Reviewer's report

Title: Prevalence of hyperuricemia and relation of serum uric acid with cardiovascular risk factors in a developing country

Version: 1 Date: 2 February 2004

Reviewer: William S Waring

Reviewer's report:

General
The authors present an interesting manuscript that describes the associations between serum uric acid concentration and a number of cardiovascular risk factors. The study is of interest because the population are at high cardiovascular risk, but comparatively free of treatments that ordinarily confound the associations between uric acid and other risk factors (e.g., blood pressure lowering therapy, lipid lowering therapy, and anti-hyperglycaemic medications).

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

There might be some confusion for readers regarding the definition of hyperuricemia. The Methods section suggests that a sex-stratified upper quartile was used, but the results section reports the prevalence as 22.3% and 8.5% in men and women respectively. The authors should clarify this important point.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. The mean body mass index across the study population is high (for men and women). Despite this, the prevalence of diabetes is surprisingly low. I suspect that the true prevalence may be somewhat higher, and that the condition was undetected in a number of subjects. The authors may wish to comment on this point in the Discussion section, or mention the diagnostic criteria used for diabetes in the Methods section.

2. The population appear to be at high cardiovascular risk, based on comparatively high mean blood pressure values yet low prevalence of anti-hypertensive treatment. In addition the mean lipid profile values are high, and prevalence of smoking (in males) is high. The authors may wish to provide cardiovascular morbidity/mortality data for this population, if available, so that this can be compared to risk in Westernised populations.

3. The authors should comment on the potential value of uric acid as an important "marker" of cardiovascular risk, because of the associations with other independent causal risk factors. The study does not address the central issue of whether uric acid is a risk "factor". Our own investigations have found that raising uric acid concentrations in healthy people does not impair cardiovascular function (Waring WS et al. Heart 2004;90:155-159). However, high uric acid concentrations may still prove valuable as a powerful risk marker, as has been shown in heart failure patients (Anker S et al. Circulation 2003;107:1991-7 and Doehner W et al. Am Heart J 2001;141:792-9).

4. The authors have addressed the major study limitations in the Discussion section. However, one additional limitation is that the study did not include individuals aged >65. This might be important because elderly patients are exposed to greatest cardiovascular risk.
Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

The reviewer was in receipt of a Bristol-Myers Squibb cardiovascular research fellowship 2000-2. No other competing interests.