Reviewer's report

Title: Gender differences in adiponectin level and body composition in older adults: Hallym Aging Study

Version: 1 Date: 18 September 2013

Reviewer: Mario Luca Morieri

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Major Compulsory Revisions

1) Discussion on testosterone: 2th paragraph is unclear and need correction.
   1a. Following sentences are divergent: “Interestingly, an inverse correlation was found between testosterone and adiponectin in males and females. … … However, the correlation between testosterone and adiponectin in males was positive, although insignificant. The results of our study suggested that hormonal changes according to age and gender, especially change of testosterone in females, could be an important factor influencing the paradoxical finding of adiponectin in older adults.”
   1aa This data are statistically insignificant, thus it should not be so emphasized.
1b Statistical analysis need correction: Table 3 “Multiple linear regression analysis of the relationship between adiponectin concentrations and body composition”, in this Multivariable associations also testosterone was included, without metabolic variable. Testosterone should be analyzed with other metabolic variable.
1c. Authors should compare their findings with other work (e.g. GA Laughlin et all. Sex-specific determinants of serum adiponectin in older adults: the role of endogenous sex hormones. International Journal of Obesity (2007) 31, 457–465.)
1d. Abstract conclusion: author asses that hormonal change can influence the adiponectin paradox in older adults; this is not reported in the “abstract results” and furthermore finding from this work are not statistically significant.

2) Author should better explain the association of leg bone mineral content with adiponectin in the discussion. Please compare this work with others with similar and different result ( e.g. Basurto L et all. Eur J Endocrinol. 2009 Feb;160(2):289-93. Adiponectin is associated with low bone mineral density in elderly men)

3) Methods, Study population: If survey is not included in this study, authors should explain better when they have collected samples and performed the data collection ( at baseline?) and why/how only 320 partecipants were selected.

4) To this reviewer table 2 is unclear when reporting comorbidities on treatment. Authors should clarify how it was obtained.
1) Introduction: “Some researchers reported that not only visceral adipose tissue but also subcutaneous adipose tissue are both associated with adverse cardiometabolic risk”. Author should change the sentences as follow: “...but also abdominal subcutaneous adipose tissue are both...”

2) Introduction: “With age, body composition, especially visceral adiposity and muscle mass, change.” At least one reference should be add.

3) Table 1. Body composition is reported in gram, whereas body fat is reported as percentage. Author should report all data on body composition in the same method.

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

**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’