Reviewer's report

Title: Genetic association study of selected candidate genes (APOB, LPL, LEPTIN) and telomere attrition in obese and hypertensive individuals.

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Reviewer: Jun Nakura

Reviewer's report:

The authors describe association studies of three repetitive loci and relative telomere length with obesity or hypertension. As a result, they found that a significant association of relative telomere length with hypertension. Because of the importance of hypertension and telomere biology, their association may be worth assessment, and considering factors affecting telomere length, the significant association seems plausible. I, however, have some serious concerns:

1. This authors should need Hardy–Weinberg equilibrium tests to assess the appropriateness of the selected samples for the association studies.

2. The statistical analysis method applied for the association studies of the three repetitive loci should be described in Methods.

3. Because telomere length is variable depending on the tissues, the origin (leukocytes?) of DNA studied in this study should be clearly stated.

4. Because telomere length is strongly associated with age, age should be adjusted in this study. Moreover, given that the association between telomere length with hypertension was reported to be largely due to insulin resistance (Aging Cell. 2006 5:325-30), other possible confounding factors should also be controlled, and in this context, description of the characteristics of the participants would be indispensable.

5. Even though the association between telomere length and hypertension might be established, cause and effect relationship is unclear, because the possibility that hypertension affects telomere length cannot be excluded. The last word in Discussion, “prediction” should therefore be inappropriate.

I also have some minor comments that the authors might want to consider:

1. Because abbreviations should be defined when first used, “HVR”, “Cp”, and “T/S ratio” should be explained in Background. Inversely, the definition of “RTL” in Methods should be deleted, because “RTL” is already defined in Background.

2. “Telomere attrition is known to be associated with several diseases like diabetes, coronary heart disease and cancer” in the fifth paragraph of Background might need some references.

3. “The systolic/diastolic 120/80” in the second paragraph of “Sample collection”
in Methods should be described as “equal or under”.

4. “Obesity is a condition in which the natural energy reserve, stored in the fatty tissue of humans and other mammals, is increased to a point where it is associated with certain health conditions or increased mortality “ in the second paragraph of “Sample collection” in Methods should be deleted or described in Background.

5. In Figure 2, “normotensive” should be “normal” and the bars should be defined as standard deviation or something like that. In relation to these bars, numeral description should also be indispensable.

6. All pages should be numbered and spacing between words should be uniformed throughout the paper.

7. Finally, thoughtful discussion on the association of telomere length with hypertension would be welcome, especially in comparison with previous papers including Demissie S et al. (Aging Cell. 2006 5:325-30), Jeanclos E et al. (Hypertension. 2000 36:195-200), and Fitzpatrick AL et al. (Am J Epidemiol. 2007 165:14-21).

I hope my comments could be helpful to improve the paper.

Thanks for consideration.

**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