Reviewer’s report

Title: Association of High Obesity with PAM50 Breast Cancer Intrinsic Subtypes and Gene Expression

Version: 3 Date: 22 December 2014

Reviewer: Erica Warner

Reviewer’s report:

This is an interesting and well-written manuscript that explores the association between BMI at/around diagnosis and tumor gene expression using PAM50. There are, however, several issues that should be addressed.

Major compulsory revisions

None

Minor essential revisions
1) It’s not obvious from the abstract that this is a cross-sectional study. It should be stated up front.
2) The authors should briefly discuss the limitations of self-reported height and weight perhaps particularly among women who know they have breast cancer and the potential effect of measurement error.
3) Why didn’t you adjust for smoking? While associations are weak with breast cancer overall, there are potential associations with subtypes and smoking is clearly associated with BMI.
4) What is the parent study (p. 7)? LACE? Pathways?
5) The authors should provide some interpretation of the magnitude of the associations in the results section instead of just higher or lower.
6) Please clarify how BMI was ascertained and timing—were women asked to report their weight at a reference date? Were they asked to report their current weight? It’s not clear from the methods and the stated range of BMI being from '12 months prior to two months after diagnosis' doesn’t match with LACE participant enrollment on average 2 years after diagnosis.

Discretionary revisions

1) Not sure of the utility of the clinical tissue markers section in the methods. I can’t where any data about ER/PR/HER2 from IHC are referenced or used in the analysis or appear in the results.

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.

Declaration of competing interests:  
I declare that I have no competing interests