Reviewer's report

Title: Hypovolaemia was associated with clustering of major cardiovascular risk factors in general population

Version: 2
Date: 5 September 2014
Reviewer: Chih-Yu Yang

Reviewer's report:

Thank you so much for giving me the opportunity to review this paper, in which Kong et al. reported that the CVD risk factor clustering group possessed a higher percentage of hypovolemia defined by BIA assessment than others. In my point of view, there are some points to be concerned.

Major:
1. The diagnosis of volume status should be accurate and reproducible, and it may be influenced by fasting duration, diuretic medications, meal intake, and etc. How many times did these people receive BIA test? The accuracy might be low if there was only one measurement because volume status varies at different time points even within one day. Additionally, the authors mentioned that the study subjects were from a health examination department and they were told to undergo a 10hr minimum fasting period for a venipuncture. The authors also mentioned that these people were told not to take a heavy meal. So what is the fasting or dietary status of these people? Were these people allowed to take meal? Were some people remained fasting when he or she received a BIA test? If it is not unified, the BIA results might not truly reflect the long-term volume status.

2. Regarding the hypothesis and discussion of the association between hypovolemia and CVD risk factor clustering, the authors proposed that their findings might be explained by RAAS activation. In my opinion, this proposed mechanism for health hazards should be a "chronic" or "long-term" RAAS activation. Could the authors convince the readers that these patients were exposed to chronic hypovolemia? I think it will be difficult due to the cross-sectional study design. In the last paragraph of discussion, the authors suggested to increase fluid consumption for patient with CVD risk factor clustering. This comes back to the fundamental question: were those patients diagnosed as hypovolemia used to drink less water or just on that examination day?

Minor:
1. Line 72: What is the meaning of "the mean of the three readings was greater than 10mmhg"? Did the authors referred to the difference between three mean BP data?
Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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