Reviewer's report

Title: Irradiation-induced telomerase activity and gastric cancer risk: a case-control analysis in a Chinese Han population

Version: 2 Date: 11 March 2010

Reviewer: Sean AM Cleary

Reviewer's report:

The authors have made a considerable effort to address the comments of the reviewers. Many issues have been dealt with satisfactorily but a few outstanding items remain.

Major Compulsory revisions

Page 2. Conclusions

I feel that the conclusions stated in the abstract are too strong and not supported by the work described in the manuscript. The results of these experiments are hypothesis-generating rather than conclusive. The authors demonstrated an increased rate of radiation induced telomerase activity in Gastric cancer cases and this “may be” associated with gastric cancer risk or development.


“Actually (sp), the level of #-radiation induced telomerase activity is only a biomarker for the evaluation of the inherited inducibility of telomerase activity, but not truly clinically relevant disease”.

In this single sentence the authors are responding to several comments from the 2 reviewers….First: because the blood samples were drawn after diagnosis the authors cannot state whether the observed increased telomerase activity was present prior to cancer development and therefore involved in cancer risk or whether it is a systemic biomarked of gastric cancer. Second: is the observed increase in telomerase activity clinically significant/relevant

These are two important weaknesses in this study and its design and directly affect how the results should be interpreted. I do not think that combining these two issues into the above statement accurately addresses the problem. For starters...increased telomerase activity “may be” a biomarker....

I am not sure that the authors have adequately responded to these issues. I would suggest a more comprehensive series of statements on these issues in the discussion section of the manuscript would be appropriate (possibly on page 14 paragraph two where the first issue is alluded to).

Page 5 Paragraph 2

The authors have appropriately explained that they did not collect data on H.pylori infection status and that H.pylori eradication is rarely performed except in
cases of confirmed ulcer disease. You cannot however “ignore” the fact that the authors think only a minority of patients received treatment. The authors should merely state that, in their opinion, the influence of H.pylori treatment on the findings of the study should be limited.

Page 8. Power calculations

Power calculations are done to determine the ability or power (beta) to detect a pre-specified difference in outcomes with a pre-specified significance level (alpha) given the sample size of the study. For most scientific studies alpha (or the threshold of significance) is set at 0.05 and the authors select what they feel is a clinically meaningful difference in a dependent variable. The authors state “the a-priori statistical power of 95.8% was obtained in this study” is inadequate and does not provide the necessary information. I question the validity of the calculations used to obtain the 95.8% figure since this would appear very difficult to obtain given the sample size unless the difference was very large. Also, power is not something that is “obtained”, it is inherent in your study. A proper power statement should read something like “given the sample size of the current study we anticipated __% power to detect a __% change in telomerase activity at the 0.05 significance level”.

H.Pylori status

On page 8 paragraph 2 the authors state there were significant differences in H.pylori infection status between cases and controls in addition to differences in smoking and drinking. On page 9 in their multivariate analysis, smoking and drinking were included in the multivariate model but not H/pylori status. Why? The analyses should be repeated adjusting for H.pylori status or the authors should explain why this was not included in the model. Since H.pylori induces chronic inflammation which may alter telomerase activity, this would be a crucial point to address.

Minor Revisions

Page 6 Paragraph 2

The statement that the TRAP-ELISA assay performed comparably to the RT-PCR assay requires a reference supporting this opinion.

Page 11 Paragraph 3

The p-values and results of previous studies added in parentheses are unnecessary.

Table 2

Since the authors used h.pylori antibody status in their study, “h.pylori infection” should be re-labelled “h.pylori antibody positivity” to more accurately depict this data.

**Level of interest:** An article of limited interest
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:
'I declare that I have no competing interests'