

Serum uric acid in acute gout

The relation between gout and uric acid is such that in general clinical practice there is a tendency (diminishing) to misdiagnose gout in the presence of hyperuricaemia. Conversely the diagnosis of gout may be rejected when a normal serum uric acid (SUA) value is found. Given that a high proportion of estimations are made at the time of the acute episode a correct diagnosis may depend on a practitioner's knowledge of the fact that the SUA may be within the 'normal range' at this time. Most, if not all rheumatologists, are aware of this fact, although the emphasis in current general and rheumatological publications and text books is that this is an unusual occurrence.^{1,2} We have conducted a prospective study to determine the frequency of normal SUA values in acute gout and also to compare acute and inter-critical values.

Over a period of three years we observed 38 consecutive patients during 42 episodes of acute gout and who had the following characteristics: 34 men, four women, age 40±80 years mean 54: inpatients 16, domiciliary visits 9, Accident and Emergency 7, and clinic 10. Chronic diuretic drug use was implicated in eight and excessive alcohol in 10 patients. The diagnosis of acute gout was made on clinical grounds.³ In 15 patients joint aspirate was positive for urate crystals. All had SUA measured during the acute attack. Patients taking allopurinol, uricosurics, aspirin (other than low dose) or azapropasone were excluded. Except for two patients from Accident and Emergency and four GP home visits all patients were seen by one of us during the acute bout.

Urate estimations after the episode were made either before commencement of allopurinol or within three months. Values before the episode (within six months) were available from the files of 20 patients. The upper limit of the normal range of SUA in our laboratory is 0.45 mmol/l in men and 0.38 in women. Figure 1 shows the SUA values for the acute and inter-critical phases. The respective median values were 0.44 and 0.56 mmol/l for the whole group and 0.42 and 0.54 mmol/l for crystal verified cases ($p = 0.004$, Mann-Whitney). During the acute episode a normal SUA value was found in 43% as follows: 16 men and two women; 11 of 22 monoarticular, five of 12 polyarticular, and two of four chronic tophaceous gout; four of 10 excessive alcohol, three of eight diuretic use. In 14 men the value was below the saturation value of urate in serum (0.4 mmo/l). Five patients had one normal inter-critical value and higher values at other times. In 30 of 42 (70%) the SUA during the acute episode was lower (that is, by <0.05 mmol/l), in seven it was unchanged, and in five it was higher than the inter-critical value. These findings indicate that the SUA value usually falls during an acute episode and sometimes to within the normal range in all clinical varieties of gout and including those in whom excess alcohol and diuretic use is implicated. Snaith and Coomes⁴ found a normal SUA in 17% of acute episodes of gout of unspecified type and Hadler *et al*⁵ in 39% of polyarticular episodes. Both were retrospective case record studies, which may yield inaccurate prevalence data. In our prospective study a normal SUA occurred more often than is generally appreciated during the acute episode and occasionally at other times. We believe that highlighting the differences in the range of values in acute and inter-critical

gout in medical textbooks and laboratory reports will increase diagnostic accuracy and improve patient management.

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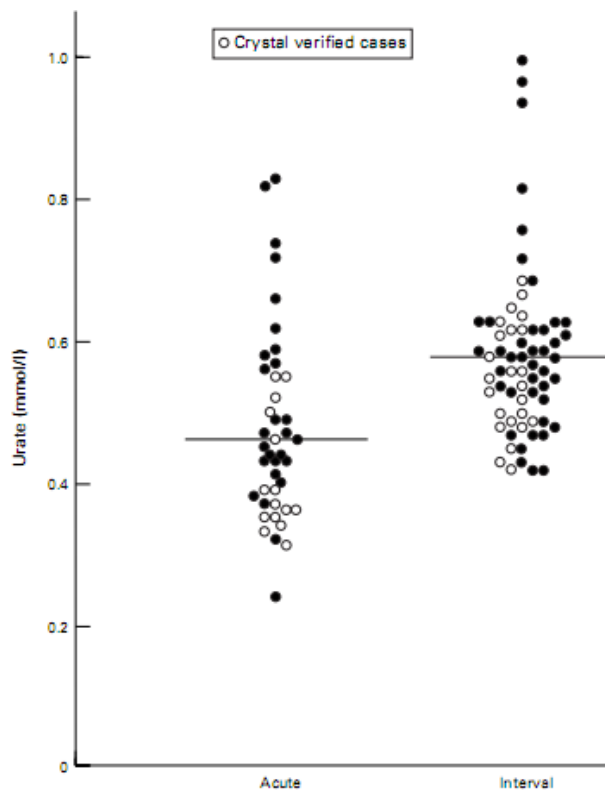


Figure 1 Urate values in acute and intercritical gout.

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