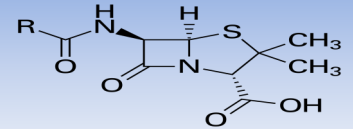


Did you know?

About 10% of the UK population report penicillin allergy, but **less than 1%** will truly be allergic.



Consequences of incorrect allergy coding

- Unnecessary avoidance of penicillin and other beta-lactam antibacterials
- Increased risk of antimicrobial resistance
- Increased use of broad spectrum antibiotics and patient exposure to fluoroquinolones, clindamycin and vancomycin.
- Higher rates of *C. difficile*, MRSA and vancomycin-resistant enterococcus infections
- **Increased hospital stays and treatment costs with poorer clinical outcomes**

Take a clear clinical history by asking the following questions

What other medication and/or food were you taking/eating at the time of reaction?

How long ago did the reaction occur?

What kind of reaction occurred?

How was the reaction managed? Did it need emergency care and/or hospital admission?

How did the symptoms resolve?

When did the symptoms start in relation to the course?



Make sure these details are clearly documented in the patient records, summary care records and in referrals

Recognise Penicillin Allergy Think before you code!

Informing patients and safety netting

Explain how to recognise severe immediate reactions and to seek immediate medical attention if an anaphylactic reaction occurs. Remind patients which antibiotics they could be allergic to e.g.

- Phenoxymethylpenicillin (Penicillin V®),
- Amoxicillin (Amoxil®)
- Pivmecillinam
- Flucloxacillin (Floxapen®)
- Co-amoxiclav (amoxicillin plus clavulanic acid: Augmentin®)
- Co-fluampicillin (flucloxacillin plus ampicillin: Magnapen®).

Reassure that in some cases distantly related antibiotic products related to penicillins may be used without causing any problems. There are also alternative unrelated antibiotics to penicillin available.

The following groups are at increased risk of penicillin allergy

- Patients who receive repeated short or prolonged courses of oral or IV penicillins
- Patients with medical conditions that often have repeat exposures to antibacterials e.g. COPD, Cystic fibrosis
- Atopy does not predispose to penicillin allergy, but patients with atopic disease who have reactions are more likely to have severe symptoms (anaphylaxis)

Medical alerts are available for patients

Patients with documented penicillin allergy should be encouraged to use various products on the market to alert others of their allergy.

All patients should be advised to remind their doctor, nurse or pharmacist about their allergy prior to receiving prescriptions for antibiotics.

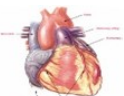


Red alert signs and symptoms

Immediate reaction usually within 60 minutes.

Usually IgE mediated reaction with the following symptoms

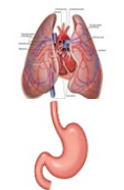
- Urticaria
- Pruritis
- Angioedema
- Anaphylaxis – requires signs and symptoms in **at least two** of the following systems.



Cardiovascular – hypotension, faintness, tachycardia or less commonly bradycardia, tunnel vision, chest pain and/or loss of consciousness.



Skin – Hives, flushing, itching and/or angioedema.



Respiratory – Cough, nasal congestion, shortness of breath, chest tightness, wheeze, sensation of throat closure or choking and/or in voice quality.

Gastro-intestinal - Nausea, vomiting, abdominal cramping and diarrhoea.

Other - Stevens Johnson Syndrome (SJS) - mouth ulceration, skin peeling.

Delayed Reactions

Commonly several days later

Usually T-cell cytokine release reaction with the following symptoms.

- Maculopapular rash
- Morbilliform rash
- Urticarial rash

Common side effects not considered as penicillin allergy

- Delayed onset diarrhoea and vomiting
- Nausea
- Bloating and Indigestion
- Abdominal pain
- Loss of appetite

Reassure patients that these symptoms may be side-effects of medication and not necessarily an allergic reaction. They could also be a result of the infection.

Seek medical attention if symptoms worsen or persist.

These should pass once the treatment course is complete

References

- Shenoy, E., Macy, E., Rowe, T. and Blumenthal, K. (2019). Evaluation and Management of Penicillin Allergy. *JAMA*, 321(2), p.188.
- West, R., Smith, C., Pavitt, S., Butler, C., Howard, P., Bates, C., Savic, S., Wright, J., Hewison, J. and Sandoe, J. (2019). 'Warning: allergic to penicillin': association between penicillin allergy status in 2.3 million NHS general practice electronic health records, antibiotic prescribing and health outcomes. *Journal of Antimicrobial Chemotherapy*, 74(7), pp.2075-2082.

Approximately 80% of patients with IgE-mediated penicillin allergy lose their sensitivity after 10 years. This allows consideration for penicillin re-challenge if previous reaction is deemed to be non-severe. i.e. Not an immediate reaction which affected two or more systems.