Reviewer's report

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

Version: 2  Date: 3 October 2012

Reviewer: Valentina Medici

Reviewer's report:

Major critiques:

2) The definition used for heavy and non-heavy drinking is very questionable. The authors included among non-heavy drinkers men all subjects with alcohol consumption of < 60 grams/daily. Given that one alcoholic drink is 14 grams of alcohol, the non-heavy drinkers men included subjects who were drinking 3-4 drinks/day which is already classified as heavy drinking. This most likely represents a major confounder. The authors should perform a new analysis with a new classification of drinkers.

-We defined the heavy drinker according to several references (Schiff’s disease of the liver, 10th ed. Page 884; Gut 1997; 41: 845-850) which commented an increased risk of developing cirrhosis with the ingestion of more than 60 to 80 g/day of alcohol in men and more than 20 g/day in women.

Moreover, one alcoholic drink in Korea usually contains ~10 g of alcohol. It means about 6 drinks /day. According to your recommendation, we performed several multivariable analyses using a new criteria of heavy alcoholics (M>40 g/day, F>20 g/day) about the effect of daily coffee consumption and smoking amounts on the liver function tests. As a results, the negative correlation between daily coffee consumption amount and serum protein/albumin/AST levels were consistent with previous analyses using the original criteria for heavy alcoholics (M>60 g/day, F>20 g/day). Results about the effect of smoking on the liver function test were remained significant after changing the criteria. A supplementary tables is attached about the estimated liver function test results depending on the daily coffee consumption or smoking amount after adjustments for age, gender, BMI, regular medication, daily alcohol drinking amount.

Response: The definition of standard drink is any alcoholic beverage that contains approximately 12-14 grams of alcohol. Authors should use the definition of standard drink or provide references for a standard drink in Korea and its correlation of risk of liver disease. In addition, I agree that ingestion of more than 60 to 80 g/day of alcohol in men and more than 20 g/day in women is associated with increased risk of cirrhosis but the study is not about the risk of developing cirrhosis. According to NIAAA, heavy drinking is no more than 4 drinks on any
single day AND no more than 14 drinks/week for men, whereas for women it is
no more than 7 drinks/week. The authors provided new data on multivariable
analysis summarizing Tables 4 and 5 but they should also provide the new data
for the other Tables. I think the manuscript should be reorganized according to
the NIAAA definition of heavy drinking.

Minor essential revisions:
The authors definition of “liver function tests” is questionable. In the background,
they say that LFTs consist of total cholesterol, total protein, albumin, ALP, total
bilirubin, AST, ALT, and GGT. It would be
more appropriate to consider protein and albumin, liver function tests. AST, ALT,
and ALP are liver enzymes. There are no data on INR which would have been a
useful information among other liver function tests.

-We agree your point that AST, ALT and ALP are liver enzymes. However, serum
total cholesterol, protein and albumin levels were used to estimate long-term
synthetic function of the liver. Thus, the ‘liver panel’ in our clinical laboratory
contains total cholesterol, protein and albumin as well as liver
enzymes. Unfortunately, prothrombin time was measured in about only two third
participants since our subjects were health-check examinees.

Response: the authors should talk about liver function tests and liver enzymes in
the manuscript instead of just liver function tests.

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:
I declare that I have no competing interests