Reviewer's report

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

Version: 2 Date: 10 September 2014

Reviewer: Chun-Fu Lai

Reviewer's report:

Major points:
1. Background: before describing the aim of this study, please specify the rationale why you investigate the association between volume status and clustering of CV risks. (“little is known…” is not a good rationale)

2. Method: this study excluded patients who were taking diuretics. Those who take diuretics are often patients with hypertension and diabetes. So the prevalence of clustering CV risks may be underestimated. Besides, these patients may be over-hydrated so that they should take diuretics. The association between fluid status and clustering CV risks may be quite different with those included in this study. Could the authors analyze this subgroup? or they should make a critical discussion at least.

3. Method: Did this cohort include data of [Na] and plasma glucose levels? These two parameters may have influence on subjects' volume status. These data should be listed in Table 1 and be adjusted in the multivariate logistic regression analysis.

4. Method: The regression analysis used “age, sex, hypovolemia, Hb, decreased eGFR, and serum uric acid” as covariates. How did these selected and the rationale? Why [Na], glucose level, and blood pressure not included? Are these factors chosen before study initiation?

5. Discussion: The last 3 sentences of the first paragraph (Multiple unhealthy lifestyles, ……..to reduce the burden of CVD) are completely the same as that in the Background session. Please delete the redundancy.

6. Discussion: in the last paragraph: “Increased consumption of fluids to improve blood volume would be feasible and cost-effective for controlling the clustering of CV risk factors”, this description could not be supported by the data of this observational study.

Minor points:
1. General: The grammar should be modified by a native English speaker, especially the discussion session.

2. Method: This study included 7900 adults who visited the health checkup clinics. Are they all otherwise healthy and included during health checkup? or are they outpatients of the hospital and included in the clinics? Please specify it.
3. Method: Do the authors have data about smoking in this cohort?

4. Method: This study use TBW/TBWwatson ratio as an indicator of hypovolemia. Does the Watson’s formula predict fluid status well in Chinese population? And why TBW/TBWwatson ratio<1 indicate volume deficit?

5. Discussion: 3rd paragraph, “First, this study used a convenience sample which was not based on a community-based screening and could introduce bias”: please specify and discuss what kind of bias and how to interpretation.

**Level of interest:** An article whose findings are important to those with closely related research interests

**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.