Reviewer’s report

Title: Cost-effectiveness analysis of the introduction of S-1 therapy for first-line metastatic breast cancer treatment in Japan: results from the randomized phase III SELECT BC trial

Version: 1  Date: 25 Jul 2017

Reviewer: Jeonghoon Ahn

Reviewer’s report:

This reviewer congratulates the authors accomplished a good cost effectiveness research comparing the conventional chemotherapy and new oral medication for the patients with metastatic breast cancer (MBC). The manuscript is currently good enough but this reviewer suggests the following few points of clarification to make it even better:

General Items

1. Even though this study is about cost effectiveness analysis, it would be better to have a summary of clinical outcomes between two therapies, such as any clue why inpatient cost is higher for the S-1 group. Due to higher liver metastasis rate? Due to higher Bone metastasis rate? Due to longer hospitalization?

2. Any validity and reliability study on EQ-5D for the Japanese patients with BC or MBC?

3. Any mapping study between EQ-5D and EORTC QLQ-C30? If it exists, a sensitivity check based on mapping result can be desirable. If not, EORTC QLQ-C30 differences between two groups are desirable.

4. Drug price sensitivity analyses were included but maybe better to include threshold value of drug price which is typically of interest to the decision makers.

5. Including Standard Deviation for the values would be appreciated.

Specific Items

Abstract p4 line 24 ~is cost effective with a high probability. -> ~is highly likely to be cost effective.

p12 line 7-8 Patient was also added to the model as a random effect -> Patient individual effect was also added~

p12 line 10-11 QALYs are calculated by the formula given but any sensitivity check on this formula such as Last Observation Carried Forward method is desirable instead of averaging between two visits values or any justification of this formula is wished.
p14 line 21-22 ~interpreted to mean that the medical costs are 0, not missing. -> ~interpreted as zero medical costs instead of missing data.

p15 line 4 Figure 1 shows a couple of crossing points between two groups. Any explanation might be helpful why they are crossing each other. Small sample size?

p15 line 11-12 Any explanation on why the S-1 group has a higher inpatient cost will be appreciated.

p16 line 1-5 Any differences in composition of different drug classes between the two groups will be interesting with an explanation.

Figure 2 For the readers without much knowledge on the PSA, A threshold line of 5 Million JPY WTP line can be included

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
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Yes

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I am able to assess the statistics

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