Reviewer's report

Title: Body fatness and breast cancer risk in women of African ancestry

Version: 2 Date: 17 June 2013

Reviewer: Patricia Sheean

Reviewer's report:

Thank you for the opportunity to review this paper on the associations of body composition on breast cancer risk in AA women. Using a case control design, the authors report on the associations of between body mass index, percent body fat and body fat distribution in a large number of women with confirmed breast cancer making comparisons to community recruited controls. Overall the findings are fairly null, that is, no strong associations were found. While negative findings are often subject to publication bias, I feel strongly the findings of this study are important and make a novel contribution to the literature. Very few studies have examined body composition and even fewer have been conducted among AA women.

In order to ready this manuscript for publication, several suggestions are offered. Some comments are editorial and stylistic in nature; however, methodological clarifications are also needed as well as major revisions to the interpretations within the discussion section. In general, the writing needs more polishing. There are conversation tones throughout and issues concerning over interpretation. (P reflects paragraph; S reflects sentence within each section)

Major compulsory revisions:

Data collection:

P3, S5: Is there a reference for this? Two centimeters presents considerable variation in these measures, which are very difficult in overweight and obese persons.

P3, S7: Were participants provided any information prior to the BIA measurement to increase its precision? BIA, while a practical field measure, is fairly imprecise. In order to increase precision, instructions are needed. (Per the manufacturer, participants are to be instructed to avoid alcohol 48 hours before the test, no intensive exercise 12 hours before the test, avoid eating and drinking 4 hours before the test, empty bladder 30 minutes before test and avoid diuretics 7 days before testing, if possible.)

Results:

*The authors use the term “a suggestion of” several times throughout the results (here and in the abstract) and in the discussion, intimating a statistical relationship. I do not see this defined and in general, I believe it is an over interpretation of the study findings. Suggest refrain from using this term.
My major concern with the reported findings is related to Tables 2 and Table 3. It is unclear why OR2 is included. If the authors are examining the associations of waist circumference with breast cancer risk, why is it necessary to adjust for BMI or vice versa? Both are measures of adiposity; BMI is a field tool for overall adiposity and WC is a field tool for visceral adiposity. These are collinear and therefore, it does not seem logical or prudent to adjust for these while examining the other. This especially concerning since the OR2 for WC and HC become highly significant and are a focal point of the study findings in Table 3. What could be the biological plausibility of these findings?

Discussion

The authors need to keep these findings in better context. At times cause and effect language is used. While a case control design is strong, it precludes this language as only associations can be examined.

Additionally, the lack of discussion on the mechanistic associations with body fat and breast cancer was disappointing. The discussion read more like a list of studies that refuted or agreed with the current study findings, rather than a thought provoking insightful look into this field of study. For example, why would findings from AA women be different? Be specific. For example, there are some imaging data to suggest differences in visceral adiposity in AA vs EA women with breast cancer. Other questions for discussion development...what motivated this study regarding body composition? How would this study make a contribution to the breast cancer disparity?

Further, there are a number of studies that also discuss differences in breast cancer risk may be due to co-morbid conditions. This was not addressed in the analyses or discussion and is a major oversight.

Minor compulsory revisions:

Title
Suggest revising to show the general null findings of the study

Abstract
Methods: Should say, “We evaluated the associations of body mass index, body fat...
No need to mention the brand of scale, just BMI.
Results: Will need to be tailored based on comments below.
Conclusions: Should acknowledge these grossly null findings and specifically acknowledge the next steps in this research trajectory

Methods
Overall, this section would benefit from parsimony. Please review for more efficient ways to report recruiting.
P1, S3: Suggest changing to, “In brief, cases were AA and EA women…”
P2, S3: As worded this sounds as if the eligibility criteria changed. It is okay but when worded as such, it creates the needed for further explanation. Suggest changing to incorporate all methodologies.

P3, S2: This is a great example of conversational writing (“but with additional funding we extended…” Suggest minimizing these statements, especially within the methods section.

P3, S11: Unsure why this sentence is included (Community recruitment…); seems like it can be referenced in the sentence that follows for efficiency.

Statistical analyses
Overall easy to follow.

P2; S4: Is it unclear how Hispanic women can be included in this study that examines AA women. It would seem that self-identified as AA would be included in the eligibility criteria for these analyses.

The statistics section does not include anything about diet data, nor do the results or tables. Is it then necessary to include the description of this in the methods or was this an oversight in the analyses?

Page 14, paragraph 2: Suggest omitting the statement that DXA is not feasible in a large population based study. The NHANES participants in the US undergo DXA so this alone refutes this statement. If DXA imaging was not possible for practical purposes, access issues or cost restraints then these would certainly be acceptable reason for using BIA and anthropometry.

Page 15, first sentence: These studies do not confirm this relationship. This is over stated; suggest rephrasing.

P1, S7-9: No new data can be presented within the discussion section.
*Need to consider and include the limitations of BMI, BIA and the anthropometric measures utilized. These are not mentioned and all are prone to imprecision.

Conclusions
*Need to be revised and objective. Suggest adding how future studies could build off these findings (ie, next steps). Be specific.

Tables
Overall, abundant, clear and easy to follow.
Table 1: Can you include co-morbid conditions (eg, diabetes, hypertension, CVD)? Smoking data?
Table 2: Considering removing OR2 adjusting for WC.
Tables 3-5: Considering removing OR2 adjusting for BMI.

Discretionary revisions
Background
Overall, the introduction does a good job of introducing this topic and relaying the novelty of this study.
P1, S4: Should say, “AA women with breast cancer also experience….”
P1, S5: Too long and should say “suboptimal treatment for breast cancer, lifestyle…”
P2, S5: Suggest, “…the impact of BMI on breast cancer risk in AA women is generally…”
P2, Last sentence: This adds very little and yet is important. The impact of body composition on what? Should logically lead to the last sentence, “Therefore we evaluated…..” This last sentence needs to be included with the second paragraph of the background. It cannot stand alone.’

Statistical analyses
Last sentence, “SAS version…” does not stand alone and should be included with the second paragraph. Need to include the p value used to denote statistical significance.

Discussion
P1, S2: I believe the authors mean controlling for BMI not independent of BMI here. This is again misstated on page 14 in the paragraph starting, “The role of…”

Limitations (page 15):
P1, S1-6: What is the perceived limitation? There is a great deal of explanation but the limitation is not stated.

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.