Risk of vascular disease with gout: overadjustment of the statistical analyses?

An increase of 6% in the risk of vascular disease among men with gout (adj. HR 1.06 95% CI 1.01 to 1.12) and of 25% among women with gout (adj. HR 1.25 95%CI 1.15 to 1.35) was reported when analysing data of the world's largest primary care database, the UK Clinical Practice Research Datalink.[1] However, the statistical analyses are likely to suffer from overadjustment, which probably have resulted in an imprecise relative risk with reduced statistical significance which often biases towards the null-hypothesis.[2] Cox regression analyses adjusted for both comorbidity using the Charlson Comorbidity Index (CCI) and specific potential confounders, such as hypertension, hyperlipidaemia and chronic kidney disease. The CCI classifies various comorbid conditions which might alter the risk of mortality.[3] As moderate and severe renal diseases are already taken into account in the CCI, they should not be used as a separate covariate (chronic kidney disease).

Overadjustment bias can be easily dealt with: the variables that are overadjusted for should be removed from the multivariate analyses. We would therefore be interested in the results from a multivariate analysis that is unlikely to suffer from overadjustment. Dealing correctly with comorbidities is especially important when assessing the cardiovascular risk in patients with gout, as comorbidities such as chronic kidney disease are known to be more prevalent in individuals with gout compared with healthy individuals.[4]

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