Southern Derbyshire
Shared Care Pathology Guidelines

Gout in Adults

Purpose of Guideline
This guideline covers the management of Gout in Primary Care and interface with Secondary Care. It does not include Tumour Lysis Syndrome, which is managed within Oncology.

When should serum urate be measured and what level is normal?
The upper limit of normal for the serum urate reference range is 417 µmol/L in males and 339 µmol/L in females.

In a patient with gout, the optimum serum urate level is < 300 µmol/L*

*In the long term (a few years later) with adequate control of acute attacks, consider relaxing the target serum urate to <360 µmol/L) in light of the risk of neurodegenerative disorder associated with very low serum urate levels.

Measuring urate during an acute attack of possible gout
Serum urate falls during an acute attack of gout, resulting in 30-40% of patients having a normal level at this time. It is therefore recommended to use clinical judgement and consider aspirating joint fluid to make the diagnosis at this stage. Serum urate should be measured once the acute flare has settled.

How should an asymptomatic patient with a high serum urate be managed?
Only 1 in 20 patients with a high serum urate will develop gout so a high urate does not need treating per se. However, the following factors should be considered and addressed where appropriate:

- Lifestyle: intake of alcohol, red meat, sea food, sugar sweetened soft drinks
- Medication: diuretics (thiazide, loop), cyclosporin, cytotoxic drugs, tacrolimus
- Genetic enzyme defects
- High urate is seen in association with the ‘Metabolic Syndrome’ so consider monitoring for dyslipidaemia, type 2 diabetes and renal disease, and management of cardiovascular risk factors

How should an acute attack of gout be managed?
1. Consider and investigate alternative diagnoses, especially septic arthritis
2. If septic arthritis is considered, DO NOT start antibiotics, but refer urgently to orthopaedics or rheumatology for joint aspiration and gram stain and culture of fluid
3. Suppress pain and inflammation with one of the following:
   - Fast acting NSAIDS unless contraindicated
     - Use PPI in high risk patients
   - Colchicine 500 µg bd to qds (NB: do not use higher doses because of diarrhoea). Statins should be stopped temporarily
   - Corticosteroids: oral, i.m. or intra-articular if intolerant to NSAIDS or colchicine or if gout is refractory

![DO NOT START** or STOP allopurinol (or other urate lowering therapies) during an attack](image)

(/** Generally allopurinol is not started during an acute attack although when required eg. in patients with frequent attacks, this can be done)

4. Adjunctive management includes:
   - Other analgesia, including opiates, if necessary
   - Rest, ice, bed cradle
   - If the patient taking diuretics, review whether an alternative agent is possible

5. Follow up at 4–6 weeks
   - Assess lifestyle factors
   - Assess gout activity / diagnosis
   - Check blood pressure
   - Check serum urate, renal function and HbA1C; consider lipids

**When should urate lowering therapy be offered?**

- Consider offering after 1st episode of gout, but especially if ≥ 2 attacks in a year
- Patients with tophi
- Renal insufficiency (care required – see below)
- Uric acid stones and gout
- If need to continue diuretics

**When and how should urate lowering therapy be started?**

Allopurinol is the standard first line option.

Febuxostat is second-line treatment if allopurinol is not tolerated or contraindicated. It is not recommended in patients with ischaemic heart disease, congestive cardiac failure or severe renal impairment.

Other agents may be initiated / recommended by secondary care.

- Aim to commence urate lowering therapy when the acute episode has settled, approximately 2 weeks later, as long-term urate lowering therapy is better discussed when the patient is not in pain
- To prevent precipitation of further attacks, consider co-prescribing colchicine (500 µg od or bd) for up to 6 months, or if not tolerated NSAIDS (+/- PPI) for 6 weeks
• Start allopurinol at 50–100 mg/day; increase every 3–4 weeks by 50–100 mg until therapeutic target of < 300 µmol/L serum urate is reached
  o The risk of a serious hypersensitivity reaction to allopurinol is uncommon, around 1:300, with a greater risk in renal insufficiency. Hence in renal impairment start cautiously at 50 mg/day or even less frequently.
  o Check for potential drug interactions, especially ACE inhibitors, azathioprine, cyclosporin and warfarin.
  o In normal renal function the dose of allopurinol is 100-900 mg per day. Doses above 300 mg should be given in divided doses.
    The maximum dosage of allopurinol in renal impairment is detailed (see table). However, if disease control is not gained, a subsequent gradual increase in dose above these results may be required – seek specialist advice.
  o In patient undergoing renal replacement therapies (CAPD/HD) – dose as in GFR <10 mL/min

<table>
<thead>
<tr>
<th>GFR (ml/min/1.73 m²)</th>
<th>Starting dose of allopurinol (evidenced DTB 2018)</th>
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<tbody>
<tr>
<td>61-90</td>
<td>100mg daily</td>
</tr>
<tr>
<td>46-60</td>
<td>50 / 100mg alternate</td>
</tr>
<tr>
<td>31-45</td>
<td>50mg daily</td>
</tr>
<tr>
<td>16-39</td>
<td>50mg every 2 days</td>
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<tr>
<td>5-15</td>
<td>50mg twice weekly</td>
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<table>
<thead>
<tr>
<th>GFR (ml/min/1.73 m²)</th>
<th>Maximum dose of allopurinol</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-50</td>
<td>200-300 mg per day</td>
</tr>
<tr>
<td>10-20</td>
<td>100-200 mg per day</td>
</tr>
<tr>
<td>&lt;10</td>
<td>100 mg daily or 100 mg alternate days</td>
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• Address risk factors in all patients
  o Optimize weight, increase exercise, modify diet, reduce alcohol intake, avoid dehydration
  o Manage cardiovascular risk

**What is best management if standard care fails?**
Consider referral to secondary care for confirmation of the diagnosis and further management if the disease is refractory or there is drug intolerance.

**Are there other times when secondary care is recommended?**
Consider referring to the appropriate specialty in the following situations:
• If the diagnosis is uncertain
• Gout in a young person (<25 yrs) or premenopausal female, when a genetic enzyme defect needs to be considered
• Refractory acute attack
• Complications, e.g. stones, nephropathy or troublesome tophi
Contacts
Duty Biochemist (Monday-Friday) 01332 789383 (8am to 7pm)
On Call Consultant Biochemist (24/7) Via RDH switchboard, 01332 340131
Rheumatology Advice (9-5, Monday-Friday) Via RDH switchboard, 01332 340131
Renal Advice (9-5, Monday-Friday) Via RDH switchboard, 01332 340131

References

[https://renaldrugsdatabase.com](https://renaldrugsdatabase.com)

Patient information
Written information and patient support can be found via the UK Gout Society. See [www.ukgoutsoceity.org](http://www.ukgoutsoceity.org)

Authors: Dr Louisa Badcock, Dr Mark Livingston, May 2012

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<td>Dr Louisa Badcock, Dr Penny Blackwell, Mrs H Seddon</td>
<td>Jun 2014</td>
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<td>Dr Louisa Badcock, Dr Penny Blackwell, Mrs H Seddon</td>
<td>Feb 2017</td>
<td>28th Feb 2019</td>
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<tr>
<td>Dr Michelle Hui, Dr Louisa Badcock, Rheumatology team, Renal team, Slak Dhadli (Medicines Management)</td>
<td>Dec 2017</td>
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