

Gout

Gout is a painful condition usually involving the joints similar to arthritis. It is caused by high levels of uric acid in the blood. Uric acid is formed when the body breaks down purines, which are found in the body and certain foods. About a third of people with high levels of uric acid will develop gout. It is not known why some people develop symptoms and others do not. Uric acid in the blood can form sharp, needlelike crystals that are deposited in joints, tendons, and surrounding tissues.

The joints are the most commonly affected part of the body, especially the big toe and knee. When it involves the big toe it is known as podagra. Uric acid can also be deposited in the kidney and urinary tract which can cause kidney stones to form. If left untreated, this can lead to kidney damage.

The symptoms of an acute gout attack are sudden, severe joint pain with redness, swelling, and tenderness of the joint. The joint may feel quite warm to the touch.

Progressive gout can cause bone destruction and deformity. When someone has many attacks over years, tophaceous gout can develop. This means that large amounts of uric acid crystals have accumulated into masses called tophi (pronounced Toe-fi). Tophi are visible and/or can be felt in the soft tissues over joints, especially on fingers, hands, elbows, feet, and Achilles tendons. They may appear to have a white or yellow substance inside which could drain when inflamed.

Risk Factors

Gout generally develops in men between age 30 to 45 and women age 55 to 70. Other risk factors for developing gout or having an acute gout attack are listed below:

Increased risk for developing gout:

- Obesity
- High blood pressure
- Injury or recent surgery
- Fasting or overeating
- Consuming excessive amounts of alcohol on a regular basis
- Diets high in meat, shellfish, and beverages sweetened with high-fructose corn syrup
- Taking medications that can increase blood levels of uric acid (especially diuretics)

Factors that can cause an acute gout attack:

- Injury or recent surgery
- Fasting or overeating
- Consuming excessive amounts of alcohol
- Taking medications that can increase blood levels of uric acid which can include diuretics and daily low dose aspirin.

Diagnosis

To determine if gout is the cause of an inflamed joint, fluid is drawn from the affected joint to look for uric acid crystals. Often clinicians will treat for gout when there are both classic symptoms and high levels of uric acid in the blood.

Treatment

1. Nonsteroidal anti-inflammatory drugs (NSAID's) – reduce swelling and pain and are often used as first line treatment.
2. Colchicine – often used by people who cannot tolerate NSAID's. Colchicine can have significant side effects based on the dose used. These side effects include nausea, vomiting, diarrhea, and abdominal pain.
3. Steroids (prednisone) – used in people who cannot take NSAID's or colchicine. Prednisone is associated with an increased risk of a recurrent gout attack (called a rebound attack).

Prophylactic (preventive) therapy

Prophylactic therapy is used to prevent or reduce the number of acute attacks. It is used when someone has repeated gout attacks, or has already had joint damage or developed tophi.

Long-term treatment is aimed at lowering the level of uric acid in the blood so that crystals do not form. Colchicine is often used at low doses for a period of time while drugs that lower uric acid levels are started. Allopurinol is one of the most commonly used long-term drugs. It prevents the formation of uric acid. However it can have side effects including rash, low white blood cell counts, diarrhea, and fever. There are newer drugs also but some of these have been associated with developing kidney problems.

Prevention through diet

Obesity is a strong risk factor for developing gout or having an acute gout attack. This risk is especially high in those with a body mass index of 25 kg/m².

Dietary changes can reduce the frequency of attacks. Diets should include:

- Increased dietary protein from low-fat dairy products
- Avoiding red meat, including wild game; some seafood especially shellfish and some large saltwater fish
- Decreased saturated fats
- Whole grains, brown rice, oats, beans
- Avoiding foods and beverages containing high-fructose corn syrup
- Coffee (may decrease blood uric acid levels)
- Only moderate alcohol consumption
 - Alcohol, especially beer, interferes with the body's natural ability to eliminate uric acid from the body
- Vitamin C 500 mg daily has a mild effect on lowering uric acid levels
- Cherries, blueberries, purple grapes, and raspberries have also been found to be beneficial

Pseudogout

Like gout, pseudogout is a form of arthritis that causes sudden joint pain and swelling. The prefix “pseudo” means that it looks like something else. The term pseudogout is used because this is very similar to gout as is discussed above.

While gout is caused by uric acid crystals; pseudogout is caused by calcium pyrophosphate dehydrate crystals (CPPD). And though the two have similar symptoms, treatment is somewhat different.

Pseudogout causes sudden attacks of joint pain, swelling, and warmth. The attacks can last for days to weeks. The knee is most commonly affected but it can also affect the ankles, feet, shoulders, elbows, wrists, or hands. CPPD crystals can also be deposited in joint cartilage and never cause symptoms.

Risk Factors

In addition to older age, several other factors increase the risk for developing pseudogout.

- Joint trauma due to injury or surgery
- Genetics: some people have a predisposition to developing pseudogout and are more likely to have symptoms at an earlier age
- Excess iron: people with a genetic disorder which causes the body to store excess iron (hemochromatosis) are more likely to develop pseudogout
- Other disorders: some disorders that affect metabolism or endocrine glands such as hyperparathyroidism are associated with developing pseudogout.

Diagnosis

Diagnosis is made by looking for crystal in the joint fluid. X-rays of the painful joint could also show calcium-containing crystal deposits in the cartilage.

Complications

Rapidly progressing osteoarthritis can occur due to wearing down joint cartilage, bone cysts or spurs, and even fractures.

Treatment

There is no treatment that can completely remove or prevent the formation of calcium pyrophosphate dehydrate crystals. Treatment is generally aimed at reducing pain and swelling.

- Joint drainage or injection: by having a needle inserted into the affected joint and drawing off fluid and the crystals, pressure and pain can be relieved. Injecting steroids into the joint can decrease the amount of inflammation present.
- Oral medications such as NSAID's, prednisone and colchicine can decrease inflammation and pain

- Joint immobilization: patients may be advised to avoid weight bearing (walking or running) if the legs or feet are involved and to limit activity for a period of time to minimize pain and swelling. A splint may be used temporarily to limit joint movement.

Preventive therapy

For those who have frequent episodes of pseudogout attacks, daily colchicine may be prescribed.