## Treatment with allopurinol decreases the number of acute gout attacks despite persistently elevated serum uric acid levels

Sirs,

Hypouricemic therapy in gout can prevent or resorb tophi and prevent attacks of arthritis. The recommended goal of therapy is serum uric acid (SUA) less than 381 mol/L, a saturation level of extracellular fluid with monosodium urate (1, 2). In reality many patients continue to have SUA levels higher than 381 mol/L. In our experience several patients on allopurinol had persistently higher than recommended SUA levels,and at the same time had less acute gout attacks. This observation prompted us to begin to evaluate the influence of allopurinol on the frequency of gout attacks in relation to SUA levels and the presence of tophi.

We reviewed the charts of patients attending the Department of Veterans Affairs Hospital rheumatology clinic in Philadelphia, PA from 1988 to 1996,and selected patients who had crystal proven gout, and a close follow-up for a year before and a year after allopurinol introduction. We recorded the patient's age, sex,type and duration of gout, allopurinol dose, medication other than allopurinol, acute attacks, presence of tophi, and SUA and creatinine levels.

Twenty-three patients were evaluated; all males, mean age 66 years. Thirteen patients had recurrent gouty attacks, and 10 had tophaceous gout The duration of the gout ranged from 1 year to 30 years (mean 12.5 years). Allopurinol had been given at doses from 50 mg to 400 mg/day (mean 211 mg/day). Seventeen out of 23 patients were taking the same or lower daily doses of anti-inflammatory drugs in a year after allopurinol introduction when compared to a year before.

Six out of 23 patients were started on, or given higher doses of anti-inflammatory drugs at the time of allopurinol introduction. There was a significant decrease in the number of acute attacks during a year of allopurinol therapy, with a mean number of 2.69 attacks/year before and 0.30 attacks/year during a year of treatment ($p < 0.000$). This difference persisted after the exclusion of patients placed on an anti-inflammatory regimen at the time of ALP introduction. SUA levels were lower during a year of allopurinol treatment, with a mean 571 mol/ L before and 446 mol/L during the year of treatment ($p < 0.0001$). Only 7 out of 23 patients (30.4%) had SUA below the target level of 381 mol/L. Sixteen patients (69.6%) had SUA above 381 mol/L. Both groups had significantly fewer acute gout attacks while on allopurinol ($p < 0.0001$). The tophi persisted in all patients.

Achieving the recommended SUA level of less than 381 umol/L may be difficult due to several patient and physician related factors. In this pilot study, we found a significant decrease in the number of gout attacks in patients taking allopurinol despite persistently elevated SUA levels and the presence of tophi. The frequency of acute attacks reportedly correlates with SUA (3,4), so less numerous attacks may be an effect of the decreased urate load, even if SUA levels remain higher than optimal. The anti-oxidant and anti-inflammatory properties of allopurinol have resulted in the investigational use of allopurinol in ischemia-reperfusion injury (5, 6), and in experimental inflammatory arthritis (7-9). It is thus possible that in gout allopurinol exerts an anti-inflammatory effect, ameliorating the incidence and severity of attacks.

Physicians caring for patients with gout may expect less acute attacks with allopurinol treatment, even before SUA levels reach the recommended value. Studies comparing the frequency of attacks at various SUA levels with uricosuric versus allopurinol might help to clarify the mechanisms involved.

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## Dermatomyositis and Graves' disease

Sirs,

Dermatomyositis and Graves'disease (GD) are well known autoimmune disorders. Graves' disease is rarely associated with inflammatory myopathies, and the association between GD and dermatomyositis has been reported in only one case (1-3). We present the case of a patient with dermatomyositis who did not respond to conventional therapy. Diagnosis and treatment of the concomitant hyperthyroidism was followed by a significant clinical improvement.

A 62-year-old woman was admitted for evaluation of a 3-months history of progressive, symmetrical proximal muscle weakness of the limb girdles and neck, and mild paradoxical dysphagia. Three and a half years before, the patient had been diagnosed with a left infiltrative ductal breast carcinoma. A modified radical mastectomy was performed and she was treated with chemotherapy and radiotherapy. There was no evidence of recurrent malignancy. Physical examination showed pathognomonic Gottron papules on the hands and elbows and a periorbitary edema with heliotrope rash of the eyelids. On admission, myopathic changes were found on electromyography, and muscle biopsy performed on the deltoids showed the characteristic findings of dermatomyositis. Skeletal muscle serum enzymes (CK, aldolase, GOT, GPT and LDH) were normal, perhaps due to an early disease.

The patient was given corticosteroid treat-