Reviewer's report

Title: Effects of coffee, smoking, and alcohol on liver function tests: a comprehensive cross-sectional study

Version: 1 Date: 18 July 2012

Reviewer: Neal D Freedman

Reviewer's report:

The authors examine associations between coffee, smoking, and alcohol use with liver function tests in 500 Korean health check examinees. Although these exposures have been examined before, less information is available in Asian populations and thus the current results are of interest.

Major Compulsory Revisions:
1. Statistical analysis methods, paragraph 1—rather than performing chi-square tests for categorical variables, the authors should perform tests for trend (for table 1 and 2)
2. Did the authors have complete information on all exposures, was there any missing information and if so, how was it treated.
3. Although the prevalence of hepatitis was low, were results similar if the patients testing positive were excluded?
4. In addition, 45% of the eligible examinees refused to participate in the study which could affect the generalizability of the results. This should be mentioned as a limitation.

Minor Essential Revisions:
1. Discussion paragraph 2—c-reactive protein and total protein are very different exposures such that they should not be considered on the same causal pathway.
2. The authors do not describe the proportion of instant and brewed coffee consistently. In paragraph 1 of the results section, the authors state that 57.8% of participants preferred instant coffee and 48.0% preferred brewed coffee. Whereas in the last paragraph of the discussion, they state that 81% of participants drank instant coffee. In Table 1, it looks like about 57.8% drank purely instant and 8% drank instant and brewed coffee. The results should be presented in a consistent way.
3. Instead of individual studies, the authors should cite one of the meta-analyses of coffee and liver cancer (introduction paragraph 2).
4. Please specify what the p-value is testing in tables 1 and 2. For table 1, is it the comparison between men and women?
5. Did the authors have information about decaffeinated or caffeinated coffee? If not, this should be added as a limitation.
Discretionary Revisions:

1. Did the authors have information on tea consumption? This would be an interesting addition as few studies of liver enzymes have been conducted in heavy tea drinking populations.

**Level of interest:** An article of limited interest

**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.