

Penicillin Allergy Antibiotic Prescribing Aid

Penicillin hypersensitivity reactions classified by severity and timing of onset:

Onset	Severe Reaction	Non- Severe Reaction
Immediate <i>Typically minutes to hours after drug exposure</i>	IgE-mediated reaction: Anaphylaxis, angioedema, acute urticaria, wheeze/airway swelling/bronchospasm, hypotension, collapse	Mild rash
Delayed <i>Typically days to weeks after drug exposure</i>	Severe generalised skin reactions: Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN), Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) or significant internal organ involvement, Acute Generalised Exanthematous Pustulosis (AGEP)	
	AVOID: Penicillins, Cephalosporins, Carbapenems	AVOID: Penicillins USE WITH CAUTION: Cephalosporins, Carbapenems

CONTRAINDICATED

AVOID in SEVERE & NON-SEVERE penicillin reaction

- Common antimicrobials listed – list is not exhaustive

Penicillins

 - Amoxicillin (*Amoxil*®)
 - Ampicillin
 - Benzylpenicillin (*Crystapen*®)
 - Amoxicillin/clavulanic acid (*Augmentin*®)
 - Flucloxacillin (*Floxapen*® *Flucillin*®)
 - Phenoxymethylpenicillin (*Calvepen*® *Kopen*®)
 - Piperacillin/tazobactam (*Tazocin*®)

CAUTION

AVOID in SEVERE penicillin allergy

USE with caution in NON-SEVERE penicillin reaction

- Common antimicrobials listed – list is not exhaustive

Cephalosporins

 - Cefaclor (*Distaclor*®)
 - Cefalexin (*Keflex*®)
 - Cefazolin
 - Cefotaxime (*Claforan*®)
 - Ceftaroline (*Zinforo*®)
 - Ceftazidime (*Fortum*®)
 - Ceftazidime/avibactam (*Zavicefta*®)
 - Ceftolozane/tazobactam (*Zerbaxa*®)
 - Ceftriaxone (*Rocephin*®)
 - Cefuroxime (*Zinnat*® *Zinacef*®)

Carbapenems

 - Ertrapenem (*Invanz*®)
 - Meropenem
 - Meropenem/vaborbactam (*Vaborem*®)

Monobactams

 - Aztreonam (*Azactam*®) May be used in penicillin allergy unless allergic to 3rd generation cephalosporin i.e. ceftazidime, when its use should be considered with caution

Record allergies carefully on the patient's drug chart and medical notes. Check with the patient AND the allergy section of the drug chart before prescribing and administering antibiotics.

*** It is important to document exactly what symptoms occurred before deciding if a patient is truly penicillin allergic. Check with Patient / Relatives / GP / Community Pharmacy to clarify the nature of allergic reaction:**

- Many patients are *misdiagnosed* as being Penicillin allergic
- An incorrect diagnosis of penicillin allergy leads to unnecessary avoidance of this relatively non-toxic class of drugs, exposes the patient to potentially more toxic drugs, increases health care costs and contributes to the development of antibiotic resistance.
- Patients are often labelled as having a hypersensitivity reaction when in fact a patient may be experiencing a side effect of penicillin, such as gastrointestinal upset (e.g. nausea, diarrhoea) or headache.
- Other concomitant medicines can also be responsible for triggering a hypersensitivity reaction. Therefore, it is important to consider the timeframe over which the hypersensitivity reaction has developed relative to the initiation of different medications.
- Patients who have previously presented with a less severe penicillin allergy (e.g. rash - **NB:** i.e. Non-severe reaction e.g. mild-moderate rash not on the EM/SJS/TEN spectrum of rash and not requiring hospitalisation) *may* be considered to be prescribed cephalosporins/carbapenems *if the benefits outweigh the risks* of cross reactivity. This is a clinical risk assessment. The potential for an allergic reaction should be monitored and resuscitation equipment available if required.
- Patients who are documented as having experienced a severe reaction (e.g. anaphylaxis) from a penicillin should not be prescribed cephalosporins, carbapenems and other betalactam containing antibiotics where acceptable alternatives available. A risk-benefit assessment may be needed in certain circumstances. Discuss individual case with senior clinician and clinical microbiology team if needed.
- Please see HSE guidelines for Antibiotic Allergy with a special reference to Penicillin and Beta Lactam Allergy for further information:
<https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/drug-interactions/guidelines-for-antibiotic-allergy-with-special-reference-to-penicillin-and-beta-lactam>