Reviewers report

Title: Clinical significance of palliative gastrectomy on the survival of patients with incurable advanced gastric cancer: A systematic review and meta-analysis

Version: 1 Date: 10 October 2013

Reviewer: Ijaz Jamall

Reviewers report:

Major Compulsory Revisions:

1) P. 2 Results: “Fourteen studies with 3003 patients were included in this study…”

A line should be added to the bottom of Table 1 showing the totals or averages in each column. By my calculation, I obtain a total of 3,007 patients with 1,465 in the palliative gastrectomy group and 1,547 without palliative gastrectomy. The numbers are incorrect in the text and in Table 1.

2) P. 2 Results: “Meta-analysis revealed palliative gastrectomy to be associated with a significantly [sic] improvement in overall survival [HR 0.56; 95% CI 0.39-0.80; p0.002] compared to patients without palliative gastrectomy.

All patient outcome measures in cancer studies are heavily influenced by the length of follow up. Thus, the authors should indicate the length of follow up in each of the 14 studies subjected to the meta-analysis and how the different follow-up periods were weighted in the calculation of the hazard ratios (HR).

3) P. 5 Inclusion and Exclusion Criteria: “All included studies were comparative studies of patients with incurable advanced GC…”

Please define the term “advanced GC” and please provide references for that definition as appropriate.

4) P. 7 Statistics: “A weight [sic] average of the median survival times with 95% CI was calculated where the weights represented the amount of available information in each series.”

Please clarify what information on median survival times was available for each of the 14 studies evaluated in tabular form and how the variability in survival time was weighted. Since we are talking about interventions and their effect on median survival times in the context of advanced gastric cancers, I would assume that the authors would assign a lesser weighting to studies that had shorter follow-up periods than those with longer follow-up periods. Was this done? A note of clarification would be most helpful.

5) P. 7 Long-Term Survival: “In total, 12 articles reported median survival time {23-25, 27-32, 34-36}. In the palliative gastrectomy group, the weighted average
of the median survival time was 14.43 months (995% CI 12.6-16.24); and in the non-gastrectomy group, the weighted average of the median survival time was 6.97 months (995% CI 5.12-8.82). Overall survivals were extracted in 13 articles [23, 24, 26-36].

Note it is more than a statistical faux pas to exclude the study from reference #25 which consists of 74 patients. Please explain why this was done and how it impacts the results?

6) P. 8, l. 6 et seq. “Among the articles, eight [23, 24, 30-32] reported stage M1 GC…”

Since the analyses being conducted are on patients, the number of patients including their percentage rate according to the overall patient population under investigation should be cited along with references so that the reader can more readily assess the value of the information presented. This comment applies to the entire manuscript.

7) P. 9, l. 3: “and the HR of the distant lymph node metastasis subgroup was 0.08 (95% CI 0.00-3.07, p=0.17; Figure 4).

This calculation is difficult to understand, statistically or clinically. An examination of Figure 4 shows that of the two studies included in this category, one (Lin 2008) yielded a HR of 0.43 while the second (Chen 2012) yielded a HR of 0.01? Please explain this discrepancy and the methodological issues in the original study or in the weighting that led to such an analysis.

8) P. 10 Discussion: In general, I like the way the authors discuss their findings in the context of the broader literature and with recognition of the limitations of their study. The fact that some of the studies they used in their met-analysis included median survival times of 1-year, 3-years or 5-years (last para on p. 10) is a candid presentation of the limitations of the data but how these were weighted in their meta-analysis ought to be presented in the Methods Section.

9) P. 11, l. 1: “We extracted the median survival times and obtained weighted average values.”

Please explain how this was done and how “median” survival times were “averaged”.

Minor Essential Revisions:

10) P. 11, l. 4-6: “Although there was significant heterogeneity…overall survival rates with an RR [sic] of 0.58 (95% CI 0.48-0.71).

The “RR” appears to be a typo and the statistic cited is HR not RR?

11) Figure 4: 2.2.1 Peritoneal dissemination gives a Z score of 1.36 (p=0.17) and under 2.2.3 Lymph node metastasis, the Z value is given as 1.36 (p=0.17).

Please explain how two very different sets of data could yield identical Z scores
and probabilities?

12) If a statistician analyzed these data, she/he should be included as an author in this paper which relies so heavily on statistical analyses of data.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

Nothing to declare.