Reviewer's report

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

Version: 1 Date: 5 August 2012

Reviewer: Valentina Medici

Reviewer's report:

Jang et al. conducted a cross-sectional study on 500 subjects who responded to a self-administered questionnaire about their alcohol and coffee drinking and smoking habits. In addition, BMI was calculated and subjects underwent abdominal ultrasound for determination of presence of fatty liver and blood tests for measurement of serum total cholesterol, total protein, serum albumin, alkaline phosphatase, total bilirubin, AST, ALT, and GGT.

Coffee drinking was associated with lower total serum protein, albumin, and AST. Smoking was associated with higher GGT and lower serum protein, whereas alcohol drinking was associated with higher GGT.

Major critiques:

1) the study provides some useful information but overall it lacks of originality. In addition, the finding of inverse correlation between coffee drinking and serum protein and albumin levels is unexpected and the authors do not have a convincing explanation for their findings. This result in particular is concerning for selection bias where potentially coffee drinkers were also drinking more alcohol and may had lower serum protein levels.

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.

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.

Level of interest: An article of limited interest
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.