# Rising Gout Prevalence Due to Undertreatment

## *The goal of treatment is cure and given the drugs available today, that's realistic and achievable.*

BY BRUCE JANCIN
*Denver Bureau*

VIENNA — The rising prevalence of gout being reported in the United States and many other parts of the world constitutes in part an indictment of suboptimal physician management of the disease, Michael Doherty, M.D., said at the annual European congress of rheumatology.

"One of the suggestions from several reports in the literature is that part of the increasing epidemic is due, shamefully, to relative undertreatment of gout," according to Dr. Doherty, professor of rheumatology at the University of Nottingham, England.

The goal of gout treatment is cure. It's a realistic, achievable goal with the drugs available today. And if this were occurring consistently, the small and sporadic increases in the incidence of gout documented during the 1990s would have little impact on the prevalence of active gout.

"If you have a chronic disorder—for example, osteoarthritis, or badly treated gout—then the disease tends to be present for a long time, and a small increase in incidence will have a very large effect upon prevalence by the end of the time studied," he observed at the meeting sponsored by the European League Against Rheumatism.

One persuasive piece of epidemiologic evidence that this is in fact what has been happening with gout comes from the U.K. General Practice Research Database, a highly regarded national project in which participating primary care physicians directly enter detailed computerized health data on close to 2 million patients in the United Kingdom.

Dr. Doherty noted that, in a recent report analyzing gout trends in the database for 1990-1999, investigators concluded that the overall annual incidence of gout in the United Kingdom remained relatively stable throughout the decade. In contrast, the prevalence of gout in 1999—estimated at 1.4%, climbing to a peak of 7.3% among men aged 75-84—was nearly threefold greater than in a similar national study conducted in the mid-1970s (Ann. Rheum. Dis. 2005;64:267-72).

Particularly disturbing to Dr. Doherty was the investigators' observation that, consistently during the 1990s, only about 30% of U.K. patients diagnosed with gout were on allopurinol or other hypouricemic therapy aimed at preventing recurrent attacks. This indicates that effective treatment strategies are markedly underused. Moreover, this epidemiologic observation also is supported by everyday clinical experience, which shows that despite a correct diagnosis of gout, many patients continue to have gouty attacks and a progression of their disease, he said.

**If treatment were adequate, the small increases in the incidence of gout during the 1990s would have little impact on the prevelance of active gout.**

A rising prevalence of gout has been documented in the United States as well. In a 10-year study of a managed care population with more than 4 million enrollees, investigators concluded that among those ages 75 or older, the disease prevalence climbed from 21/1,000 in 1990 to 41/1,000 in 1999. Among the 65-74 age group, the prevalence rose less dramatically, from 21-24 cases/1,000 in 1990-1992 to more than 31/1,000 in 1997-1999 (J. Rheumatol. 2004;31:1582-7).

While epidemiologic studies have not consistently shown an increase in gout incidence in the 1990s, that's likely to change in the future. Levels of many known gout risk factors are climbing, including some that are related to lifestyle. These include hypertension, obesity, insulin resistance, and dyslipidemia, each an independent risk factor for gout as well as a component of the metabolic syndrome, which has reached epidemic levels in western societies.

Two-thirds of the body's circulating uric acid pool is cleared by the kidneys. Hence the growing incidence and prevalence of renal impairment constitute another rising risk factor for gout.

Advanced age is a powerful gout risk factor. It has been suggested, but is as yet unproved, that part of the explanation lies in the age-related increase in osteoarthritis, since osteoarthritic joint inflammation encourages the deposit of crystals. On the other hand, Dr. Doherty said, there is evidence to suggest a negative correlation between rheumatoid arthritis and gout. ■

# Calcium Deposition Disease Eludes Diagnosis in Practice

BY ROBERT FINN
*San Francisco Bureau*

SANTA BARBARA, CALIF. — Deposition of calcium pyrophosphate dihydrate into joints can mimic several other conditions, including osteoarthritis, rheumatoid arthritis, and gout, and making a definitive diagnosis can be quite a challenge, Ann K. Rosenthal, M.D., said at a symposium sponsored by the American College of Rheumatology.

A definitive diagnosis of calcium pyrophosphate dihydrate (CPPD) deposition disease can be made only by identifying the crystals directly, using complex techniques such as x-ray diffraction or Fourier transform infrared spectroscopy, techniques that are unavailable in most clinical labs.

"Most of us diagnose CPPD deposition by synovial analysis," said Dr. Rosenthal of the Medical College of Wisconsin, Milwaukee. "We look under polarizing light microscopy and see the positively birefringent crystals. This really remains the gold standard clinically."

Unfortunately, CPPD crystals are often only weakly birefringent, with one study indicating that just 17%-40% of the crystals glow under polarizing light (Ann. Rheum. Dis. 1999;58:582-4). In contrast, practically all gout crystals are birefringent. For this reason, nonpolarizing light microscopy may be useful in diagnosing CPPD deposition disease.

The disease is such an excellent imitator of other rheumatic conditions that many physicians never suspect calcium crystals as a cause. In all likelihood, many cases are missed because of poor diagnostic techniques.

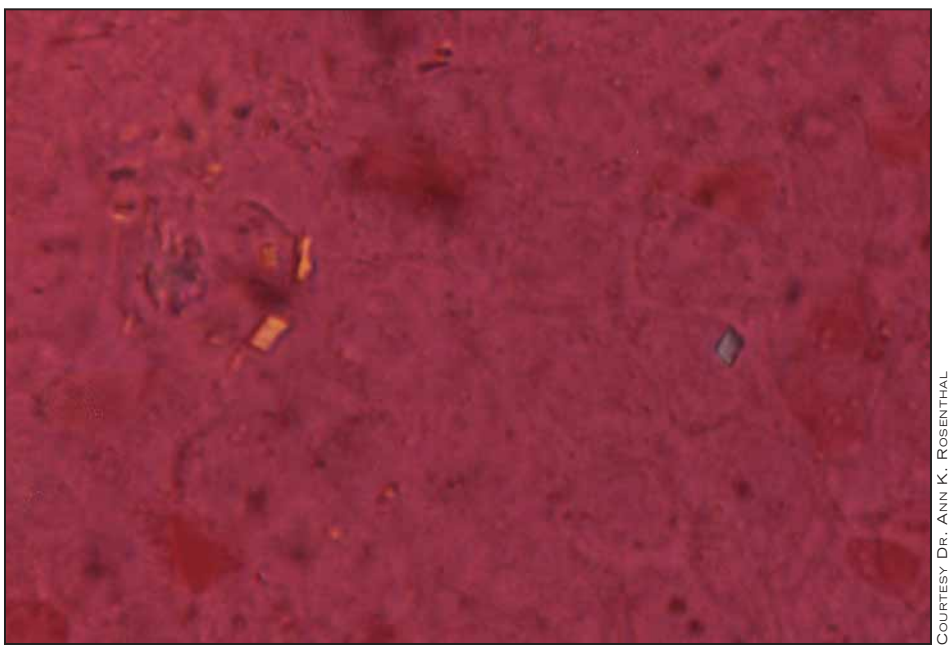
An analysis of a patient's risk factors for CPPD deposition disease provides little ammunition to increase the index of suspicion.

The condition is rare in people under the age of 60 but rapidly increases in incidence in older patients. About 50% of patients over the age of 90 have radiographic evidence of CPPD deposition. Women are slightly more likely than men to have CPPD deposition. And prior injury to the joint increases the risk of CPPD deposition.

A variety of metabolic disorders are associated with the formation of CPPD crystals. The most significant are hyperparathyroidism, hemochromatosis, hypomagnesemia, and gout, but case reports have implicated a number of other conditions.

The clinical presentation of CPPD-induced pseudogout, pseudo–rheumatoid arthritis, or pseudoosteoarthritis can differ in subtle ways from the true conditions. For example, pseudoosteoarthritis (the most common CPPD deposition disease) can appear identical to true osteoarthritis, although it may affect unusual joints.

"Perhaps a lot of what we're calling osteoarthritis is actually CPPD deposition disease," Dr. Rosenthal said. One study demonstrated a 60% prevalence of either CPPD or basic calcium phosphate crystals (called BCP crystals or hydroxyapatite) in knee joints of patients with a preoperative diagnosis of osteoarthritis (J. Rheumatol. 2002;29:570-4).



COURTESY DR. ANN K. ROSENTHAL

**CPPD crystals are weakly birefringent under polarizing light microscopy (as shown). Only 17%-40% of CPPD crystals glow using such means.**

Chondrocalcinosis is the radiographic hallmark of CPPD deposition disease, but it can be risky to diagnose the condition based on radiographic findings alone, Dr. Rosenthal said. Chondrocalcinosis appears as a linear deposition of calcium, often in the fibrocartilage or lining of the articular cartilage. It is most likely to be found in the symphysis pubis and the triangular cartilage of the wrist.

Ultrasound is the most promising new technique for CPPD diagnosis, with a recent study identifying three patterns that appear highly specific for CPPD deposition disease. The first is a punctate pattern with several thin hyperechoic spots in fibrocartilage and tendons. The second is characterized by homogeneous hyperechoic or oval deposits localized in bursae and articular recesses. The third pattern shows thin hyperechoic bands parallel to the articular surfaces (Ann. Rheum. Dis. 2005;64:638-40).

MRI adds little to a diagnosis, since calcification in cartilage can appear as high or low signal intensity.

On the other hand, CT scans can be quite sensitive and may be particularly useful for cases with spinal involvement. One advantage of CT scanning is that the technique can detect—and in some cases differentiate between—both BCP and CPPD crystals. ■