Author's response to reviews

Title: Personality and time delay to treatment of acute myocardial infarction.

Authors:

Mona Schlyter (mona.schlyter@skane.se)
Lena André Petersson (Lena.andre-petersson@med.lu.se)
Gunnar Engström (Gunnar.engstrom@med.lu.se)
Patrik Tydén (Patrik.tyden@med.lu.se)
Margareta Östman (Margareta.ostman@mah.se)

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Author's response to reviews: see over
BMC Cardiovascular Disorders

Melissa Norton, MD

Dear Editor,

Hereby, we submit the reviewed manuscript entitled: Personality and time delay to treatment at acute myocardial infarction to BMC Cardiovascular Disorders

We hope that our revision will make the article acceptable for BMC Cardiovascular Disorders.

Yours sincerely,
Mona Schlyter, R.N, PhD student,
Skåne University, Faculty of Cardiology
Malmö University, Faculty of Health and Society Sweden
Comments to reviewer no 1.

Dear Cheuk-Kit Wong
Thank you for your valuable comments.

Pl spell out that all patients are having STEMI if this is the case. If not, a separate evaluation for STEMI and NON-STEMI is needed

Comment no 1:

When comparing the 323 patients we found 117 with STEMI and 206 patients with non STEMI
This will be in table 2 and in tex on page 8

Acknowledge other factors that could had heavily influenced the "time to presentation" such as family support - ie who called the emergency service? Why late presentation - ie could it be due to false reassurance from an appointment to see the family doctor, for example? The latter is particularly relevant for those in quartile 4 of time to presentation.

Comment no 2: The research nurse had to follow a questionnaire there one question was “what time did your chest pain/symptoms started” and from the hospital records the time for arrival was taken. The time was even checked with relatives and bystanders when this was possible.
We did not ask about who called for the emergency service and neither asked for the patients last contact for medical care. We will take this to the section about limitations. Page 10
The article from Wong et al Pre-existent depression in the 2 weeks before an acute coronary syndrome can be associated with delayed presentation of the heart attack. This article is very interesting and will be taken in at the discussion.

Comments to reviewer no 2

Dear Kim Smolderen
Thank you for your valuable comments.

The aims of the paper written by Schlyter et al. are 2-fold: to study the association between psychosocial patient characteristics and prehospital delay and to study gender differences in these psychosocial characteristics. Although the 2 objectives are both interesting to study, it is hard to combine these different objectives into one paper. It prevents the intro, analyses, discussion from being focused and leaves us with very superficial observations that do not reach the level of precision that these topics deserve; addressing these objectives in separate papers would probably have been better. Besides this overall comment, I have some important concerns (Major Compulsory Revisions) about the lack of updated literature that the authors failed to integrate in their intro and discussion, the non-transparent analysis plan they performed, and the selection bias that must have been introduced in their sample, by only including those MI patients when research staff was available (absence of researcher between 8am-5pm and during holidays). I will be more specific in my suggestions and comments
We agree that it would have been better if we had separated the 2 objectives. This is unlucky but it is a lesson for next time. We have updated the introduction and discussion section according to the reviewer comments.

1. Introduction; it is odd to start the intro with a broad overview of psychological factors that have been studied in CVD, when the primary outcome measure is prehospital delay. Also, Type A behavior is considered as a personality trait, which is actually not true. It is a constellation of behaviors that was observed in men that were considered at-risk of CVD. Its component ‘hostility’ is probably the only trait that comes closest to a personality trait.

Comment: no 1 We started with the psychological factors in the background section because this was important and in the focus of the paper.

2. Also in the introduction – I miss the clinical context/background on the research/clinical relevance of studying prehospital delay in acute myocardial infarction.
Comment: no 2 We have added this in the text on page 4.

3. Papers that are relevant to the area of research on prehospital delay (and its association with psychosocial characteristics) have been missed in this paper. The scientific statement on patient characteristics and prehospital delay in Circulation (Moser et al., 2006), the work of Kathleen Dracup, the recent work of Sullivan et al., (Sullivan MD, Ciechanowski PS, Russo JE, Soine LA, Jordan-Keith K, Ting HH, et al. Understanding why patients delay seeking care for acute coronary syndromes. Circ Cardiovasc Qual Outcomes. 2009;2:148-54.), Smolderen et al., (Smolderen KG, Spertus JA, Nallamothu BK, Krumholz HM, Tang F, Ross JS, et al. Health Care Insurance, Financial Concerns in Accessing Care, and Delays to Hospital Presentation in Acute Myocardial Infarction. JAMA. 2010;303(14):1392-400.), and several other articles all discuss the importance of psychological factors in prehospital delay. Moreover, in most of these papers psychological factors WERE associated with prehospital delay, while the current study could not identify such associations, which – when interpreted against the potential selection bias and the limited sample size – raises some questions about the robustness of the results the authors report.

Comment: no 3 We are very grateful for all your suggestions of papers on prehospital delay. And will add some of the suggestions in the paper.
We are fully aware about the different result from our small study and the studies you have given us. We have discussed the robustness, but this is that we found.

4. Methods – The headings design, setting, and participants could probably be combined into one heading (Study Design and Participants).

Comment: no 4 A god suggestion will be followed on page 4.
5 Participants — it is not clear to me why those aged 71 years or older are excluded — this probably introduces another selection bias in your sample, as a substantial proportion of patients who have had an AMI are older than this threshold.

Comment: no 5
We can only draw conclusions about patients less than 71 years of age, but on the other hand it might be likely to think that this group is more pure, older patients have often more co-morbidity, and more often quiet infarction.

6. The description of the primary outcome measure (prehospital delay), should deserve its own heading and would need to be described in more detail how this information was obtained? Was information collected as a continuous variable or in categories? I assume the former, as the authors seem to divide their cohort into quartiles based on the delay times. This is also problematic, as typically, classifications that are more clinically interpretable are being used in the research that has been done on prehospital delay. In how many cases was prehospital delay information missing? How did the authors handle missing data or correct for missingness in their analyses?

Comment: no 6
The information was collected as a continuous variable.
The research nurse had to follow a questionnaire where one question was “what time did your chest pain/symptoms start” and then look in the medical journal to confirm the time the patient had arrived. One advantage to have quartiles is that the results will not be influenced by outliers and it can be a way which consider objective and statistical expedient to divide the material in. The hypothesis that personality factors will influence the time for delay. It is however unlikely that this should affect the time limit that is used in clinical because the patients are not aware about this.

We have no missing data on this. We have made this more clear the method section page 5

7. The lack of information AMI severity is another limitation. Readers will not have a notion about the proportion of STEMIs, non-STEMIs in your cohort, LVEF, Killip class, …

Comment: no 7. We have information about STEMI and non-STEMI and we have added this in the paper according to the reviewer’s suggestions as well as LVEF on page … Killip class is not examined during this acute phase.

8. Stroop test – seems that only a limited subset of the total cohort completed this burdensome assessment. Would probably leave this measure out for your prehospital delay paper, as you will end up with a limited sample size, limiting your power.

Comment: no 8 We have not used Strops test in analysing prehospital delay in this paper
9. Statistical analyses – it is absolutely unclear to me how the analyses were performed, how many, which model was being used, what covariates did the authors include into their models,... From table 2, it almost seems that they did multiple comparisons for all these factors listed in the table. From the descriptions the authors provide, I would be unable to replicate your study, and this is what a method section/doing research really is about. Can somebody else, who is interested in your work, replicate what you did? How else could we compare our findings of all the studies we perform in this area?

Comment: no 9 We have made an better explanation to sort this out in the section on analyse on page 7

10. The absence of the researcher between 8am-5pm is problematic. It is problematic because you have introduced a selection bias in this way. Prior findings have demonstrated that the time of day/week people are experiencing an MI is an important factor for prehospital delay as well. This study failed to take this information into account and only had a cohort that experienced an AMI AMI at certain times of the day/week, which limits generalizability of your findings.

Comment: no 10 this is misunderstand because of our bad explanation. We have corrected this in the discussion section page 11.

If patient arrive at half past eight in the evening or during the night, they will bee included directly next morning. Patients who arrive at Saturday will bee included on Sundays, and they who come on Sunday will bee include on Monday. But as we were only 2 researchers, during our holiday we missed some patient.

11. Overall, I appreciate the effort that certainly must have went into this project and paper, but I would really encourage the authors to focus on one or the other objective, streamlining and focusing your intro according this objective, and review the literature that I mentioned in my comments, and look for a more thorough analysis plan, and description of your results (prior work done on prehospital delay can give you good examples on how data is being handled).

Comment: 11 Corrections made according to the above comments. We have updated the referenses. We have rewritten some in the introduction and elucidate some things and made some new analyses. We have taken consideration to STEMI and LVEF.