EDITORIAL

Gout is an independent risk factor for MI in women

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THE ASSOCIATION BETWEEN RHEUMATOLOGICAL DISEASES AND CARDIOVASCULAR DISEASE HAS been recognised for some time. This is illustrated by the fact that rheumatoid arthritis is a strong independent risk factor for coronary disease. However other inflammatory arthropathies such as gout are also considered to carry additional cardiovascular risk. Gout is a fairly common condition affecting 9% of elderly men and 6% of elderly women. Furthermore, it has been shown to increase the risk of acute myocardial infarction (MI) in men. A recent Canadian study in the *Annals of Rheumatic Diseases* has now shown that gout is also an independent coronary risk factor in women and that this association may be stronger than that observed in men.[1]

The study by De Vera and colleagues was a population-based cohort study in women aged 65 and over with gout and no history of ischaemic heart disease (IHD). It reviewed the incident rates of acute MI in the British Columbia Linked Health Database which contains healthcare data on a population of 4.3 million. The authors compared the rates of MI between 9,642 patients with gout, 3,890 of whom were women, and 48,210 controls without gout, 19,450 women.

They found that 3,268 patients, 996 women, had an MI over a median seven-year follow-up. Incidence rates and relative risks were calculated. The crude relative risk was adjusted using multivariant models to allow for other factors which may have influenced the outcome such as age, hypertension, diabetes, hyperlipidaemia and use of prescription drugs e.g. NSAIDs, statins and diuretics.

The incidence of MI in women with gout was 10.04/1,000 person-years compared with 6.03/1,000 person-years in the control group. The crude unadjusted relative risk was 1.67 (95% CI: 1.45-1.93) and this remained significant when adjusted for other risk factors 1.39 (95% CI:1.20-1.61). The findings were similar, but less impressive, for men with an incidence rate of 12.23/1,000 person-years with gout and 10.34/1,000 person-years in controls, corrected RR 1.11 (95% CI: 0.99-1.23). The observed difference between men and women was highly significant, p=0.003. Furthermore, these findings held true if MIs were further subdivided into fatal and non-fatal although the difference between the sexes was not significant for fatal MI, p=0.3.

This study is the first to show that gout is an independent risk factor for MI in women with no previous history of IHD. The association appears to be stronger than that already identified in men.

The mechanism is likely to be similar to that proposed for other chronic rheumatological conditions with systemic inflammation influencing atherosclerotic plaque development. The hyperuricaemia observed in gout may also have a direct effect on vascular smooth muscle and platelets which could promote cellular proliferation and platelet aggregation. These factors in combination with a pro-inflammatory state could translate into accelerated atherosclerosis with plaque destabilisation and subsequent clinical events such as MI.

‘The association appears to be stronger than that already identified in men’

The authors propose that the reason why gout may be more strongly associated with MI in women than in men may be due to gender variations in serum uric acid levels. Typically levels are higher in men than women until the perimenopause. Furthermore reports have shown that the mean uric acid level is higher in women with gout than in men. Therefore women with gout may be subjected to a much greater rise in serum uric acid levels than men.

If we think of gout as an inflammatory metabolic disease rather than a cause of joint discomfort then these findings are not altogether unexpected. This could be taken a step further and from the perspective of cardiovascular risk one could propose that gout is not dissimilar to diabetes. Certainly this study has provided more evidence that we should consider gout in much the same way as we regard rheumatoid arthritis when apportioning cardiac risk. This would appear to be even more relevant to women and should support the aggressive management of cardiovascular risk factors in such patients.

REFERENCE

1 De Vera MA, Rahman MM, Bhole V et al. Independent impact of gout on the risk of acute myocardial infarction among elderly women: a population based study. *Ann Rheum Dis* 2010; DOI:10.1136/ard.2009.122770