Reviewer's report

Title: Detailed analyses of a sertraline randomized withdrawal study in patients with major depressive disorder

Version: 1 Date: 16 February 2010

Reviewer: Yingwei Peng

Reviewer's report:

Major Compulsory Revisions:

The novelty of this work is to fit both the Cox cure model and cure survival CART for the data. Using both Cox cure model and cure survival CART is rarely seen in the literature and the authors made a good attempt to combine the two methods with a hope that the combination of the two methods will reveal more than using them individually for the data. Unfortunately, the work does not show any solid gain from the proposed approach. The results from the Cox cure model look good. But it is not clear how using cure survival CART will improve the results from Cox cure model. There is very little discussion on the results from cure survival CART in the discussion and conclusion sections.

I also have concern over the application of Cox cure regression to the dertraline data starting on page 13. First of all, it is not clear where the three guidelines came from. It is not clear either how the AIC values for the semiparametric Cox’s cure regression are computed, and how the AIC values are combined with the guidelines to produce the results in Table 3. The AIC values should be given in the table too.

The authors indicated that they tried to examine the results from the semiparametric Cox cure model by fit the data with cure survival CART based on a parametric Cox cure model with exponential baseline distribution. Unless the true baseline distribution for uncured patients is approximately exponential, the estimates from the semiparametric Cox cure model and those from the parametric Cox cure model are usually sensitive to the baseline distribution assumption. The authors did not consider the potential inconsistency between the two models when they considered both for their data.

Minor Essential Revisions:

1. Page 3, line 2: There should be a space between “facts” and “on”.
2. Page 4, line 13: “he” should be “The”
3. Page 9, line 7: There should be a pair of parentheses around 1-ch in the numerator. Otherwise the equation would not be right.
4. Page 10, line 1: No definitions are given for R(l(h)) and R(r(h))
5. Page 11, line 8 from bottom: “10-fold cross-validation” is not defined.
6. Page 13, line 7: I don’t think this claim is appropriate for Cox’s cure model (and I don’t think ref[16] supports this claim either). Cox’s cure model itself will not lead to an over parameterization and it does not have identifiability issue if the tail of the baseline uncured distribution is properly handled as suggested in ref[16].

7. Table 4 is not discussed anywhere in the paper

8. Page 15, line 8 from bottom: Delete “what patients”

**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