Reviewer's report

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

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Reviewer: natalie coburn

Reviewer's report:

An interesting study examining telomerase activity in controls and GC patients.

Patient selection seemed valid.
Molecular techniques seemed valid.
1) why did you chose lymphocytes instead of tumor cells and normal gastric mucosa?

Statistical techniques, and the inferences drawn are questionable.
1) The confounding effect of age is difficult to account for, esp since cancer incidence increases with age, and DNA instability may worsen with age.
2) although the increase in rad induced telomerase activity is statistically increased, is this really a clinically relevant increase? are there other studies to suggest that this is a CLINICALLY relevant increase in activity? the widely over-lapping values suggest that it may not truely be a relevant activity
3) why did you chose the median for high and low activity? this appears to be competeletly arbitrary? do other studies that are similar in nature make such arbitrary decisions regarding cut-offs? did you do sensitivity analysis to determine if tertiles or quartiles would make more sense? how was this validated?
4) at the end of the results, you state that there was no notable differenece in GC risk, but the confidence intervals appear to all be above 1. this does not make sense

discussion
1) you state that radiation induced telomerase activity was higher in bladder and lung cancer...were these lymphocytes, or tissue? how much higher? is this in line with your study, or is the difference less for GC?
2) there is no evidence for causality, so some of your conclusions are too strong

Level of interest: An article of limited interest

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

Statistical review: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:

I have no competing interests