National Council for Osteopathic Research

Gout in clinical practice – a brief summary

Key messages

- Gout can occur for a number of reasons including dietary, and the effect of chronic illness;

- Patients who have the suspicion of gout should always be referred to their doctor for further investigation;

- Diagnosis is usually made from a patient's clinical history and examination;

- Management is through a range of measures including medication and lifestyle advice;

- A range of prevention strategies have been documented in the literature including weight control and attention to diet especially excess sugar and foods containing purines. Smoking cessation has been advocated also as part of gout prevention.

What is gout?

Gout is a disorder of purine metabolism characterized by a raised uric acid level in the blood (hyperuricaemia) and the deposit of urate crystals in joints and other tissues (NICE Clinical Knowledge Summary, 2018).

Why can it occur?

High levels of uric acid can occur due to dietary intake (from some purine-rich foods *e.g.* red meat), stress, alcohol intake, certain medications (*e.g.* diuretics, aspirin), and due to a genetic

abnormality. In some instances gout can be associated with chronic illness *e.g.* vascular disease, diabetes, psoriasis, and kidney disease, but the appearance of gout may be an indication of the onset of certain disorders so patients presenting with gout should always be referred to their GP. Its natural history can be described as involving several stages as shown in Figure 1.

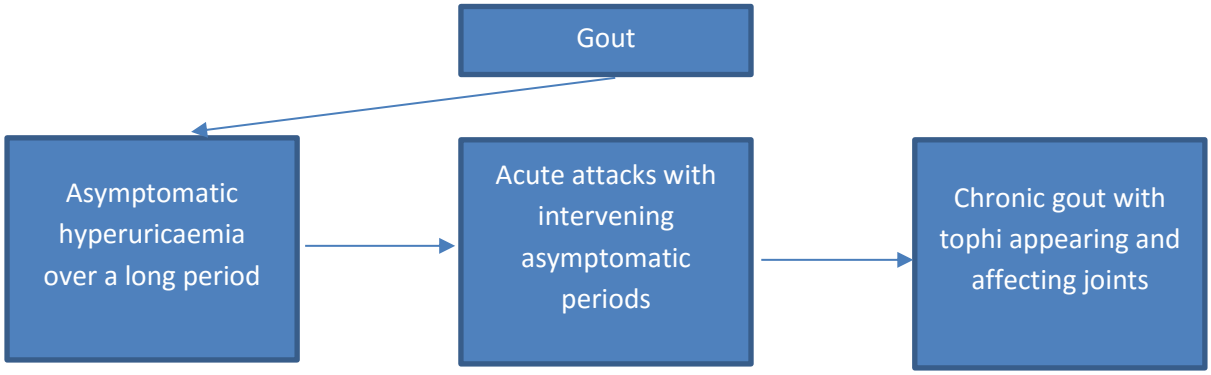

Figure 1. Stage sin the natural history of gout.

Signs, symptoms, and investigations for gout

Gout is characterised by significant joint pain, and swelling. This occurs most commonly in the joints of the feet but can affect other joints also. Gout is more common in men and older people: in the post-menopausal years the gender differences in disease incidence decreases. If gout occurs in patients below the age of 30 it can suggest a genetic cause, renal, or enzymatic disorder. Racial disparities have been identified also with African Americans experiencing a higher incidence of gout (Singh, 2013).

Diagnosis of gout is normally made from a patient's clinical history and examination. Synovial fluid analysis can be undertaken to demonstrate the presence of urate crystals: this is regarded as the "gold standard" for diagnosis but is often not practical in primary care settings.

Differential diagnosis of other joint disorders

There are other causes for joints to have a similar appearance to gout. These include pseudo gout (calcium pyrophosphate deposition disease), septic arthritis, trauma, osteoarthritis, bursitis, cellulitis, tenosynovitis, rheumatoid arthritis, reactive arthritis, haemochromatosis, and psoriatic arthritis.

Medical management and lifestyle advice

Paracetamol, NSAIDs, and oral colchicine are prescribed during the acute phase of an attack. Corticosteroids can be used if patients are unable to tolerate colchicine and NSAIDs. This pharmaceutical approach is accompanied by advice on self-management including rest, and trying to keep the joint in a cool environment. Use of an ice pack has been found to produce relief (Schlesinger *et al.*, 2002).

Gout prevention strategies

Although an acute attack of gout can resolve within one to two weeks, urate-lowering therapy (ULT) will be discussed if patients experience two or more attacks within one year. Additional considerations for the use of ULT include the presence of tophi (firm white nodules under translucent skin), renal impairment, the presence of kidney stones, the use of long-term diuretic medication, chronic gouty arthritis, or joint damage.

Medication used in urate lowering therapy includes Allopurinol and Febuxostat: allopurinol is the recommended first-line urate-lowering therapy (ULT), and febuxostat can be considered as second-line ULT if allopurinol is contraindicated or poorly tolerated in patients. In addition to the use of medication, lifestyle advice is given to include a range of considerations:

- Weight control but avoiding crash dieting (Lin *et al*., 2000);
- Avoiding excess sugar and foods rich in purines *e.g.* meats and seafood (Choi *et al*, 2004a);
- Following a diet low in added sugar and fat but high in vegetables and fibre;
- Taking regular exercise but avoiding intense exercise which might cause trauma to the joints;
- Stopping smoking;
- Consideration of Vitamin C supplements (Choi *et al*., 2009; Choi *et al*., 2010);
- Sensible alcohol consumption avoiding excessive intake and binge drinking. Beer has been found to confer a larger risk than spirits (Choi *et al*., 2004b);
- Ensuring adequate consumption of water especially if patients already have kidney stones

Complications of gout

Gout is known as an independent risk factor for a range of disorders including myocardial infarction and chronic kidney disease (Clarson *et al.,* 2014).

Further sources of information

Practical information about gout and its management is available from the UK Gout Society http://www.ukgoutsociety.org/. A helpful resource for both patients and clinicians is available at the Patient website https://patient.info/health/gout-leaflet.

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