Reviewer’s report

Title: Prognostic parameters for recurrence of papillary thyroid microcarcinoma

Version: 4 Date: 12 August 2008

Reviewer: Eric Siegel

Reviewer’s report:

I was originally Reviewer #3, and I raised many statistical concerns. The authors responded diligently and appropriately to all my concerns. I am happy that they did not do what I recommended for Tables 3 and 4, and instead chose to present just hazard ratios, confidence limits, and p-values. That is definitely simpler than what I wanted, and will be easier on the reader.

I note that Reviewer #4 raised a statistical concern about Table 1, and requests that the authors justify their null hypotheses in terms of clinical expectations. Please permit me to step in here on behalf of the authors: Based on my experience, nine out of ten manuscript reviewers (and the vast majority of future readers) will want to see Table 1, and they will want to see the p-values in Table 1. As to the null hypotheses implied by Table 1’s statistical comparisons, justification of said hypotheses comes from an observational question, not a clinical expectation. The observational question, repeatable for each patient characteristic, is the following: "Are these two groups reasonably in balance for this patient characteristic, or are they significantly out of balance?" This is the question that most readers of Table 1 will be asking, and we probably would do well not to try to reformulate the question in terms of clinical expectations.

Minor Essential Revisions: The first two will be about the statistics, and the other three will be about the English:

(1) Table 4, Row with Age at Operation, Middle Column: The HR says "INF" but the 95%CI says "0.67-2.76". How can one have an infinite HR with a finite-ranged 95%CI? I'm guessing the HR should be finite and probably equal to about 1.36.

(2) Tables 3, 4, 5, and 6, referring to the rows where the HR, 95% CI, and P-value are all indicated with a dash for the reference groups (age>45, "Women, "Multifocal tumor", etc.): For these reference groups, report HR as 1.00 instead of using a dash. Continue using a dash for their 95% CI and their P-values. A HR of 1.00 accompanied by dashes for 95% CI and P-value is the customary way to indicate which group is the reference group.

(3) Abstract, red sentence in the Results part that says "Multivariate analysis with using Cox's proportional hazard model showed...". Let's shorten that. Simply say "Multivariate Cox-regression analysis showed...".

(4) Methods, in the Definition of Clinical Outcome paragraph. I like the red
sentence, but it's missing a couple of words and there are a couple other words I want to change. Make the red sentence read as follows: "The time to recurrence was defined as duration between the date of first operation and date of detection of recurrence by diagnostic procedure (for those who recur) or last show-up date to our hospital (for those who do not recur)."

(5) Methods, in the Statistical Analysis section, starting on Page 8, just call it "Cox regression" instead of "Cox's proportional hazard model", and distinguish more clearly between univariate versus multivariate Cox regression. May I suggest the following passage for your use: "Univariate analyses were performed separately for each variable using Cox regression. Variables for which the P value was <.2 in univariate analysis were included in a multivariate Cox-regression model. A backward elimination process was used to develop the final multivariate model, and adjusted hazard ratios (HR) and 95% confidence intervals (CI) were calculated. P values of <.05 were considered significant."

**Level of interest:** An article whose findings are important to those with closely related research interests

**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.