Reviewer's report

Title: Weight change and incident metabolic syndrome in Iranian men and women; a 3 year follow-up study

Version: 2 Date: 11 December 2008

Reviewer: Altan Onat

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This prospective analysis of a population-based study on 3579 Iranian adults examines the relationship between weight change and incident metabolic syndrome (MetS) and its components over a follow-up of 3.1 years. Overall, a 2.5 to 3% weight gain was observed which was accompanied by an annual 6% and 7% incident MetS in men and women, respectively. Apart from a group of stable weight, one group of wt loss and 3 grades of wt gain groups were formed. Weight gain significantly predicted in multivariably adjusted logistic regression analyses all MetS components except for fasting glucose in men and HDL-cholesterol in women. Weight gain significantly predicted also incident MetS, especially among women, and weight loss protected men against MetS.

Though this work only confirms a few previously existing studies, it is of interest in that it provides data for Iranian adults on a large-sized sample.

Following concerns remain.

1) Forty % of eligible subjects were not included in the sample because of loss to follow-up, death and missing data (p. 5). The number of participants in these groups should be delineated.

2) The number of subjects in the 5 groups of weight change should be given in page 5 and Tables 2, 3 and 4, and the reasons specified for selecting these weight change categories.

3) Serum triglycerides (and blood pressure) were lower despite a huge decline in HDL-C by 9-10% at the end of follow-up. These observations merit comments since triglycerides are regarded as a mainstay of MetS. Were triglycerides measured by the same method at baseline and at follow-up?

4) The reason why fasting glucose was not affected by weight gain in men needs commenting.

5) Women having higher ORs for incident MetS than men also deserve a brief discussion.

6) Increase in MetS during follow-up has been compared with Taiwanese and American Indian adults, comparisons which seem less relevant than one with Turkish adults of the study (Onat A. et al. Atherosclerosis 2002; 165:285) which used similar MetS criteria, had similar sex distribution of WC, similar follow-up duration and observed a nearly similar annual increase in MetS.

7) The influence of age on the relationship between weight gain and MetS
prevalence has not been addressed due to age being included in adjustments. Since age is known to be a major determinant of MetS, especially in women, providing some data on the stated relationship stratified by age groups and its brief discussion might be in place.

Minor points:
More than several grammatical, spelling or punctuation errors might be corrected.
P 10, first sentence of discussion: moderate rather than “medium” increase is more appropriate since the median change consists of 3%.

Level of interest: An article of importance in its field

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

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests.