Reviewer's report

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

**Version:** 2 **Date:** 8 September 2008

**Reviewer:** Vasilios G Athyros

**Reviewer's report:**

The paper BMC-1014196674217928 by Hadaegh F, et al “Weight change and incident metabolic syndrome in Iranian men and women; a 3 year follow-up study” has substantial relevance to the audience of this journal.

The aim of this study was to examine the impact of sex-stratified weight change (both gain and loss) on the risk of incident metabolic syndrome (MetS) and its components during a 3.1 years follow-up. This study was conducted within the framework of the Tehran Lipid and Glucose Study (TLGS).

A total of 1492 men and 2087 women aged ≥ 20 years with BMI>18.5 kg/m2 were followed over 3 years.

Results showed a 20.6% age-adjusted incident MetS (18.6% male vs. 23.6% women). In men, mild weight gain (WG) predicted high waist circumference (WC) and high triglyceride; medium WG predicted MetS, high WC and high blood pressure (BP); large WG predicted MetS and its components except high fasting plasma glucose. In women, mild WG predicted MetS, high WC and high BP; medium WG predicted Mets, high WC and high triglyceride; Large WG predicted MetS and its components except low HDL-cholesterol. Mild weight loss had protective effect on high WC in both genders and MetS in men.

The authors conclude that weight change showed different effects on MetS in men and women. In women mild WG predicted MetS, however mild weight loss was protective against MetS in men and high WC in both genders.

The manuscript is a secondary analysis of the Tehran Lipid and Glucose Study trial on a relevant issue. The background, the methods, the statistics, tables, figure, and the literature are adequate and appropriate.

Discussion is of appropriate length focusing on results of the study on the original hypothesis.

Comment

1. Data on weight change (both weight gain and especially weight loss) are scarce and valuable.

2. The authors should definitely state the exact design of this study. Was this a prospective or pre-specified analysis or was it an observational study secondary to prospective analysis of the original data? This might be a possible limitation.
3. It would be a mistake to consider the findings of the study of local interest only, as it might have happened in the past.

Minor
Some minor problems with the language and editing “There are some other points that should be considered when examining the results of our study. First is that we have” in page 12, 2nd para, are written with smaller letters than the rest of the manuscript.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

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