

Gout

Gout is an inflammatory condition that is more common in men. 90% of cases occur in men. It is most common in men from 40 to 60. The most common site for an attack of gout is the joint at the base of the big toe. An acute attack of gout is very painful.

Why it happens? Gout is a condition that occurs when uric acid levels build up in joints. Uric acid is a waste product in the blood that is removed by the kidneys and eliminated in urine. The body's overproduction of uric acid or the kidney's inability to eliminate it efficiently can cause an excessive build-up, known as hyperuricemia. Over time this excess uric acid can deposit in the joints where it forms into sharp, uric acid crystals that lead to extreme pain and swelling in the affected joint. A gout attack occurs suddenly and may come and go over a period of several days.

What causes it? Attacks of gout often occur after indulging in alcohol, particularly wine or beer, or after overeating rich foods such as liver, anchovies, and gravy. Traditionally, gout was considered a disease of the rich as they were the only ones able to afford rich food. Nowadays, in western society, people from any background can experience gout as everyone has easy access to affordable protein rich food. Hence it is no longer considered a condition of the rich.

Gout tends to run in families. Therefore some people are genetically prone to gout and may develop gout even if they eat very little purine rich food.

Some medical conditions can make a person prone to gout including reduced kidney function. This is because if the kidneys are not functioning properly they will not be able to excrete excess uric acid. Some drugs such as thiazide diuretics (used for high blood pressure eg. Bendrofluazide) and low dose aspirin (used to thin blood) can cause gout as they reduce uric acid excretion.

Are there different types of gout? There are two different types of gout:

- Primary hyperuricaemia refers to an increased level of uric acid in the blood. This type of gout is usually caused by a hereditary abnormality in the kidneys, which renders the body incapable of excreting uric acid fast enough.
- Secondary hyperuricaemia is the more common form of gout. It can be a result of some other medical condition. It can also be caused by diuretics (fluid tablets) or alcohol or purine rich foods.

What are the symptoms? Gout does not develop overnight. There is a latent period of about seven years during which the concentration of uric acid in the bloodstream gradually increases. Not all people with raised uric acid levels go on to develop gout.

The first symptom of gout is usually extreme pain in the big toe. The joint at the base of the big toe becomes swollen and the overlying skin becomes shiny and purple. The toe becomes very tender and sufferers find that they are unable to wear a shoe on the affected foot or even tolerate the weight of bed sheets at night.

The first attack of gout will usually subside after about a week and about 10% of people will never again experience gout. The remainder may experience attacks with increasing frequency and each subsequent attack can be of longer duration. Repeated attacks of gout over several years can cause arthritic damage to the joint. While gout most often affects the big toe it can also attack other joints. The knee can sometimes be affected.

If gout is left untreated, the sodium urate crystals will eventually collect under the surface of the skin and will manifest themselves as small bumps near the joints, or more commonly on the outer side of the ear. These bumps are known as tophi and occasionally they rupture and discharge a yellowish, chalky material.

Complications of Gout- About 20 percent of those with gout also suffer from kidney stones. Small stones may cause no symptoms but larger stones can interfere with kidney function. Symptoms of kidney stones include intense intermittent pain in the side and abdomen, nausea, vomiting, a distended abdomen, chills, fever, and blood in the urine. Smaller stones require no treatment and drinking plenty of water may help flush them out of the kidney in the urine. Larger stones must be broken up by ultrasound waves or be surgically removed. Drinking plenty of water (8 glasses per day) can reduce the risk of kidney stone formation in patients with gout.

How is it diagnosed? Gout is usually diagnosed on the basis of the history of the attack and the physical signs. In order to rule out other rheumatic conditions, a GP will probably take a blood sample to measure the concentration of uric acid in the bloodstream.

Treating acute attacks

Non-steroidal anti-inflammatory drugs (NSAIDs) are a type of painkiller usually recommended as an initial treatment for gout. They work by reducing the levels of pain and inflammation.

NSAIDs often used to treat gout include:

- Ibuprofen (Nurofen[®])
- diclofenac (Difene[®] or Diclac[®])
- naproxen

Continue to take NSAIDs throughout the attack and for 48 hours after the attack has finished. NSAIDs should be prescribed together with a medication called a proton pump inhibitor (PPI) that reduces the risk of the NSAID causing indigestion, stomach ulcers and bleeding from the stomach. People with reduced kidney function or those with conditions such as stomach ulcers or bleeding should avoid using NSAIDs.

Colchicine

For those unable or do not want to take NSAIDs, or if NSAIDs are ineffective, colchicine can be used instead. Colchicine is derived from the Autumn crocus plant. It is not a painkiller, but works by reducing the ability of the urate crystals to inflame the joint lining (synovium), which reduces some of the inflammation and pain associated with a gout attack.

Colchicine can be an effective treatment for gout. However, it should be used at low doses since it can cause upsets, including:

- nausea

- abdominal pain
- diarrhoea

Colchicine can cause major stomach irritation if taken in too high a dose. It is important to follow the recommended dose. For most people, this means taking no more than two to four tablets a day.

Corticosteroids

Corticosteroids are a type of steroid sometimes used to treat severe cases of gout that do not respond to other treatment (above).

A short course of steroid tablets often provides relief, but can not be used long-term as they cause side effects including:

- weight gain
- thinning of the bones (osteoporosis)
- bruising
- muscle weakness
- thinning of the skin
- increased vulnerability to infection

Corticosteroids can also exacerbate diabetes and glaucoma (an eye condition which can cause blindness if untreated).

Corticosteroids may not be suitable if the person has:

- bone marrow disease
- impaired kidney function
- impaired liver function
- heart failure

Corticosteroids can also be given by injection, either into muscle or directly into the affected joint, which can provide rapid pain relief.

Preventing attacks

Two methods used to try to prevent further attacks of gout are:

- medication to reduce uric acid levels
- making lifestyle changes to reduce uric acid levels

Medication

Usually recommended on a long-term basis for:

- frequent attacks of gout and signs of tophi under the skin (tophi are small white lumps that can form under the skin)
- evidence of joint damage; either in terms of associated symptoms or damage detected by X-ray
- a history of kidney stones

The main treatment for gout is known as urate-lowering therapy or ULT. The goal of ULT is to lower uric acid levels below the levels required for crystals to form (the saturation point).

This should also help to dissolve existing crystals leading to an effective cure for gout. To prevent re-occurrence they normally need to be continued on a daily basis.

Many people with gout begin ULT as soon as they are diagnosed to reduce the frequency of attacks and the risk of developing joint damage. This has to be balanced against possible side effects that can occur with ULT, although these are rare. Usually the ULT medication to try first is called allopurinol.

Allopurinol

Allopurinol helps to lower uric acid levels by inhibiting the enzyme (xanthine oxidase) responsible for converting purines into uric acid, thus reducing the production of uric acid.

However, allopurinol is not a painkiller and will have no effect during an attack of gout.

Allopurinol is a tablet taken once a day and usually for up to a year or two before all crystals have dissolved and no further attacks can occur. The medication will then usually be taken for the rest of a person's life.

It can take a while to assess the most effective dose in each circumstance. Several blood tests may be required to find the most effective dose.

Allopurinol can sometimes cause a gout attack when it is started, because rapid reduction of uric acid levels to below the saturation point causes existing crystals in joint cartilage to partially dissolve and become smaller.

The smaller crystals can escape more easily or shed from the cartilage into the joint cavity and then inflame the joint lining (synovium).

The risk of this happening is reduced by slowly increasing the dose of allopurinol from a low starting dose (e.g. 100mg daily) to the recommended dose (max dose is 600mg). Gout attacks may continue until all the existing crystals have dissolved, which is perfectly normal.

It is important to persevere with treatment to achieve the maximum benefit. If a flare-up of gout develops while taking allopurinol, continue the medication while the doctor prescribes additional treatment to settle the attack (eg) NSAID. Although allopurinol is taken without any side effects in most patients, around 10% do experience problems. A skin rash is the most common side effect. In most cases, it is mild and soon goes away.

However, in a small number of cases, it can be a sign of an allergic reaction. If a skin rash develops while taking allopurinol, stop taking the medication immediately and contact doctor. It may be necessary to stop taking allopurinol and try an alternative ULT (see below).

Other side effects of allopurinol include:

- indigestion
- headache
- diarrhoea

Allopurinol cannot be taken with immunosuppressant medications (often used to prevent the body rejecting a donated organ) or a type of medication called cyclophosphamide (used in the treatment of some cancers). Allopurinol may not be suitable for patients with severe kidney disease. Patients with kidney problems may be started on a lower dose (50mg daily) and have lower monthly increases (50mg) of allopurinol. Those with severe kidney disease may not even be started on allopurinol, but prescribed an alternative ULT such as febuxostat.

Febuxostat (Adenuric[®])

Febuxostat acts in the same way as allopurinol by inhibiting the enzyme (xanthine oxidase) that produces uric acid, thus reducing the body's production of uric acid.

However, unlike allopurinol, it is broken down by the liver and not the kidney, so can be used in patients with kidney disease without concerns over side effects.

It comes in two doses (80mg or 120 mg daily). Because even 80 mg daily may quickly reduce uric acid levels below the saturation point, initiation of even the lowest dose of febuxostat often triggers acute attacks.

To try to reduce the frequency and severity of this side effect the doctor may prescribe a regular daily oral NSAID or colchicine (one-to-two tablets daily) for up to six months following the start of febuxostat as preventative treatment.

Common side effects of febuxostat include:

- an increased number of acute gout attacks
- diarrhoea
- headache
- feeling sick
- skin rash

If the person experiences more serious symptoms such as breathing difficulties or facial swelling, stop taking febuxostat and contact GP.

Currently, febuxostat is not considered suitable for people with heart problems (especially heart failure), or with serious kidney disease.

Prevention- There are certain lifestyle changes that can prevent gout or prevent its re-occurrence.

- Reducing the amount of meat in the diet because meat is rich in uric acid forming components. Consider a vegetarian lifestyle.
- Eating plenty of raw fruit, vegetables, grains, seeds, and nuts. Cherries and strawberries appear to be most beneficial.
- Avoiding purine rich foods like anchovies, asparagus, crab, fish roe (caviar), herring, kidney, liver, meat gravies and broths, mushrooms, mussels, peas, beans, and sardines.
- Maintaining a low fat diet
- Weight reduction if overweight.
- Exercise regularly
- Reducing alcohol consumption.
- Drinking lots of water in order to wash out the urinary system.

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