Reviewer's report

Title: Do smoking, alcohol consumption, physical activity, and family history have different effects on the risks of acute myocardial infarction and unstable angina pectoris? A prospective cohort study

Version: 2 Date: 14 June 2010

Reviewer: Yariv Gerber

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Do smoking, alcohol consumption, physical activity, and family history have different effects on the risks of acute myocardial infarction and unstable angina pectoris? A prospective cohort study

In this study, Merry et al. examine whether the association between selected lifestyle factors and CHD risk differs by disease manifestation (MI vs. UAP) and by family CHD history. All in all the paper is relatively well written and the main study questions are legitimate. However, the paper is somewhat difficult to follow, as too much information is provided along the text and tables. This information should be presented in a more parsimonious manner. In addition, there are several points that need further clarification.

Specific Comments:

• What is the validity of self-reported smoking, physical activity and diet in this population? Did the author conducted any validation studies?
• Is the estimated validity of UAP diagnosis similar to that of MI? differences might affect the observed results.
• Statistical analysis: I am uncomfortable with the adjustment for PPHVZ/MORGEN cohort. Using a shared-frailty Cox model to account for possible intra-cohort correlation is recommended.
• Statistical analysis: why was education the single SES measure accounted for? Other measures may be important as well. Using education only leaves uncertainties as to residual confounding.
• Cases are relatively young. This should be acknowledged and discussed.
• The manuscript lacks formal comparisons of the HR estimates (e.g., MI vs. UAP). I am currently uncertain whether all interpretations are correct (at least statistically).
• The results of physical activity are somewhat counterintuitive and suggest either selection or information bias.
• I would suggest reducing the number of tables and amount of information and presenting the data in a more readily interpretable form.
• Conclusions: given the observational nature of the data, it is impossible to deduce cause and effect relationships. Moreover, I am still not convinced that the
associations indeed differ materially between MI and UAP. More sound data are required for such a strong conclusion.

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

**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