Health and Social Care Board

Interface Pharmacist Network Specialist Medicines

Penicillamine

Rheumatology shared care guideline.

Specialist details	Patient identifier
Name: _____	
Location: _____	
Tel: _____	**Date:** _____

Introduction

Licensed indications include severe active rheumatoid arthritis and juvenile arthritis.

Adult dosage and administration

125 to 250mg daily for the first month. Increase by the same amount every four to twelve weeks until remission occurs. The minimum maintenance dose to achieve suppression of symptoms should be used and treatment should be discontinued if no benefit is obtained within twelve months. Improvement may not occur for some months.
The usual maintenance dose is 500 to 750mg daily. Up to 1500mg daily may be required.
Penicillamine is available as 125mg and 250mg tablets.

Hospital specialist responsibilities

- Assess if the patient is suitable for treatment with penicillamine.
- Agree shared care with patient's GP and document in patient's case notes.
- Provide patient/carer with relevant written information on use, side effects and the need for monitoring of medication.
- Provide shared care monitoring record booklet if required.
- Undertake baseline tests as indicated in monitoring table.
- Review results of safety monitoring and request additional tests as required.
- Monitor disease response to treatment and need to continue therapy.
- Continue to review the patient at agreed specified intervals, sending a written summary to the GP whenever the patient is reviewed.
- Provide any other advice or information for the GP if required.

Monitoring table		Hospital specialist	GP			Hospital specialist
			During treatment			
Test	Indication	Pre-treatment baseline	Until dose stable for 6 weeks	Thereafter	Only where indicated by specialist **	Annual review
FBC	Baseline assessment, dose adjustment	✓	Every 2 weeks	Every month	Every 3 months **	As part of annual review or as clinically indicated
LFTs						
U&Es, eGFR						
Urinalysis	To assess for renal disease (proteinuria) or infection					
ESR/CRP	Disease Activity Scoring	✓	Every 3 months			
Height & weight	Baseline assessment	✓	Not routinely required			If clinically indicated
Blood pressure	Baseline assessment, respiratory and TB screening	If clinically indicated				
Chest x-ray						
PFTs, TB screening if indicated						
Ask about oral ulceration, sore throat, unexplained rash or unusual bruising/bleeding		✓	At every consultation			✓

If a further DMARD is added as combination therapy, or the dose is increased, the initial starting schedule should be reinstated.
There may be clinical circumstances where the frequency of monitoring may vary and this should be specified by the initiating specialist
** Patients who have been stable for 12 months can be considered for reduced frequency monitoring on an individual patient basis as recommended by specialist at review or by specialist communication

GP responsibilities

- Prescribe Penicillamine.
- Arrange and record ongoing monitoring as advised by specialist (see monitoring table), ensuring practice systems are in place to recall patients for monitoring blood tests.
- Follow-up any non-compliance with the monitoring schedule. The risks of cessation of therapy versus risks of toxicity should be considered. Contact the specialist if treatment is stopped or further advice required.
- Report any adverse drug reactions to initiating specialist and the usual bodies (eg. MHRA/CHM).
- Ensure no drug interactions with other medicines.
- Ask about unexplained rash, oral ulceration, sore throat or unusual bruising/bleeding at every consultation.

Withhold penicillamine and contact specialist if:

- WCC < 3.5 x 10^9/L
- Neutrophils < 1.6 x 10^9/L
- Unexplained eosinophilia > 0.5 x 10^9/L
- Platelets < 140 x 10^9/L
- **Urinalysis:** if proteinuria ++ and/or haematuria ++ or more, check MSSU: if infection present, treat appropriately. If no infection present, withhold penicillamine, check urine protein/creatinine ratio and discuss with specialist team.
- MCV > 105fL, (check B12 & folate & TFT)
- AST / ALT > 3 times the upper limit of normal (for results between 2 – 3 x ULN, continue penicillamine, repeat bloods and seek specialist advice). Minor elevations of AST/ALT are common
- If renal impairment develops
- Unexplained fall in serum albumin
- Oral ulceration / sore throat
- Unexplained rash / abnormal bruising.

Normal reference range may vary slightly between labs.
Results should be recorded in the patient's shared care monitoring record booklet (where in use).
Please note an unusual fall or rise or a consistent downward or upward trend in any value should prompt review of the patient and extra vigilance. Some patients may have abnormal baseline values, specialist will advise.

Adverse effects, precautions and contraindications

Proteinuria. Transient mild proteinuria is common (see urinalysis in Table above).
Blood disorders: thrombocytopenia, neutropenia, agranulocytosis, aplastic anaemia, haemolytic anaemia, leucopenia. GPs should be alert to any unexplained bruising or bleeding.
Nausea, anorexia, fever and rash may occur early in therapy especially when full doses are given from the start. Antihistamines, steroid cover or temporary reduction of dose will control urticarial reactions. Anti-emetics may also be required.
Loss / alteration of taste can occur but occasionally settles spontaneously.
Stomatitis: if persistent or severe refer to specialist.
Pyridoxine daily may be given to patients on long term therapy (if specialist advises), especially if they are on a restricted diet, since penicillamine increases the requirement for this vitamin.
Pregnancy. Penicillamine should not be administered to patients who are pregnant and therapy should be stopped when pregnancy is confirmed or suspected, unless considered absolutely essential by the specialist.
Breastfeeding. Women being treated with penicillamine should seek specialist advice.
Contraindications include:

- Systemic lupus erythematosus
- Moderate or severe renal impairment.

NOTE: allergy to penicillin is NOT a contraindication to penicillamine therapy.

Common drug interactions

Antacids decrease absorption of penicillamine (do not give within 2 hours).
Clozapine: penicillamine may potentiate the blood dyscrasias seen with clozapine.
Digoxin: digoxin levels can be reduced by concurrent use of penicillamine (do not give within 2 hours).
NSAIDs: combinations with increased risk for nephrotoxicity: eg. NSAIDs & aspirin (<300mg) can be prescribed concomitantly on specialist advice. Additional monitoring may be required.
Sodium aurothiomalate: concomitant use not recommended.
Iron: decreases absorption of penicillamine (do not give within 2 hours).
Zinc: decreases absorption of penicillamine.

Communication

For any queries relating to this patient's treatment with penicillamine, please contact the specialist named at the top of this document.

This information is not inclusive of all prescribing information and potential adverse effects.
Please refer to full prescribing data in the SPC or the BNF

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