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What Did Leonardo Da Vinci, Benjamin Franklin, Karl Marx and Dick Cheney all have in Common? GOUT!

By Herbert S.B. Baraf, MD, FACP, FACR
Arthritis and Rheumatism Associates, P.C.

Gout is an ancient disease, its earliest descriptions dating to the time of Hippocrates. It is a painful affliction of the joints caused by deposits of crystals derived from uric acid. Attacks often occur as severe flare-ups of pain, swelling and redness in the feet and ankles, but can also involve other joints. There are few disorders as painful as gout, turning those in the throes of an acute attack into a state of helplessness. Early on in the course of this disease, flare-ups occur infrequently, last a week or so, and resolve on their own or with the help of medications that fight inflammation. Over time, attacks become more frequent, last longer and involve an increasing number of joints. Eventually, if not controlled, gout sufferers may develop persistent joint pain, swelling, deformity and disability. In the most severe cases, lumps composed of crystalline uric acid form on the joints and in other tissues. These lumps, called tophi, can be quite disfiguring and may interfere with ordinary joint function.

The management of gout involves two important steps. The first is to control the severe attacks by inhibiting inflammation with medications like colchicine, ibuprofen or naproxen. The second, as attacks become more frequent, is to mobilize and eliminate the uric acid derived crystals from the joints and surrounding tissues. In essence, first fix the pain and then clear the body of excess amounts of uric acid.

Arthritis and Rheumatism Associates, P.C. through its clinical trials division, The Center for Rheumatology and Bone Research, has had a very strong interest in treatments to control gout. We have researched the safety and effectiveness of NSAIDs (such as Celebrex) and colchicine in managing gout, as well as more sophisticated treatments with drugs known as interleukin-1 (IL-1) inhibitors. In addition, we have worked on new treatments to lower blood uric acid levels so as to eliminate the crystals that are the root cause of gout. Two years ago, Uloric (febuxostat) was approved as the first new uric acid lowering treatment in more than 40 years and last year Krystexxa (pegloticase) was approved. We played important roles in the development of these drugs.

One of the most exciting contributions this practice has made to arthritis therapy evolved from our participation in the development of Krystexxa, a drug that is targeted at patients with extremely severe and disabling gout. Our first patient *(patient #1)* had experienced several flares of gout and had large tophi on his fingers and toes. His hands were photographed before he entered the trial and again at 12 weeks, by which time the lumps had disappeared. Such

(over)

improvement in gout of this severity, in such a short period of time, was unheard of and unexpected.

Two years later we participated in a second research program involving this drug and we again saw dramatic effects in patients with extremely severe gout. We saw patients previously unable to put on their shoes or button their collars (*patient #2*) regain hand function. A patient with severely disfigured hands, and who was unable to walk for 4 years *(patient #3)* noted regression of his finger tophi and overall improvement in function such that he began walking again after 4 months of treatment. Most impressively, we saw resolution of disfiguring and disabling tophi resolve in a matter of months *(patient #4)*, something that under the best of circumstances, would previously have taken years to resolve.

Although Krystexxa treatment can be accompanied by anaphylactic infusion reactions, we have been able to safely provide this treatment to over 25 patients. Research has shown us that anaphylactic reactions can be minimized by employing simple stopping rules in patients who show early signs of immunologic reactivity.

Being at the forefront of clinical research in gout and other forms of arthritis has paid huge dividends to the patients in our practice, around the country and the world and has been a major source of pride for the physicians at Arthritis and Rheumatism Associates, P.C. and the staff of The Center for Rheumatology and Bone Research.

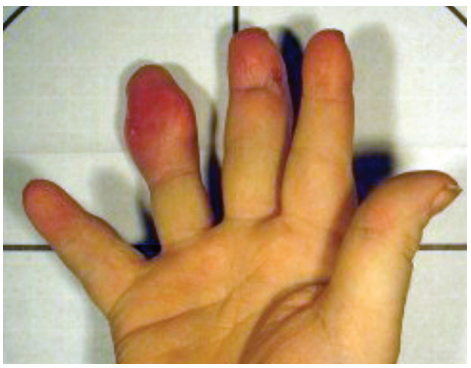
Patient #1 at baseline

Patient #1 at 3 months

Patient #2 at baseline

Patient #2 at 6 months

Patient #3 at baseline



Patient #3 at 6 months

Patient #4 at baseline

Patient #4 at 3 months