CLINICAL AUDIT

Lowering **serum urate levels** in patients with **gout**

Valid to April 2022

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Background

Gout, caused by increased levels of urate in the blood (hyperuricaemia), is the most common type of inflammatory arthritis. Acute flares are the first symptom of gout, i.e. self-limiting, inflammatory attacks of arthritis, usually in the metatarsophalangeal joint. In the presence of prolonged hyperuricaemia some patients will develop chronic tophaceous disease and erosive arthritis. Hyperuricaemia occurs due to a combination of genetic and environmental factors. As the level of serum urate rises, the risk of gout increases. Hyperuricaemia is also associated with chronic kidney disease, hypertension, dyslipidaemia, insulin resistance and diabetes. In addition, patients with hyperuricaemia have an increased risk of developing kidney stones.

The symptoms of gout are caused by monosodium urate crystals forming in the joints and other tissues resulting in an inflammatory response. This deposition occurs when the serum is saturated with urate, at concentrations higher than 0.42 mmol/L. When serum urate is lowered to < 0.36mmol/L, urate crystals dissolve. A more stringent target of < 0.30 mmol/L is recommended for patients with severe gout. Treating to target reduces the risk of acute flares, and tophi shrink and may eventually disappear. Long term maintenance of serum urate at levels below the treatment target prevents further urate crystal formation and the development of complications.

Allopurinol is the first-line urate-lowering medicine and initiation should be discussed with all patients with gout, as soon as a diagnosis has been established. The target for allopurinol treatment is a serum urate level < 0.36 mmol/L. The dose of allopurinol must be titrated to achieve the treatment target and serum urate testing should be performed at each dose adjustment. Once the patient has reached the treatment target, serum urate levels should ideally be checked at least once annually.

When allopurinol is initiated, "start low and go slow". A lower starting dose and lower dose increments are recommended in patients with renal impairment.

For further information, see "Managing gout in primary care – Part 2: Controlling gout with long-term medicines" (2018). **www.bpac.org.nz/2018/gout-part2.aspx**

Audit Plan

Summary

This audit identifies patients with gout who are taking allopurinol and determines if they have been treated to target.

- Allopurinol doses should be titrated to achieve a target serum urate < 0.36 mmol/L
- Serum urate levels should be tested at least annually, once the serum urate target has been reached, as part of routine patient monitoring

Audit standards

Ideally all patients with gout should be treated to target, but in practice there are many reasons why this is not achievable, e.g. some patients who continue to have serum urate levels slightly above target despite their maximum tolerated dose of allopurinol may choose to persist with allopurinol alone, rather than taking an additional medicine, if flares are controlled.

A reasonable audit standard is for 80% of the patient sample to be treated to target, i.e. serum urate < 0.36 mmol/L and serum urate test within the past 12 months. This target may be lower in the first cycle of the audit, with an increase in the number of patients who have reached the target urate level after the second audit cycle.

Data

Identifying eligible patients

All patients who have a diagnosis of gout and have been treated with allopurinol for 12 months or more are eligible for this audit.

You will need to have a system in place that allows you to identify eligible patients. Many practices will be able to identify patients by running a 'query' through their PMS system to find all patients taking allopurinol.

Sample size

The number of eligible patients will vary according to your practice demographic. A sample size of 30 patients is sufficient for the purposes of this audit.

Criteria for a positive outcome

The patient has a diagnosis of gout and is being treated with allopurinol, and the patient notes indicate that the target serum urate of < 0.36 mmol/L has been reached and the serum urate level has been tested within the past 12 months.

Data analysis

Use the data sheet to record your data. Calculate the percentage of your patients currently 'at target' by taking the number of patients who, in the last twelve months, had a serum urate result ≤ 0.36 mmol/L and dividing it by the number of patients audited.

Optional: record the patient's serum urate level to assess how far from target they are.

Identifying opportunities for Audit of Medical Practice

The first step to improving medical practice is to identify the criteria where gaps exist between expected and actual performance and then to decide how to change practice.

Once a set of priorities for change have been decided on, an action plan should be developed to implement any changes.

Taking action

It may be useful to consider the following points when developing a plan for action (RNZCGP 2002).

Problem solving process

- What is the problem or underlying problem(s)?
- Change it to an aim
- What are the solutions or options?
- What are the barriers?
- How can you overcome them?

Overcoming barriers to promote change

- Identifying barriers can provide a basis for change
- What is achievable – find out what the external pressures on the practice are and discuss ways of dealing with them in the practice setting
- Identify the barriers
- Develop a priority list
- Choose one or two achievable goals

Effective interventions

- No single strategy or intervention is more effective than another, and sometimes a variety of methods are needed to bring about lasting change
- Interventions should be directed at existing barriers or problems, knowledge, skills and attitudes, as well as performance and behaviour

Review

Monitoring change and progress

It is important to review the action plan developed previously at regular intervals. It may be helpful to review the following questions:

- Is the process working?
- Are the goals for improvement being achieved?
- Are the goals still appropriate?
- Do you need to develop new tools to achieve the goals you have set?

Following the completion of the first cycle, it is recommended that the doctor completes the first part of the Audit of Medical Practice summary sheet (Appendix 1).

Undertaking a second cycle

In addition to regular reviews of progress with the practice team, a second audit cycle should be completed in order to quantify progress on closing the gaps in performance.

It is recommended that the second cycle be completed within 12 months of completing the first cycle. The second cycle should begin at the data collection stage. Following the completion of the second cycle it is recommended that practices complete the remainder of the Audit of Medical Practice summary sheet.

The Royal New Zealand College of General Practitioners

Claiming MOPS credits

This audit has been endorsed by the RNZCGP as an Audit of Medical Practice activity (previously known as Continuous Quality Improvement – CQI) for allocation of MOPS credits; 10 credits for a first cycle and 10 credits for a second cycle. General practitioners taking part in this audit can claim credits in accordance with the current MOPS programme.

To claim points go to the RNZCGP website: **www.rnzcgp.org.nz**

Record your completion of the audit on the MOPS Online credit summary, under the Audit of Medical Practice section. From the drop down menu, select the audit from the list or select "Approved practice/PHO audit" and record the audit name in "Notes", the audit date and 10 credits.

General practitioners are encouraged to discuss the outcomes of the audit with their peer group or practice.

As the RNZCGP frequently audit claims you should retain the following documentation, in order to provide adequate evidence of participation in this audit:

1. A summary of the data collected
2. An Audit of Medical Practice (CQI) Activity summary sheet (included as Appendix 1).

The Royal New Zealand College of General Practitioners
Te Whare Tohu Rata o Aotearoa
Endorsed CPD Activity

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www.bpac.org.nz/audits

Data sheet – cycle 1

Lowering serum urate levels in patients with gout

Patient prescribed allopurinol for ≥ 12 months	Last recorded serum urate level ≤ 0.36 mmol/L	Optional: record serum urate level	Recorded serum urate level within the past 12 months
	Yes/No		Yes/No
1			
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30			
Results:	____ ÷ ____ × 100 Total "Yes" No. of patients = ____ %		____ ÷ ____ × 100 Total "Yes" No. of patients = ____ %

Please retain this sheet for your records to provide evidence of participation in this audit.

Data sheet – cycle 2

Lowering serum urate levels in patients with gout

Patient prescribed allopurinol for ≥ 12 months	Last recorded serum urate level ≤ 0.36 mmol/L	Optional: record serum urate level	Recorded serum urate level within the past 12 months
	Yes/No		Yes/No
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Results:	____ (Total "Yes") ÷ ____ (No. of patients) × 100 = ____ %		____ (Total "Yes") ÷ ____ (No. of patients) × 100 = ____ %

Please retain this sheet for your records to provide evidence of participation in this audit.

APPENDIX 1

SUMMARY SHEET
Audit of medical practice (CQI activity)

Topic:
Lowering serum urate levels in patients with gout

Date:

Activity designed by (name of organisation, if relevant):
Bpac^{nz}

Doctor's name:

Results discussed with peer group or colleagues?
☐ Yes ☐ No

Date:

FIRST CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected. (If the findings have any implications for health equity, please include this.)

ACTION: Describe how these improvements will be implemented.

MONITOR: Describe how well the process is working. When will you undertake a second cycle?

AUGUST 2016

SECOND CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected. (If the findings have any implications for health equity, please include this.)

ACTION: Describe how these improvements will be implemented.

MONITOR: Describe how well the process is working.

COMMENTS:

AUGUST 2016