Reviewer’s report

Title: Sasang constitutional types for the risk prediction of metabolic syndrome: A 14-year longitudinal prospective cohort study

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Reviewer: Spencer Proctor

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Lee et al., "Sasang constitutional types for the risk prediction of metabolic syndrome: A 14-year longitudinal prospective cohort study"

Summary

Sasang constitutional medicine (SCM) is a traditional Korean medicine system that classifies individuals into four distinct Sasang constitutional (SC) phenotypes (TY, TE, SY and SE) based on physical and personality traits. Previous studies have shown that individuals classified as TE and SY had a higher incidence of the metabolic syndrome compared to those defined as SE. However, previous studies did not use SC classification based on body configuration, organ function, or personality. The present study analyzed data from a longitudinal cohort study to determine the efficacy of SC types at predicting the metabolic syndrome. The results of the study revealed that the most prevalent SC type in the population was TE and the TE type was also at highest risk for developing the metabolic syndrome. Accordingly, the TE type present with higher waist-circumference and levels of total cholesterol, CRP, fasting glucose, blood pressure, triglyceride, and lower HDL-C. The authors conclude that defining individuals by SC types allow for a more accurate risk prediction of the metabolic syndrome than standard diagnostic criteria.

General Comments

Overall, the paper is well written and the study well executed. The introduction provided a suitable background on SC types and provided a clear study rationale that was supported by the study results and discussion. The manuscript is suitable for the journal.

Critique

Strengths of the paper
The SC type provides a unique platform to categorize individuals based off of both physical and personality traits and appears to allow for a more accurate prediction of the metabolic syndrome in this population.

It could be used for early risk detection and allow for a more targeted approach to treating the metabolic syndrome.

Large sample size, evenly distributed men and women

14-year longitudinal cohort study

Main points or major concerns

A statement on relevance to the general population is needed as this classification system is based on the Korean population and may not be applicable to other populations.

Minor/Editorial

Content

What is the general relevance of SC types in the population?

Methods, page 8, line 14: "All participants underwent physical examinations" - who performed these physical examinations?

How were height and weight measures taken?

Sphygmomanometer company name is needed

Storage of blood samples and collection method needed

The group with the greatest prevalence of the metabolic syndrome TE, yet they constituted the largest portion of the study population - was there a correction for number in group or relative weighting?

Have there been any studies that examined the relationship between SC types and all-cause mortality?

Grammatical and Writing Suggestions

Overall, the paper is well written
- Continuous line numbering throughout the manuscript
- Blank page after abstract
- Various paragraphs are not indented

Tables and Figures
- Table 2 is very compact and difficult to read - suggest widening the columns to fit the units for the biochemical parameters
- Figure 1 and Figure 2 should be made a better resolution
- Table legends:
  - Table 1: is SD or SEM presented?
  - Table 1: What currency is" income, won"?
  - Table 2/3: Please state that data is presented as mean (OR)

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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