PATIENT FACT SHEET

Calcium Pyrophosphate Deposition (CPPD)

CONDITION DESCRIPTION

Calcium pyrophosphate deposition (CPPD) is a type of arthritis. CPPD used to be called pseudogout because it is easily mistaken for gout. In CPPD, calcium pyrophosphate crystals form in the blood and settle in joint cartilage.

CPP crystals may build up with age. CPPD risk also rises with age. People over 60 are more likely to get CPPD, although it may happen at an earlier age. Crystal deposits attract white blood cells that trigger an inflammatory attack.

It is unknown why CPP crystals form. Excess iron or calcium in the blood, low magnesium, and an overactive or underactive thyroid gland may be contributing factors. CPP crystals may also be found in the joints of people with osteoarthritis or gout.

SIGNS/ SYMPTOMS

CPPD symptoms include severe joint pain, warmth and swelling. Knees are the joints most commonly affected, but CPPD can affect the wrists, hands, elbows, ankles or other joints.

At first, CPPD attacks may be minimal. If left untreated, CPPD may lead to severe, painful attacks and chronic joint inflammation. Joint cartilage may break down, causing disability.

A rheumatologist diagnoses CPPD based on symptoms and medical tests. Joint imaging like MRI, ultrasound, CT scan or X-ray may show calcium-containing deposits in cartilage. Other conditions like gout, rheumatoid arthritis or joint infections should be ruled out. Needle biopsy of joint fluid to identify crystals under a microscope confirms CPPD. Other blood tests may also be used.

COMMON TREATMENTS

Nonsteroidal anti-inflammatory drugs (NSAIDs) are prescribed to treat joint pain and swelling in an acute CPPD attack. These include indomethacin (Indocin) and naproxen (Naprosyn). There is no treatment to dissolve the crystals.

People with poor kidney function, a history of stomach ulcers and/or who take blood thinners cannot take NSAIDs. In these patients, the doctor may drain fluid from the affected joint and inject a corticosteroid. They may also use colchicine or low-dose NSAIDs to prevent future attacks.

For severe attacks or chronic inflammation, drugs like methotrexate (Rheumatrex, Trexall, Otrexup, Rasuvo) or the interleukin beta-1 antagonist anakinra (Kineret) are treatment options. Surgery may be used to repair or replace damaged joints.

CARE/ MANAGEMENT TIPS

Prompt diagnosis and treatment of CPPD may ease symptoms and prevent joint damage. See a rheumatologist as soon as symptoms appear to rule out other possible causes and start treatment.

Some underlying causes of calcium crystal build-up are treatable. A doctor can evaluate and treat problems like excess iron or calcium in the blood, thyroid problems or low magnesium.

Rheumatologists may refer some people with CPPD to physical and occupational therapists. These health care providers guide therapy to improve flexibility, ease joint pain and adapt movements for better function.

Updated March 2017 by Luke Barre, MD, and reviewed by the American College of Rheumatology Communications and Marketing Committee.