Reviewer’s report

**Title:** Alcohol and cannabis use as risk factors for injury - a case-crossover analysis in a Swiss emergency department

**Version:** 1  **Date:** 8 September 2008

**Reviewer:** Guilherme Borges

**Reviewer’s report:**

**Major Compulsory Revisions**

This manuscript seeks to report relative risk (RR) estimates of the relationship between alcohol, marijuana, and the joint effect of alcohol and marijuana and emergency room (ER) injuries. The authors used a case-crossover strategy, comparing substance use six hours prior to the injury with substance use the prior week.

RR estimates of alcohol and injury (in general) in the ER have been available for a long time mostly, but not all, using non-injured as the comparison group. Traditional case-control studies on the role of acute alcohol consumption, using community controls at least in two different countries have been available since the last decade. Case-crossover studies, very similar to the one presented here, have been used by D Vinson since 1995 and again in 2003. A result from the WHO study was published in 2006. None of this literature is cited. The results for this much smaller sample in a Swiss emergency department do not add new information on this relationship.

Much different is the situation regarding RR estimates for cannabis and injuries in the ER. Here even if there have been estimates for usual marijuana use and injuries in the ER (Borges et al., 2005) and that estimates may be computed for the six hours period using the work of S Macdonald, S. Wells, N. Giesbrecht, and C.J. Cherpitel (1999), no case-crossover estimates are available here. There is one example of a case-crossover study on acute marijuana and medical emergencies, myocardial infarction (Mittleman et al., 2001). So, this goal of the manuscript is very much welcome. Unfortunately, what the authors deliver is very limited in this regard because of the small sample size. Adding to this, no women reported cannabis 6 hours prior to the injury. The authors are really left with 332 males, and the manuscript may gain in validity if restricted to men only. Among men, there were only 14 exposed cases to cannabis in the hazard period and 9 males with cannabis only (based on my own calculations). There were only 21 exposed cases to cannabis in the control period and 13 with cannabis only (based on my own calculations). These numbers are, of course, thinner for the “dose-response” analyses. The presentation of the data does not disclose concordant and discordant pairs, but it is reasonable to think that the actual RR estimates are based on a very small number of discordant pairs. The confidence limits show the huge imprecision of these estimates. The general tone of discussion and the abstract are not concordant with the imprecise estimates that
the authors deliver.

My suggestion is for this manuscript to be much shortened, limited to men and presented in a much more conservative and circumspect way. Given the small sample size, exact calculations should be preferred and tests for trends should be performed if statements for trends results are to be presented in the text. Inconsistent results that may lead to different conclusions (such as the RR estimate in table 3 for any cannabis (RR=0.33 (IC-0.12-0.92) VS RR presented on table 4 of 0.37 (IC 0.10-1.43) should be clearly mentioned and discussed and should not biased selected by the authors to be highlighted in the Discussion and Abstract. It is not clear to this referee why the authors choose to jump to an additive model in table 4 and not perform a multiple regression with alcohol and marijuana as independent predictors.

It would be of interest to the readers to have some glance of the types of injury. Most of the discussion is based on the alleged role of marijuana on traffic accidents, for which a compensatory behavior is claimed to be responsible for the lower ORs. What about falls? For example, “Swiss cannabis users take precautions to avoid injuries while using cannabis”. Would the same argument for falls be relevant here in this sample?

Most importantly, some insight and discussion on multiple drug use may be interesting. Is marijuana used only with alcohol? What about cocaine or benzodiazepines?

As some of the authors have produced insightful comments on the recall limitations of the case-crossover studies in this area before, this referee wonders why this is not mentioned here.

Other, minor points are:

1. English should be reviewed and colloquialism deleted (“there is not a lot of indication for deliberate denial”). Some sentences are hard to follow (“Conversely, the results for cannabis use are quite surprising, as they were associated with less risk of injury, which seems to contradict the laboratory studies cited above, as well as opposes the observations on alcohol use”)

2. Unnecessary mentions to causal risk factors and causal factor, casualty, etc, should be tempered. The impression of the estimates should be stressed and balanced in all the text, but especially in the abstract and discussion (“The present study in fact, indicated a ‘protective effect’ of cannabis use in a dose-response relationship.”) and not just at the end as “Overall, given the small sample size for cannabis use, we should be cautious with conclusions.”

3. No final response rate is provided.

4. A whole paragraph at the end of the Measures on biological specimens can be deleted, as is not used in the manuscript.

Level of interest: An article whose findings are important to those with closely related research interests
**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'