Guidance under review

Healthcare Improvement Scotland | SAPG

Patient reports penicillin allergy or penicillin allergy recorded in notes

STEP 1: Is there a history suggestive of type 4 hypersensitivity reaction ?

Were any of the following factors present:

- Rash with blistering?
- Oral or genital ulceration or blistering?
- Rash associated by a severe systemic illness requiring admission to hospital?

NO

If YES to ANY – STOP and DO NOT administer a penicillin or other beta-lactam antibiotic to the patient

STEP 2: Assess the history of the penicillin allergy to determine risk of type 1 hypersensitivity

Were any of these features reported following of a dose of a penicillin antibiotic: Collapse, facial/throat swelling, breathing difficulties, itchy rash?

NO

Low Probability of type 1 hypersensitivity reaction

Symptoms typical of intolerance rather than allergy: i.e. nausea and vomiting, diarrhoea

CHALLENGE*

UNCERTAIN

Do any of the following criteria apply?

Reaction occurred less than 10 years ago

OR

Patient was admitted to hospital or required urgent medical care as a result of the reaction

OR

Reaction definitely occurred within an hour

NO

Oral challenge possible as overall risk of immediate allergy low.

Consider oral challenge following senior review only

CHALLENGE*

YES

Unsuitable for oral challenge without specialist review.

Consider referral to a specialist for consideration of detailed allergy assessment if available

YES

If YES and within one hour then **HIGH PROBABILITY** of Type 1 hypersensitivity reaction

Avoid penicillin antibiotics and do not give other classes of beta-lactam antibiotic without specialist review.

Give patient an allergy warning leaflet and allergy warning card.

PROCEED

with beta lactam as indicated for treatment

DE-LABEL

allergy in patients' primary and secondary care records

CAUTIONS:

- This algorithm is only appropriate for patients reporting allergy to penicillin. It is not intended for use in patients reporting allergy/intolerance to other antibiotic classes including cephalosporins and carbapenems.
- For patients taking beta-blockers and ACE inhibitors an oral challenge can be carried out without stopping anti-hypertensive therapy but only in low risk patients – see FAQs.
- Oral challenge should only be undertaken by staff who are trained and equipped in anaphylaxis management.

* See reverse of sheet for oral challenge protocol

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Protocol for the administration of an oral penicillin challenge

This protocol is designed to be used in conjunction with the algorithm overleaf and should only be applied by staff trained and equipped in anaphylaxis management.

Antibiotic challenges can result in immediate allergic reactions, including anaphylaxis. Patients must be closely observed during this procedure and must not leave the ward.

Ensure that properly equipped resuscitation equipment is immediately available in the clinical area.

Preparation:

1. Review the exclusion criteria for oral challenge. **Oral antihistamines should be stopped 72 hours prior to challenge since they may mask true allergy.**
2. Select the antibiotic to be used. In most cases this should be the penicillin antibiotic to which the patient had the adverse reaction. If the antibiotic is unknown then amoxicillin is an appropriate choice.
3. Discuss the plan for an oral penicillin challenge with the patient and give them the patient information sheet.
4. Record in the case notes that consent has been obtained

Procedure for the oral challenge:

1. Measure the patient's observations (HR, BP, oxygen saturations, RR). If the patient has asthma then measure peak expiratory flow rate (PEFR).
2. Medical staff should prescribe and administer the antibiotic and then remain within the clinical area for the first 20 minutes.
3. Antibiotics should be administered as a single oral dose:
   - Amoxicillin 500mg **OR**
   - Flucloxacillin 500mg
4. Inform the patient to notify you immediately if they experience any adverse symptoms
5. Measure the patient's observations (and PEFR if indicated) if they experience any symptoms and at regular intervals e.g. at 10 minutes, 20 minutes, 40 minutes and 60 minutes
6. Record any symptoms that the patient experiences.
7. If the patient reports any of the symptoms of a positive test (see box) or they have a rising NEWS score then the patient should be reviewed immediately by an appropriate senior member of staff

Post-procedure care

1. Interpret the oral challenge as shown in the box.
2. If the challenge is negative give the patient the patient information leaflet, record in the discharge letter and ask the patient's GP to amend their allergy status on the practice records
3. If the challenge outcome is positive written and electronic record must clearly state this. The patient should be provided with the information leaflet and the GP informed of this outcome

Exclusion Criteria

- Medically unstable (NEWS ≥ 2)
- Pregnant
- Uncontrolled asthma
- Unstable coronary artery disease
- ACE inhibitor or beta blocker unless can be withheld 24 hours before

Interpretation of Oral Challenge

Negative Test
No symptoms reported during the period of observation and patient's NEWS score does not rise. Patient experiences isolated nausea or isolated itch without any of the other features of a positive test.

Equivocal test
If there is doubt about the interpretation of the test then it should be discussed with a senior clinician and referral to a local allergy service (if available) should be considered.

Positive Test
Patient experiences any of the following: itchy rash, breathing difficulties, facial swelling, hypotension

Management of Reactions

If severe symptoms - hypotension or breathing difficulties institute immediate management of anaphylaxis, call for senior medical review and consider contacting cardiac arrest team via '2222'

If mild symptoms – isolated rash and NEWS score not elevated then give antihistamine (i.e. 4mg chlorpheniramine or 10mg cetirizine) and consider single dose of prednisolone 30mg.