Reviewer’s report

Title: The CYP2J2 G-50T Polymorphism and Survived Myocardial Infarction in Patients with Cardiovascular Risk Profile

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Reviewer: V A Cameron

Reviewer’s report:

This manuscript reports a possible association between the CYP2J2 G-50T polymorphism and survival after myocardial infarction. The study group is heterogeneous, being a combined cohort of sleep apnoea study patients and coronary angiography patients.

Major Comments:

1. It is not clear whether the authors are claiming that the CYP2J2 polymorphism T-allele is associated with an increased risk of having a myocardial infarction (MI) or of being a survivor of MI. They state that fatal cardiac events could not be considered in this study, and hence it is difficult to determine whether the gene polymorphism has a beneficial association with survival or an adverse association with increased risk of MI.

2. Univariate analyses suggested that carriers of the T-allele were more likely to be among those who had survived myocardial infarction (p=0.026). However, with multivariate regression analysis the relationship did not reach significance (p=0.073) when corrected for other risk factors (diabetes, hypertension, dyslipidemia, age, smoking and gender). Thus it is uncertain whether any genetic association has been demonstrated.

3. The methods for ascertaining whether patients had dyslipidemia, diabetes, hypertension and prior MI are unclear, and seemed to largely depend on self-reported recall, especially in the sleep study patients. Were lipid profiles assayed in all cases or only if the patient did not recall ever being diagnosed? Were lipid measurements fasting? Was the diagnosis of hypertension made on three independent occasions or just three sequential measurements?

4. The manuscript needs to be extensively rewritten into colloquial English.

Minor Comments:

5. The Title is poorly worded. Do the Authors mean: The CYP2J2 G-50T Polymorphism and Survival after Myocardial Infarction in Patients with High Cardiovascular Risk Profiles?

6. The Abstract could be much more succinct. For example, the methods section of the Abstract could read: The CYP 2J2 polymorphism was genotyped in 512 patients with sleep apnoea (group: OSA) and with high cardiovascular risk profiles and in 488 patients admitted for coronary angiography (CAR group). The
CYP 2J2 G-50T polymorphism was evaluated for a potential correlation with survival after myocardial infarction. Genotyping was performed by allele-specific restriction and Light-cycler analysis.

English usage – some examples of non-colloquial English (partial list)

Title as above.

Abstract, last sentence of results- “In the multivariate logistic regression….while the significance for this relationship was barely reduced to the trend level (p=0.073).” This should read “In the multivariate logistic regression ….but this trend was not significant (p=-0.073).”

Background, line 18 – change 17,3% to 17.3%.

Background, last line – delete the words “on average.” The patients had high cardiovascular risk profiles, and the words “on average” are superfluous.

Methods, line 7 and elsewhere - instead of “anamnesis” use “patient recall.”

Methods, line 10 – instead of “whenever” use “…and also if patients were taking…”

Methods, line 11 should read – “The diagnosis of hypertension was established if patients were…”

Methods, line 14 – instead of “controlled” use “confirmed.”

Methods, Statistical Analysis section is in a different font from the remaining text.

Methods, Statistical Analysis line 5 - “…considered significantly different if p<0.05.”

Results, line 1 – (11.1%) appears to be repeated.

Results, line 9 – use “invalid” instead of “unfeasible.”

Discussion, line 12 – “…that OSA itself deteriorates conventional risk factors…” is not correct. Possible alternatives are “worsen,” “aggravates” or “exacerbates”?

Discussion, line 18 – “…these findings…”

Discussion, page 2, line 5 – “Since the polymorphism has been detected recently, there are currently few population-based studies…”

Discussion, page 2, line 6 – “found significantly more carriers…”

Discussion, page 2, line 8 – “in cells with the T-allele but not in wild-type cells, nicotine significantly…”

Discussion, page 2, line 19 – “…large cohort of patients…” (not collective).

Discussion, page 2, line 21 – “Our previous experience has shown that genotyping…” (not Previous own experience... and no comma after shown)

Discussion, page 2, line 23 – “Light-cycler analysis of the G-50T polymorphism is more reliable…”

Discussion, page 3, line 1 – “genetic predisposition to…” (not “in”)

Discussion, page 3, line 6 – “Observing the overall group of 1000 patients…”
Limitations, line 5 – “…thus it is not as reliable as the clinical diagnosis available in the CAR group.”

1. Is the question posed by the authors well defined? NO
2. Are the methods appropriate and well described? NO
3. Are the data sound? NO
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? YES
5. Are the discussion and conclusions well balanced and adequately supported by the data? NO
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? YES
8. Do the title and abstract accurately convey what has been found? NO
9. Is the writing acceptable? NO

- Reject because scientifically unsound

Quality of written English
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- Not suitable for publication unless extensively edited

Statistical review
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Is it essential that this manuscript be seen by an expert statistician? NO

**Declaration of competing interests:**

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'I declare that I have no competing interests'