Reviewer's report

Title: Alcohol consumption and risk of gastric cancer: a cohort study of men in Kaunas, Lithuania, with up to 30 years follow-up

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Reviewer: Francesco Gianfagna

Reviewer's report:

The article reports interesting results of a population based cohort study on the association between alcohol intake and gastric cancer risk, reporting also data on effect of different beverage types. Since exposure assessment was made 30 years ago, data were collected by a questionnaire with few items and they were not updated during the follow up (the main limitation of the study). However, the very long follow-up confers originality to the results.

MAJOR COMPULSORY REVISIONS
None

DISCRETIONARY REVISIONS

The incidence of gastric cancer for each beverage type and, among these categories, for each amount should be reported (preferably adjusted for covariates). Computing raw incidence from number of cases and person-years reported in the table, a j-shaped curve among wine intake categories could be observed, suggesting a favorable effect of moderate wine consumption, which could be suggested also by observing the slightly higher incidence in the other categories. At the same time, the incidence in subgroup of heavy drinkers appears to be very high, which becomes more evident observing the apparent lower incidence in heavy drinkers of other beverage types. Then, once these data are confirmed by the Authors, when we observe incidence in categories, we should be more convinced that the significant association between different amounts of wine consumption, even if explained at least in part by minor incidence in reference group, is mainly driven by a true major effect observed in heavy drinkers.

Mean age at diagnosis in different categories of estimated ethanol amount or kind of beverages could be added, to have an estimate of the public health impact of heavy drinking, along with the number of gastric cancer cases expected to be attributable to heavy drinking at population level.

Since acetaldehyde content was estimated by kind of beverage, confounding factors as non-alcoholic components of beverages cannot be considered in analyses comparing ethanol and acetaldehyde content in the same statistical model. In fact, wine has the highest acetaldehyde content, but it contains also substances thought to be protective. Then, considering both acetaldehyde and
ethanol in covariates, the reduced HR (towards apparently protective values) could be due to this confounding. Perhaps this comment could be added in discussion.

MINOR ESSENTIAL REVISIONS

In abstract, sentence on analysis using all kind of beverages as covariates is not clear, perhaps it requires a more detailed explanation; furthermore it seems not to be shown and explained in full-text; similarly, in abstract conclusions, ‘equivocal’ evidence of acetaldehyde effect could be explained more in details.

In methods, the Authors should indicate a reference if the questionnaire was used also for other publications. Results could be structured in population description, effect of ethanol amount and of kind of beverages; perhaps result section requires to be smaller, some results shown in tables could not be shown also in full-text. It is not clear if a statistical test was performed to compare values in categories shown in table 1. In table 3 decimals of person-years could be deleted; the note ‘a’ appears at the bottom of the table; the Authors should specify if ‘stratified by study’ means that ‘study’ was used as class variable in covariates.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests