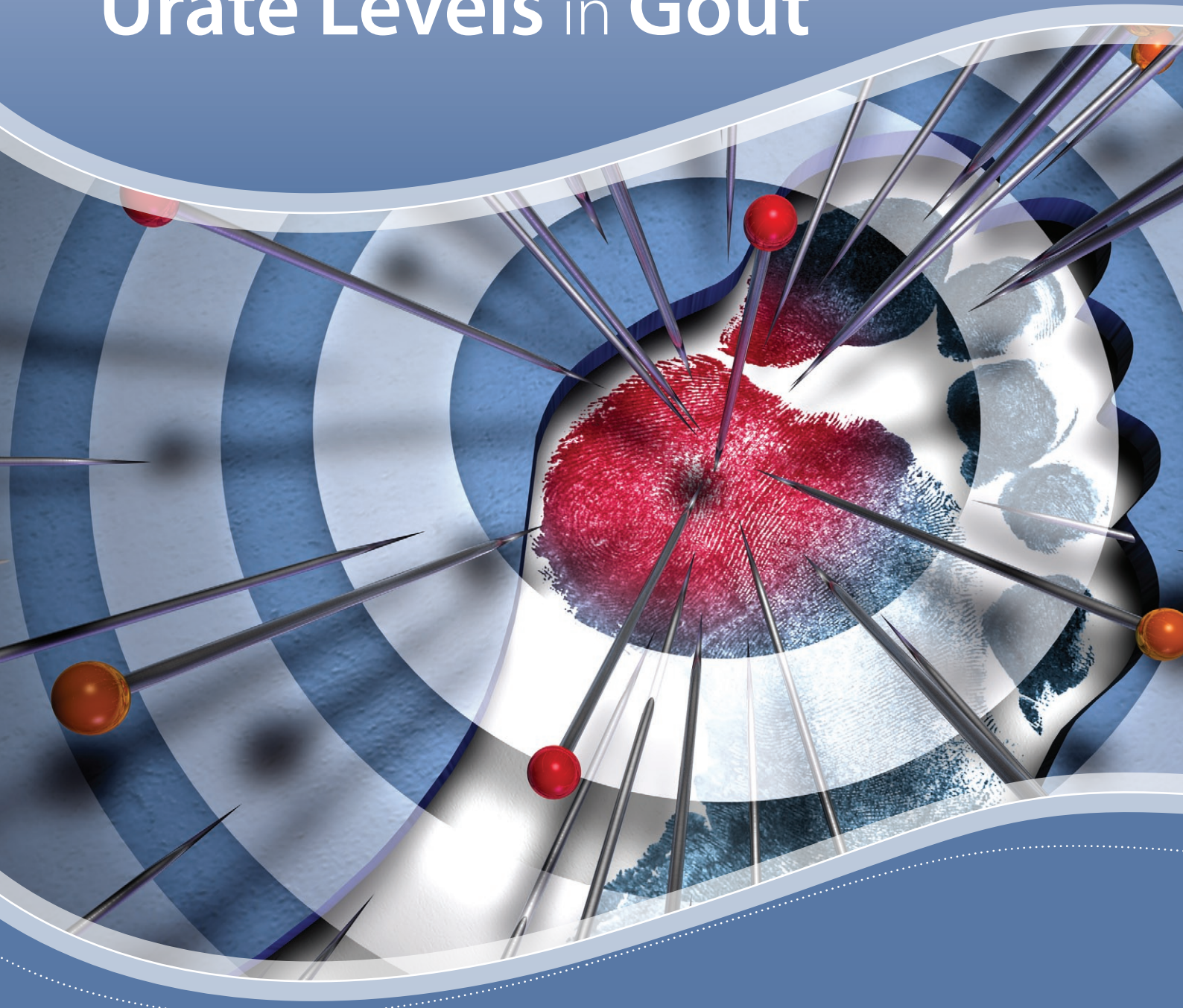
CLINICAL AUDIT

Lowering **Serum Urate Levels** in **Gout**



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Background

Gout, caused by increased levels of urate in the blood, is one of the most common types of inflammatory arthritis. Increased serum urate levels (hyperuricaemia) occur due to a combination of genetic and environmental factors, such as diet and ethnicity. As the level of urate rises, the risk of gout increases. Hyperuricaemia is also associated with kidney disease, hypertension, dyslipidaemia, insulin resistance and diabetes. The first symptomatic stage in a person with gout is recurrent, self-limiting acute inflammatory attacks of arthritis, usually in the metatarsophalangeal (MTP) joint. In the presence of prolonged hyperuricaemia some patients will develop chronic tophaceous disease and erosive arthritis. Renal complications can develop through urate nephropathy and uric acid 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, crystal deposits dissolve. This reduces the risk of acute flares, and tophi shrink and may eventually disappear. Long term maintenance of low serum urate concentrations prevents the re-accumulation of urate crystals and the development of complications.

Allopurinol is the first-line urate-lowering medicine and should be considered, in combination with lifestyle changes and acute treatment, for patients with any of the following:

- Recurrent gout attacks (≥ 2 attacks/year)
- Tophi
- Renal impairment
- Changes characteristic of gout on x-ray

The aim of allopurinol treatment is to reduce the serum urate to ≤ 0.36 mmol/L. Serum urate should be regularly tested throughout the medicine-titration process and once the target is reached, should ideally be checked at least once annually.

When establishing a patient on allopurinol, "start low and go slow". In patients with normal renal function the usual starting dose is 100 mg, daily. This may be increased slowly, by 100 mg each month, until the target serum urate is reached. For most patients a dose of at least 300 mg daily will be needed to achieve this target. Some people may require up to 600 mg, daily, to achieve the target. During this period of titration the patient should have regular serum urate tests to assess their response to treatment, and to calculate the dose required to get the patient's serum urate to the target level.

 For dosing in patients with impaired renal function, see "An update on the management of gout", BPJ 51 (Mar, 2013).

Recommendations for this audit

Allopurinol treatment should be titrated to a target serum urate of ≤ 0.36 mmol/L.

Ongoing monitoring is required to check that the serum urate reaches and is maintained at the target level of ≤ 0.36 mmol/L.

 For further information, see: "An update on the management of gout", BPJ 51 (Mar, 2013).

Audit plan

Indicators

All patients within the practice that have gout and are being treated with allopurinol can be audited to see whether they have had the recommended urate testing and that they are being successfully treated to target.

Criteria for a positive outcome

The patient has a diagnosis of gout and is being treated with allopurinol, and the patient notes record that titration of the allopurinol dose has achieved the target serum urate of ≤ 0.36 mmol/L

Audit standards

Due to differences in patient population and desired patient outcomes in people with gout across New Zealand, this audit does not have a specified percentage achievement rate. Rather, at the end of the second audit cycle, the practitioner or practice should see an increase in the number of patients who have reached the target urate level compared with the first cycle. Practitioners are encouraged to set their own goal level, based on their patient population.

Data

Eligible people

All patients who have a diagnosis of gout and are currently being treated with allopurinol are eligible for this audit.

Identifying patients

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. We suggest you identify all patients who have a prescription for allopurinol.

Sample size

Number of eligible patients will vary according to your practice demographic. It would be optimal to identify 20 – 30 patients. If you identify more, take a random sample of 30 patients whose notes you will audit.

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 audited and dividing it by the number of patients who, in the last twelve months, had a result ≤ 0.36 mmol/L (a "Yes" result in the middle column of the data sheet).

The patient's allopurinol dose should also be recorded for comparison. This will highlight current doses in relation to current urate levels. Regular titration is an important process in achieving target levels ≤ 0.36 mmol/L.

Identifying opportunities for CQI

Taking action

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.

Decide on a set of priorities for change and develop an action plan to implement any changes.

It may be useful to consider the following points when developing a plan for action:

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

- 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 against the timeline at regular intervals. It may be helpful to consider 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 CQI activity summary sheet.

Undertaking a second cycle

In addition to regular reviews of progress, 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 doctors complete the remainder of the CQI activity summary sheet.

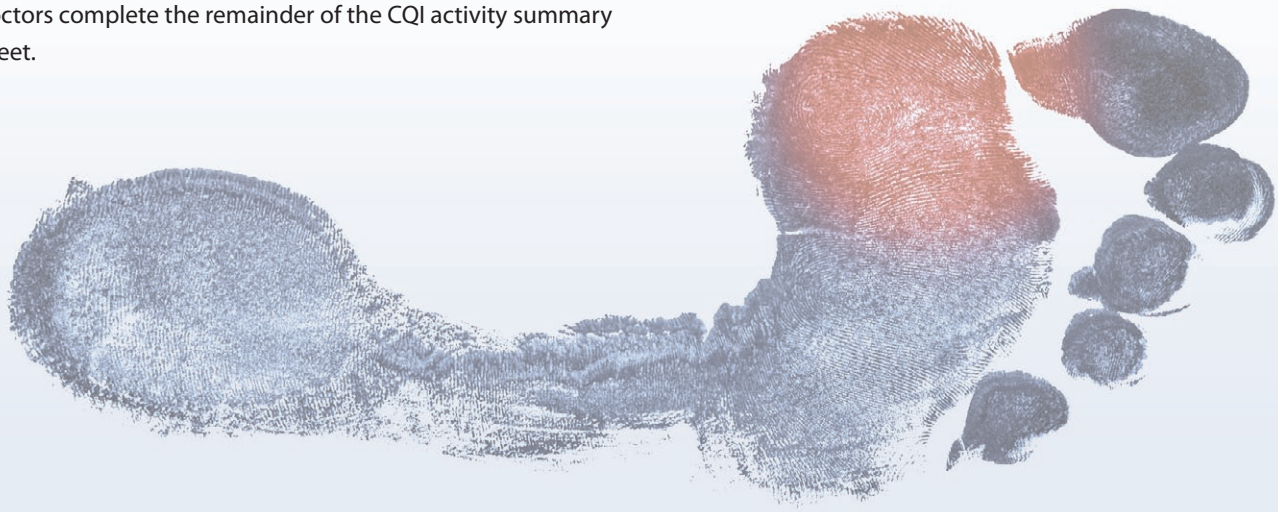
Claiming MOPS credits

This audit has been endorsed by the RNZCGP as a CQI Activity for allocation of MOPS credits. General practitioners taking part in this audit can claim credits in accordance with the current MOPS programme. This status will remain in place until **June 2018**.

To claim points for MOPS or CPD online please enter your credits on your web records. Go to the RNZCGP website **www.rnzcgp.org.nz** and claim your points on 'MOPS online' for vocationally registered doctors, or 'CPD online' for general registrants. Alternatively MOPS participants can indicate completion of the audit on the annual credit summary sheet which is available from the College on request.

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. A Continuous Quality Improvement (CQI) Activity summary sheet



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April 2013

Data sheet – cycle 1

Audit: Lowering serum urate levels in gout

	The patient has: 1. Gout 2. Is prescribed allopurinol **and** 3. A serum urate test that, at least once in the previous twelve months, indicates their serum urate is ≤ 0.36 mmol/L	
Patient	YES / NO	Record the patient's dose of allopurinol
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Please retain this sheet for your records to provide evidence of participation in this audit:

Data sheet – cycle 2

Audit: Lowering serum urate levels in gout

	The patient has: 1. Gout 2. Is prescribed allopurinol **and** 3. A serum urate test that, at least once in the previous twelve months, indicates their serum urate is ≤ 0.36 mmol/L	
Patient	YES / NO	Record the patient's dose of allopurinol
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Please retain this sheet for your records to provide evidence of participation in this audit:

RNZCGP Summary Sheet – CQI Activity

DOCTORS NAME	

The activity was designed by (please tick appropriate box):

- ☐ RNZCGP
- ☑ Organisation e.g. IPA/PHO/BPAC (name of organisation) bpac[nz]
- ☐ Individual (self)

TOPIC	**Lowering serum urate levels in gout**
Describe why you chose this topic (relevance, needs assessment etc):	

FIRST CYCLE

1. DATA	Information collected
Date of data collection:	
Please attach: ▪ A summary of data collected **or** ▪ If this is an organisation activity, attach a certificate of participation.	

2. CHECK	Describe any areas targeted for improvement as a result of the data collected.

3. ACTION	Describe how these improvements will be implemented.

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

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

SECOND CYCLE

1. DATA	Information collected
Date of data collection:	
Please attach: ▪ A summary of data collected **or** ▪ If this is an organisation activity, attach a certificate of participation.	

2. CHECK	Describe any areas targeted for improvement as a result of the data collected.

3. ACTION	Describe how these improvements will be implemented.

4. MONITOR	Describe how well the change process is working. Will you undertake another cycle?

COMMENTS	

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