Reviewer's report

Title: A case-crossover study of alcohol consumption, meals and the risk of road traffic accidents

Version: 1 Date: 9 June 2009

Reviewer: Damian Rzeznikiewicz

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Major Compulsory Revisions

1. Page 6, Paragraph 2 – state how you estimated the RR because Logistic Regression yields ORs.
2. Page 8, lines 3 and 4 must be rephrased
3. Page 8, paragraph 2 – the RR calculated don’t yield the correct answers if calculated from table 2. Are the calculations different for a crossover study? Perhaps this should be sent for statistical consulting if unclear.
4. Authors should show a result table for adjustments made by hour
5. Paragraph 5… certain subgroups…3 of the 5 subgroups presented that “were associated with a greater risk of accident” showed non significant results, therefore, this is clearly a case of over reporting. Only significant results should be shown in that section, and the statistics should be presented so one can see the magnitude of the results (in this case the confidence intervals are rather wide which tell quite a bit of the story)

Minor Essential Revisions

1. Page 2, spacing is needed between CI and ml
Page 2, formatting must be kept constant –definition of abbreviations should be capitalized or not, but must be consistent.
2. Page 3, abbreviation CC should be presented in the background section, after the first appearance of the term ‘case-crossover’.
Page 3, in your background, you use ‘food’ and ‘meals’ # must pick one
3. Page 3 - Methods section should read like this #
Drivers admitted to an Italian emergency room (ER) after RTAs in 2007 were interviewed about personal, vehicle, and accident characteristics as well as hourly patterns of driving, and alcohol and food intake in the 24 hours before the accident. The relative risk (RR) of an RTA was estimated through a case-crossover, matched pair interval approach. Alcohol and meal consumption 6 and 2 hours before the accident (case exposure window) were compared with
exposures in earlier control windows of analogous length # sentence is awkward, should be restructured

4. Line 2 of introduction on page 4, RTA should be RTAs, that in turn are by far the most common cause of – injury? Or injury and fatality? Or fatality? Should not be injury mortality.
Line 5 – should not be last years-# recent years.
Line 5 and 6 – contribution and consumption of what?
Lines 7-10 should be rephrased and if possible cut into 2 different sentences.
Line 10 – at a low consumption level
2nd part of paragraph 3 in the introduction should be rephrased – unclear
Line 2, 4thparagraph…cause sleepiness, which is an additional trigger of RTAs.
Line 3# alcohol and meal consumption (not meals)
Line 4 # driving periods? Why is emergency room capitalized?

5. Methods – line 4 and 5, ‘if they were’ should only appear once# if they were >14, alive at the time of arrival, and proficient…
Paragraph 2, line 5 – When possible…
Line 6 – ethics committee? Does the committee have a formal name?
Data Collection – line 1, instead of restricted, perhaps write ‘limited’
Paragraph 2, line 3 – drinking and driving habits…not reported in this article
Line 4 # …before the accident. Additionally, sleep was tracked in the 48 hours before the RTA.
Line 5, the windows for alcohol and food were 6 and 2 hours respectively.

6. Main findings, paragraph 2………even at intake(….). This would most likely correspond to…
Paragraph 3, lines 4-5# this would be consistent with a previous report but not with another. (singular)

7. Page 10, line 5… the first one we are aware of…
Line 7, missing a period after ‘explained’
Strengths and limitations
Line 5..time while driving should be ‘time while driving’

8. Page 11
Line 1 – while allowing for a full 6 hours in the control period and 24 hours iin the exposure period prior to the accident.
Line 11 – drinking and driving (not driving and drinking)
Line 12 – drinking and driving, eating and driving
Line 17 - …intoxication, the interview may be impossible, an event that
occurred...

Line 20 – scaling-down of alcohol

9. Page 12 – line 2 – memory is likely to be enhanced---source please
Line 3 – in theory, recall bias should lead to an underreport of exposure during control windows and therefore result in an overestimation of the risks. Conversely, if it caused...
In conclusion should be indented
Last line...However, one cannot dismiss the idea that it does so in...

10. Table 2 – titles are not well formatted
11. Table 3 – perhaps include the reference category in the table

Discretionary Revisions

1. Page 6 – Statistical Analysis
Line 3 - “was chosen according to previous literature”# was chosen based on previous...
Line 3 – Maclure and Mittelman is previous literature—change wording of sentence
Line 5 – food intake—is it food or meal?
Lines 5 and 6 – review how to use ‘respectively’ above
Line 7 – window – singular
Line 10-11 – run-on sentence
Towards the end of the first paragraph, the definitions of the windows get a little complex and wordy – authors must try to clarify

2. Page 7, par 2 – Should read –the interaction between alcohol and meals was studied by introducing a product term of the 2 exposures in the model. In a further attempt to isolate the pure effects of meal intake from the possible modification by the effects of alcohol, an analysis comprised of only subjects that had not ….was performed.

3. Results … 877 injured drivers arrived at the ER during our recruitment shifts.

**Level of interest:** An article of importance in its field

**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