Reviewer’s report

Title: Relationship between metabolic syndrome and knee osteoarthritis; data from the Korean National Health and Nutrition Examination Survey (KNHANES)

Version: 3 Date: 11 February 2013

Reviewer: Altan Onat

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This manuscript concerns the association in 270 subjects with knee osteoarthritis with MetS and its components in 1964 middle-aged controls from the Korean NHANES. Knee osteoarthritis was 1.8-fold more likely in MetS but this association disappeared after adjusting for confounders including BMI. Of the MetS components, waist circumference (WC) was 1.69-fold (CI 1.27; 2.26) more likely associated with knee osteoarthritis when adjusted for sex, age, and sociodemographic factors. Authors concluded that, except for WC, MetS was not significantly associated with knee osteoarthritis among Koreans.

Following points need to be addressed.

1. Some terms are used not quite accurately. In the Introduction, dyslipidemia should be replaced by atherogenic dyslipidemia; association has been described as correlation. Impaired glucose tolerance is not a MetS component, impaired fasting glucose is. WC is measured during “minimal respiration” needs correction.

2. Data analysis should specify that the association between knee osteoarthritis and MetS was sought using multiple logistic regression.

3. Since 11 years’ difference exists across subjects with knee osteoarthritis and MetS, authors might present age-adjusted estimated marginal means in patients with osteoarthritis for comparison with MetS.

4. It is misleading to adjust for BMI the association between osteoarthritis and WC since the two variables are collinear. This adjustment (Model 3) is better deleted. Furthermore, the analysis could be divided into two panels: one seeking the association of MetS with sex, exercise, alcohol and smoking as independent variables; and the other, with the 5 MetS components along with similar confounders (but without MetS). The discussion and conclusion of the study should therefore be modified.

5. Several grammar mistakes await correction.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:

No conflict of interest.