Reviewer's report

Title: BMI, Percent Body Fat, and Regional Body Fat Distribution in Relation to Leptin Concentrations in Healthy, Non-Smoking Postmenopausal Women in a Feeding Study

Version: 1 Date: 22 December 2006

Reviewer: Marie Cantwell

Reviewer's report:

General

BMI, Percent body fat, and regional body fat distribution in relation to leptin concentrations in healthy, non-smoking postmenopausal women in a feeding study.

Somdat Mahabir, David Baer, Laura L Johnson, Mark Roth, William Campbell, Beverley Clevelend, Philip R Taylor.

This manuscript describes the relationship between body mass index, fat distribution and leptin levels in healthy non-smoking postmenopausal women during weight maintenance. It is a nice contribution to the literature and requires only minor changes. It could however be significantly improved upon if the authors included measurements of other important hormones such as ghrelin and adiponectin. The authors should include these measurements if they are available. In addition, did the authors assess physical activity levels and if so did this impact the associations?

The authors need to explain clearly that the results presented in this manuscript refer to the control arm of the feeding study only and remove any reference to 'each dietary period'.

The methods used by the authors to assess the associations are appropriate and are sufficient to replicate the work.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached) NONE

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. TITLE: Please define BMI in the title.

2. ABSTRACT:

In the final sentence of the ‘methods’ section the term ‘each diet period’ does not need to be used as only the control group of the other study was used.

3. Why were the results for the association between lean body mass and leptin not included here?

INTRODUCTION

4. Sentence 5: Were other hormones measures (ghrelin, adiponectin), if so please include here.

5. Last sentence on the page 3 ‘In addition…and circulating leptin concentration’ has already been mentioned.
6. Sentence beginning ‘Indeed, there may be cross talk…. Please explain and expand upon what is meant here.

MATERIALS AND METHODS

7. Please make it clear that the group used in the study was the control arm of the feeding study.

8. Why were the fat measurements taken at week 4 and not at week 8? ‘…measures of BMI were taken on the same day.’ How were these measured? Who assessed BMI?

Subjects

9. Please include the socio economic status of the participants?

Diets and Feeding

10. Why was weight measured on each weekday, and which of these measures was used to calculate BMI? Please provide information on anthropometry, how was weight and height measured? Was waist and hip measurements taken and if so what is the association between waist: hip ratio and leptin concentrations?

Biological sample collection and analysis

11. Again ‘…in each dietary period’ is mentioned although there is only one dietary period.

12. Please include additional information regarding the handling of blood samples, e.g. time between sampling and analysis and provide the coefficients of variation for the assay.

STATISTICAL ANALYSIS

13. ‘Additional models estimated percent changes in serum leptin concentrations…’ The authors need to re-phrase this sentence as repeated measures would be necessary to have information to show percent change in leptin.

14. The authors say that race was included as a categorical variable (African American, yes/no)…” Were Asian participants excluded from this analysis?

15. Again ‘dietary period’ is mentioned when there is only one dietary period.

RESULTS

16. Was lean body mass correlated with BMI or total fat mass? Did the authors assess the association between lean body mass and leptin concentrations while adjusting for total fat?

DISCUSSION

17. The third sentence states that ‘Higher lean mass was also associated with higher serum leptin concentrations…’ but this is only when BMI is not included in the model, please include in the discussion that the association is not present after adjusting for BMI. Also could the authors provide some potential reasons for this?

18. The authors mention in sentence 5 that a ‘study similar to ours…’ although they have mentioned earlier that theirs is the ‘first study’. Could they please include and highlight the differences between their study and that of Havel et al.

19. Page 11: First sentence: please provide references for these studies.

20. Page 11: the sentence beginning with ‘Further, our results…’ has been repeated earlier in the discussion section, please delete this sentence.
21. Page 11: the sentence beginning with 'Our adiposity measures…' should be in the methods section of this paper.

22. It needs to be stated that the results are not generalisable to all group as the participants were non-smoking, postmenopausal, women who were not taking hormone replacement therapy.

23. Was habitual alcohol intake assessed and if so can the authors include this in their analysis?

24. Page 13: second sentence: ‘Because of the well-known…’ what are the authors referring to here, please elaborate.

TABLES

25. Table 3: The footnote says ‘… for each hormone…’ were other hormones measured and of so can the authors include these in their manuscript.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions
Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.