SHARED CARE GUIDELINE

Drug: d-Penicillamine

Introduction	**Indications**: Licensed: Severe active rheumatoid arthritis, including juvenile forms, Wilson's disease (hepatolenticular degeneration) in adults and children (0 to 18 years). **Background:** Penicillamine is an effective chelator of copper, zinc, mercury and lead and promotes their excretion in urine. It is effective in diseases caused by toxic levels of these metals e.g. Wilson's disease. Penicillamine has been shown to be effective in the treatment of rheumatoid arthritis not adequately controlled by NSAID therapy, an effect probably not associated with its metal binding properties. [2,3] **Definitions:** Stable dose – the dose will be titrated to achieve efficacy at the lowest dose. Once efficacy achieved and provided the patient can tolerate the dose, this will be termed "stable dose" Stable bloods – results of blood tests remain below the "alert" thresholds as set by national guidelines and have stayed at similar levels for at least two consecutive tests. N.B. The patient can continue to have active disease despite being on a stable dose or having stable bloods, so the "patient" is not referred to as "stable"
Form	d-Penicillamine tablets 125mg[2] d-Penicillamine tablets 250mg[3]
Dose and Administration	Typical regimen, oral route of administration: 125-250mg/day increasing by 125mg every 4-12 weeks to 500-750mg/day. Maximum dose is 1.5g/day.
Secondary Care Responsibilities	• Confirm the diagnosis. • Check for absence of pregnancy in women of child-bearing age and ensure the patient understands the importance of contraception. • Discuss the benefits and side effects of treatment with the patient. Ensure that the patient understands which warning signs and symptoms to report. • Perform pre-treatment screening: FBC, U&Es, creatinine/ eGFR and urinary dipstick for protein. • Ensure that the patient understands not to expect improvement for at least 6-12 weeks after treatment is initiated. • Provide the patient with prescriptions for penicillamine until on stable dose and they have undergone monthly monitoring for a minimum of 3 months. • Provide the patient with a monitoring and dosage record booklet and ensure that the patient knows where and when to attend for monitoring. Encourage the patient to take responsibility for ensuring that results of tests are entered in the monitoring booklet. • Make arrangements for shared care with the patient's GP. • Review the patient regularly to monitor the patient's response to therapy. • Advise the GP on frequency of monitoring, management of any dose adjustments and when to stop treatment. • Ensure that clear backup arrangements exist for GPs to obtain advice.
Primary Care Responsibilities	• Provide the patient with prescriptions for penicillamine once on stable dose and having undergone monthly monitoring for a minimum of 3 months. Monitor at the recommended frequencies (see MONITORING below) and ensure that test results are recorded in the monitoring booklet. • Report any adverse events to the consultant or specialist nurse and stop treatment on their advice or immediately if an urgent need arises. (See MONITORING below). • Report any worsening of control of the condition to the consultant or the specialist nurse. • Follow recommended immunisation programme.
Common Drug Interactions	• Antacids, iron or zinc supplements: absorption is reduced if taken within 2 hours • Antipsychotic drugs: may increase risk of agranulocytosis • Digoxin: Levels of digoxin can be reduced by concurrent use of Penicillamine • Levodopa Not an exhaustive list, please refer to current BNF and SPC for further drug interactions
Cautions	• Renal impairment

	• Elderly • Patients allergic to penicillin • Patients who have shown a sensitivity to gold • Oral iron, digoxin or antacids not to be given within 2 hours of penicillamine • Concomitant use of NSAIDs and other nephrotoxic drugs may increase the risk of renal damage
Contraindications	• Hypersensitivity to penicillamine or any of the ingredients • Moderate to severe renal insufficiency • Systemic lupus erythematosus History of penicillamine induced agranulocytosis, aplastic anaemia or severe thrombocytopenia • Co-prescribing of gold salts, chloroquine, clozapine, hydroxychloroquine, or immunosuppressive drugs • Pregnancy & lactation should be avoided in rheumatology patients.
This guidance does not replace the SPC's, which should be read in conjunction with this guidance	

MONITORING AND ADVERSE EFFECTS

Treatment Status	FBC	U+Es	Creatinine/ eGFR	ESR or CRP	Urinalysis
Initial monitoring (first 2 months)	Every 2 weeks	Every 2 weeks	Every 2 weeks	Every 3 months (for RA only)	Weekly
After 2 months	Monthly	Monthly	Monthly	Every 3 months (for RA only)	Monthly

***Please note:** If the patient is also being treated with **leflunomide**, increased monthly monitoring is required, as specified in the leflunomide shared care guidance. (Where other biologic/DMARDs are used in combination with penicillamine, the standard monitoring requirements, as outlined above, continue to apply).

As per secondary care responsibilities, for clarity the frequency of monitoring should be specified in the initial shared care request.

- Patients to be asked about the presence of rash or oral ulceration at each visit
- If 2+ proteinuria or more check MSSU. If infection present treat appropriately.

In the event of the following adverse laboratory results or patient reported symptoms, withhold d-Penicillamine until discussed with specialist team and repeat the test after two weeks:

- WCC < 3.5 x 10^9/L or less than the lower limit of reference range as per lab
- Neutrophils < 1.6 x 10^9/L or less than the lower limit of reference range as per lab
- Platelets < 140 x 10^9/L or less than the lower limit of reference range as per lab
- If urinalysis sterile and 2+ proteinuria or more persisting on two consecutive occasions
- Severe or late onset rash. Late rashes are more serious than early ones
- Oral ulceration
- Abnormal bruising or severe sore throat. (Check FBC immediately)
- Haematuria – requires investigation

Other adverse reactions:

- Nausea – taking medication before bed may reduce nausea
- Alteration of taste. This may settle spontaneously.

This list is not exhaustive, please refer to SPCs and BNF

References

1. http://www.rheumatology.org.uk/includes/documents/cm_docs/2009/d/diseasemodifying_antirheumatic_drug_dmard_therapy.pdf
2. http://www.medicines.org.uk/emc/medicine/28212/SPC/Penicillamine+125mg+and+Pendramine+125mg+Tablets/
3. http://www.medicines.org.uk/emc/medicine/28211/SPC/Penicillamine+250mg+Tablets+and+Pendramine+250mg+Tablets/
4. BNF 66 September 2013-March 2014
5. http://cks.nice.org.uk/dmards#!scenariorecommendation:11

RELEVANT CONTACT LIST

Speciality	
Name and Title	Tel. No.

Appendix 1

Optional Shared Care Agreement form

Request by Specialist Clinician for the patient's GP to enter into a shared care agreement

PLEASE NOTE: The use of this form is not compulsory, but the same information must be communicated between the specialist service and primary care in advance of entering into a shared-care agreement.

Part 1 - To be signed by Consultant / Associate Specialist / Speciality Trainee or Specialist Nurse (who must be a prescriber)

Dear Doctor:	Click or tap here to enter text.
Name of Patient:	Click or tap here to enter text.
Address:	Click or tap here to enter text.
	Click or tap here to enter text.
	Click or tap here to enter text.
Date:	Click or tap to enter a date.
Patient NHS Number:	Click or tap here to enter text.
Patient Hospital Number:	Click or tap here to enter text.
Diagnosed Condition:	Click or tap here to enter text.

I request that you prescribe:

(1) Click or tap here to enter text.
(2) Click or tap here to enter text.
(3) Click or tap here to enter text.
(4) Click or tap here to enter text.

for the above patient in accordance with the LMMG shared care guideline(s) (Available on the LMMG website).

Last Prescription Issued:	Click or tap to enter a date.
Next Supply Due:	Click or tap to enter a date.
Date of last blood test (if applicable):	Click or tap to enter a date.
Date of next blood test (if applicable:	Click or tap to enter a date.
Frequency of blood test (if applicable:	Click or tap here to enter text.

I confirm that the patient has been stabilised and reviewed on the above regime in accordance with the Shared Care guideline.

If this is a Shared Care Agreement for a drug indication which is unlicensed or off label, I confirm that informed consent has been received from the patient.

I will accept referral for reassessment at your request. The medical staff of the department are available if required to give you advice.

Details of Specialist Clinicians

Name:	Click or tap here to enter text.
Date:	Click or tap to enter a date.
Position:	Choose an item.
Signature:	Click or tap here to enter text.

(An email from the specialist clinician will be taken as the authorised signature)
In all cases, please also provide the name and contact details of the Consultant.

When the request for shared care is made by a Specialist Nurse, it is the supervising consultant who takes medicolegal responsibility for the agreement.

Consultant	Click or tap here to enter text.

Contact Details	
Telephone Number	Click or tap here to enter text.
Extension	Click or tap here to enter text.
Email Address	Click or tap here to enter text.

Part 2 - To be completed by Primary Care Clinician (GP)

I agree to prescribe and monitor Click or tap here to enter text. for the above patient in accordance with the LMMG shared care guideline(s) commencing from the date of next supply / monitoring (as stated in Part 1 of the agreement form).

Name:	Click or tap here to enter text.
Date:	Click or tap to enter a date.
Signature:	Click or tap here to enter text.

*Please sign and return a copy **within 14 calendar days** to the address above* **OR**

If you **do not** agree to prescribe, please sign below and provide any supporting information as appropriate:

I **DO NOT** agree to enter in to a shared care agreement on this occasion.

Name:	Click or tap here to enter text.
Date:	Click or tap to enter a date.
Signature:	Click or tap here to enter text.
Further information:	Click or tap here to enter text.