphylaxis, compromised airway, angioedema, extensive urticaria, hypotension, collapse	mild urticaria or mild immediate rash
Delayed	severe cutaneous adverse drug reactions (eg DRESS, SJS/TEN), or significant internal organ involvement (eg acute interstitial nephritis)	benign childhood rash or maculopapular rash

DRESS = drug rash with eosinophilia and systemic symptoms; SJS/TEN = Stevens-Johnson syndrome / toxic epidermal necrolysis

PRESCRIBING FOR PATIENTS WITH PENICILLIN ALLERGY

If the patient reporting a penicillin allergy cannot recall the details of the reaction, use the information available to assess the level of risk, and weigh up the benefits and harms of prescribing a particular antibiotic. For less severe infections, consider whether an antibiotic is really needed.

While prescribing a non-beta-lactam antibiotic may seem the simplest option, in many cases this is not the optimal treatment for the infection, and it can be associated with a greater risk of adverse reactions and antimicrobial resistance.

Consult eTG complete for treatment recommendations and further information:

- antibiotic recommendations for specific infections, based on four categories of penicillin allergy: severe immediate / severe delayed / nonsevere immediate / nonsevere delayed
- a flowchart summarising the management of patients reporting hypersensitivity to penicillins in whom a beta-lactam antibiotic is the preferred drug
- information on beta lactam cross-reactivity. An understanding of penicillins and cephalosporins that share similar side-chain structures is helpful to predict cross-reactivity.