Reviewer's report

Title: Body mass index and survival after breast cancer diagnosis in Japanese women

Version: 3 Date: 9 March 2012

Reviewer: Huiyan Ma

Reviewer's report:

Comments for the 1st revision:

My previous comments have been addressed satisfactorily.

In addition, I think the manuscript could be improved if the authors would like to fix the following issues.

1. Abstract, Results:
   1) Change “(HR = 2.61; 95%CI: 1.01-6.78 for BMI #25.8) “ to “(HR = 2.61; 95%CI: 1.01-6.78 for BMI #25.8 vs. 21.2 to <23.3 kg/m2) “.

   2) Could authors change “For these patients, positive associations were also observed between higher BMI and all-cause and breast cancer-specific death (p for trend for BMI #21.2 = 0.020 and 0.031, respectively).” to “Analyses by hormonal receptor status also showed a positive association between BMI and mortality risk among patients with ER+ or PgR+ tumors and with BMI #21.2 kg/m2 (p for trend: 0.020 and 0.031 for all-cause and breast-specific death, respectively)?

2. Abstract, Conclusion: Could authors change “Our results indicated that higher BMI was significantly associated with an increased risk of all-cause death among premenopausal patients, and with an increased risk of all-cause and breast cancer-specific death among patients with ER+ or PgR+ tumors. Additionally, lower BMI (BMI <21.2) was associated with all-cause and breast cancer-specific death among patients with ER+ or PgR+ tumors.” to “Our results suggest that both higher BMI and lower BMI are associated with an increased risk of mortality, especially among premenopausal patients or among patients with hormonal receptor positive tumors?

3. On page 7, “To test whether the associations between BMI and all-cause death and breast cancer-specific death were modified by menopausal status and hormone receptor status, we constructed a likelihood ratio test comparing two multivariate Cox proportional hazard models (likelihood ratio test for heterogeneity of trends).” It is not clear what kind of models that were compared by authors? Did authors compare model with interaction term (BMI*Monopausal status) to that without the interaction term?

4. On page 8, “This study demonstrated that higher BMI was significantly
associated with all-cause death among premenopausal patients after adjustment for clinical and known risk factors of breast cancer”. Should it be “known factors that are associated with the mortality risk of breast cancer patients”?

5. How about dropping “Furthermore, only two previous small-scale studies [25, 26] have assessed the association between BMI and survival among Japanese breast cancer patients and controlled for only a few known risk factors without considering hormone receptor status. More studies will be needed to assess the generalizability of our findings.” since authors have already mentioned the first part in Background section and the second part is confused? More studies are needed to verify authors’ findings instead of to assess the generalizability.

**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.