Author’s response to reviews

Title: Association between metabolic syndrome and bone fractures: a meta-analysis of observational studies

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Version: 5 Date: 28 November 2013

Author's response to reviews: see over
Dear editor,

Enclosed, please kindly find our manuscript entitled “Association between metabolic syndrome and bone fractures: a meta-analysis of observational studies”, which we would like to be considered for publication in your journal as an Original Article.

Emerging epidemiological evidence suggest an association between metabolic syndrome and fractures. However, whether metabolic syndrome is an independent risk or protective factor of fractures remains controversial. Our goal is to provide a quantitative assessment of the association between metabolic syndrome and bone fractures by conducting a meta-analysis of observational studies. In overall analysis, metabolic syndrome was not associated with prevalent fractures [pooled odds ratio (OR) 0.93, 95% CI 0.84 - 1.03] in cross-sectional studies or incident fractures [pooled relative risk (RR) 0.88, 95% CI 0.37 - 2.12] in perspective cohort studies. No evidence of heterogeneity was found in cross-sectional studies (p = 0.786, \( I^2 = 0.0\% \)). A substantial heterogeneity was detected in cohort studies (p = 0.001, \( I^2 = 85.7\% \)). No indication of significant publication bias was found either from Begg’s test or Egger’s test. Estimates of total effects were substantially consistent in the sensitivity and stratification analyses. The present meta-analysis of observational studies suggests that metabolic syndrome may not have explicit effect on bone fractures.

All authors believe that the manuscript represents valid work and have reviewed and approved the final version. We think the present study will interest the epidemiologists and
the clinical practitioners. Neither this manuscript, nor one with substantially similar content, has been published or is being considered for publication elsewhere. None of us has a possible conflict of interest with regard to the data presented in this manuscript.

We are looking forward to hearing from you at your earliest convenience.

Yours sincerely,

Kan Sun, M.D. & Guang Ning, M.D., Ph.D.