Author's response to reviews

Title: Alcohol consumption and the risk of morbidity and mortality for different stroke types - A systematic review and meta-analysis

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Version: 2 Date: 21 March 2010

Author's response to reviews: see over
21 March 21, 2010

To the Editor-in-Chief
BMC Public Health

Dear Editor,

Attached please find our revised manuscript entitled, “Alcohol consumption and the risk of morbidity and mortality for different stroke types - A systematic review and meta-analysis”.

Thank you for both of the reviewers’ comments. We have addressed each of the reviewers’ comments and concerns below and revised the manuscript accordingly.

We are looking very much forward to your reactions to this manuscript. In case you have any questions or require further information, please contact us.

Sincerely,

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Title: Alcohol consumption and the risk of morbidity and mortality for different stroke types - A systematic review and meta-analysis

Reviewer #1:

The present systematic review and meta-analysis found that, heavy alcohol consumption increases the risk of both ischemic and hemorrhagic strokes, while light or moderate alcohol consumption may be protective against ischemic stroke. This is sort of a confirmation study, but well designed and the results are interesting.

A: Thank you.

1. One thing that would help is to add the results of associations between alcohol consumption and stroke subtypes stratified by study design: cohort study and cross-sectional study.

A: As we wanted to exclude studies without sufficient control, our study design inclusion criteria allowed only two types of studies, cohort and case-control studies. No cross-sectional study was included. Secondly, we have discussed the results of association between alcohol consumption and stroke subtypes stratified by study design as a sensitivity analysis in the discussion section (page 13). Since the results indicated no change in the shape of the curve, it seems unnecessary to us to further elaborate on these results.

2. One of the main results of this study is the difference between mortality and morbidity as an endpoint, especially women. However, the mechanisms by which higher effects of alcohol on mortality compared with morbidity have not been discussed in the text. The authors should discuss this in detail in the discussion section.

A: Mechanism of alcohol on cerebrovascular cells and organs is identical for morbidity and mortality and for men and women. Other factors and mediators could be at play here, and future research by our group is focusing on parsing out these issues.

Reviewer #2:

1. I would like to read a bit more about how this paper furthers our understanding. It updates several other meta-analyses and reproduces previous findings. It does separate fatal and non-fatal strokes, but the “what is new” is not clear in the abstract.

A: We have added “what is new” in the abstract.
2a. To state that “Preventive measures should be initiated” is a bit weak.

A: We have modified this sentence in the abstract.

2b. I think the paper would be improved if the authors developed the public health message a bit further. Do the authors think that abstention is best for health? Given that there are reputed cardioprotective benefits from moderate drinking (mentioned on p14) would it be better from a total public health perspective for all to become moderate drinkers? Further reference to the other health consequences (positive and negative) from drinking alcohol would be useful to set this in context.

A: This has also been discussed in the last paragraph of the discussion.

3. P3 last sentence in background is not clear

A: This is now clear.

4. The authors state (p5) that “For those studies that did not report measures of association separately by sex, the estimates were used for men as well as women.” Could the authors clarify in the text how many studies this involved as there is quite an emphasis on sex differences in the associations in this paper.

A: Now in the text we have cited all those studies that did not provide estimates by sex.

Gorelick 1989, IS
Thrift 1999, HS
Sacco 1999, IS
Longstretch 1992, HS
Gill 1991, IS/HS
Caicoya 1999, IS/HS
Klatsky 2001, IS
Kiyohara 1995, IS/HS
Sankai 2000, HS

IS: ischemic stroke; HS: hemorrhagic stroke

5. In recent years, a drink in the UK can be considered to be at least 10 grams of pure alcohol, not 8. This may not be a problem for this meta-analysis if there are no recent UK papers included.

A: This is not a problem since all doses of alcohol were converted to grams of pure alcohol from the standard drink measure. This conversion was done for country-specific standard drinks during the data abstraction phase, so differences in standard drink sizes between studies or countries will not have an effect on these findings.
6. Can the authors comment on whether it may be acute drinking, or chronic heavy drinking over the life-course that matters to stroke risk?

A: For the purposes of this study, it is the chronic consumption of alcohol over the life course that was investigated here. However, the pattern of drinking does play a role in acute strokes, and further work by this group is investigating this line of research.