SHARED CARE GUIDELINE

Lancashire & South Cumbria Medicines Management Group

Drug: Azathioprine and Mercaptopurine

Introduction	**Azathioprine Indications**: Licensed: Rheumatoid arthritis, systemic lupus erythematosus, dermatomyositis and polymyositis, autoimmune and chronic active hepatitis, pemphigus vulgaris, polyarteritis nodosa, ITP and auto-immune haemolytic anaemia Unlicensed: Polyarteritis and giant cell arteritis, psoriasis and psoriatic arthritis, severe eczema and other autoimmune skin conditions, inflammatory bowel diseases including ulcerative colitis and Crohn's disease, generalised myasthenia gravis. **Mercaptopurine Indications**: Unlicensed: Inflammatory bowel diseases. **N.B. Please see the respective SPCs for detailed information on licensed indications on the branded and generic products** **Background:** Azathioprine is used as an immunosuppressant either alone or in combination with corticosteroids when it produces a steroid-sparing effect. It is rapidly converted in vivo to mercaptopurine, a purine analogue that inhibits DNA synthesis and hence the proliferation of cells involved in the immune response. Clinical response may not be evident before 6 weeks and may take up to 3 months.[1] **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	Azathioprine tablets: 25mg[2], 50mg[3] Mercaptopurine tablets: 50mg[4]
Dose & Administration	**Azathioprine** 1mg/kg/day increasing to 2-3mg/kg/day after 4-6 weeks adjusted within these limits depending on clinical response and haematological tolerance. **Myasthenia Gravis** - Initially 0.5–1 mg/kg daily, then increased to 2–2.5 mg/kg daily, dose is increased over 3–4 weeks, azathioprine is usually started at the same time as the corticosteroid, allowing a lower maintenance dose of the steroid to be used. **Mercaptopurine** 1-1.5mg/kg/day. Mercaptopurine may be taken with food or on an empty stomach, but patients should standardise the method of administration. The dose should not be taken with milk or dairy products. Mercaptopurine should be taken at least 1 hour before or 2 hours after milk or dairy products**.**

Secondary Care Responsibilities	• Confirm the diagnosis. • Exclude serious infections. • 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[1]: weight, height, BP, albumin, FBC, LFTs, calculated GFR and TPMT assay. • Patients should be assessed for co-morbidities, including evaluation for respiratory disease and screening for occult viral infection • Ensure that the patient understands not to expect improvement from the treatment straight away. • Provide the patient with prescriptions for azathioprine or mercaptopurine until on stable dose and undergoing 3 monthly monitoring. • Provide the patient with a monitoring and dosage record booklet and ensure that the patient knows when and where 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 azathioprine or mercaptopurine tablets once on stable dose and undergoing 3 monthly monitoring • 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
Immunisation	• Annual flu vaccination is recommended. • Pneumococcal vaccination is recommended • In patients exposed to chicken pox or shingles, if required, passive immunisation should be considered for varicella. Refer to Green book: Varicella: the green book, chapter 34 - Publications - GOV.UK • Live vaccines should be avoided, in particular BCG, smallpox and yellow fever unless specialist advice has been sought. Note: shingles can be given as a precaution in patients on low doses: (azathioprine <3.0 mg/kg/day, or mercaptopurine <1.5 mg/kg/day; these are not considered sufficiently immunosuppressive and are not contraindications for administration of zoster vaccine.
Common Drug Interactions	• Allopurinol: azathioprine and mercaptopurine should be **reduced to 25% of the original dose or avoided completely** • Co-trimoxazole and trimethoprim: **AVOID** concomitant use - increased risk of serious haematological toxicity • Warfarin: azathioprine and mercaptopurine may reduce the anticoagulant effect of warfarin • ACE inhibitors: increased risk of anaemia and leucopenia • Febuxostat: AVOID concomitant use • Aminosalicylates: increased risk of leucopenia • Ribavirin This list is not exhaustive; please refer to SPCs and BNF.

Cautions	• Thiopurine methyl transferase (TPMT) deficiency - homozygous state: may be associated with delayed haematological toxicity including bone marrow toxicity. It is linked to serious adverse events, although symptoms may not be evident until 6 months after commencing treatment. Minor unrecognised infections or drug interaction, particularly when co-prescribed with aminosalicylates, such as sulfasalazine, mesalazine or olsalazine, may precipitate fatal toxicity. Azathioprine should be prescribed with caution and at a reduced dosage in these patients. • Renal and/or hepatic insufficiency and frail elderly: dosages used should be at the lower end of the range. • Patients prescribed azathioprine or mercaptopurine should be advised to limit exposure to sunlight by wearing protective clothing and using high factor sunscreens. • For further cautions please refer to the SPC and BNF
Contraindications	• *Severe infection* • *Severely impaired hepatic or bone marrow function* • *Pancreatitis* • *Lactose intolerance or hypersensitivity to active ingredients or excipients* • *Some live vaccines while on treatment and for three months following treatment – see above in immunisation*
Pregnancy and Breastfeeding	• *According to the BSR and BHPR guideline on prescribing drugs in pregnancy and breastfeeding, azathioprine is compatible throughout pregnancy at ≤2 mg/kg/day and is compatible with breastfeeding. It is also considered to be compatible with paternal exposure.*
This guidance does not replace the SPC's, which should be read in conjunction with this guidance.	

MONITORING AND ADVERSE EFFECTS

Treatment Status	FBC Inc Platelet Count	LFT	Albumin	Creatinine/ calculated GFR	ESR or CRP
Initial monitoring until on stable dose for 6 weeks	Every 2 weeks (Every week for MG*)	Every 2 weeks (Every week for MG*)	Every 2 weeks (Every week for MG*)	Every 2 weeks (Every week for MG*)	Every 3 months (for RA** only)
For next 3 months	Every month	Every month	Every month	Every month	
Thereafter (If the patients have normal baseline TMPT levels)	Every 3 months	Every 3 months	Every 3 months	Every 3 months	

* Myasthenia gravis ** Rheumatoid arthritis

- The patient should be asked about the presence of rash, oral ulceration, severe sore throat and abnormal bruising, at each visit.
- Azathioprine or mercaptopurine should be stopped if patient is systemically unwell with significant infection. However, in SLE patients, check FBC and where possible discuss with the rheumatologist before stopping as SLE flair can sometimes mimic infection, otherwise default to stopping drug.
- Dose related increases in MCV commonly occur. When MCV >105fL, check thyroid function, B12 and folate. Treat any underlying abnormality but if results are normal discuss with specialist team for further advice.

In the event of the following adverse laboratory results or patient reported symptoms, withhold azathioprine or mercaptopurine until urgently discussed with specialist team and consider interruption in treatment:

- 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
- Mean cell volume > 105 fL
- Creatinine increase > 30% over 12 months and/or calculated GFR < 60 mL/min
- Unexplained eosinophilia > 0.5 x 10^9/L
- ALT and/or AST > 100 U/L
- Unexplained reduction in albumin < 30 g/L
- Rash or oral ulceration
- Abnormal bruising or **severe** sore throat (monitor FBC)
- Patient is systemically unwell with significant infection – see above

As well as responding to absolute values in laboratory tests, it is also relevant to observe trends in results (e.g. gradual decreases in white blood cells or albumin, or increasing liver enzymes). If urgent clinical abnormalities arise emergency access to specialist advice should be sought.

Other adverse reactions:

- Decreased resistance to infection
- Benign and malignant neoplasms
- Nausea, anorexia, leukopenia, pancreatitis, alopecia, hepatic dysfunction

This list is not exhaustive; please refer to SPCs and BNF.

References

1. BSR/BHPR Non-Biologic DMARD Guidelines 2017.
2. http://www.medicines.org.uk/emc/medicine/26877/SPC/Azathioprine+25+mg+film-coated+tablets/
3. http://www.medicines.org.uk/emc/medicine/26876/SPC/Azathioprine+50+mg+film-coated+tablets/
4. http://www.medicines.org.uk/emc/medicine/24688/SPC/Mercaptopurine+50+mg+tablets/
5. NICE CKS DMARDs https://cks.nice.org.uk/dmards#!scenario:1 accessed 05/09/2017
6. Van der Woulde et al. The Second European Evidenced-Based Consensus on Reproduction and Pregnancy in Inflammatory Bowel Disease. ***Journal of Crohn's and Colitis***, Volume 9, Issue 2, 1 February 2015, Pages 107–124

RELEVANT CONTACT LIST

Speciality	
Name and Title	Tel. No.

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 into 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.