Reviewer’s report

Title: Predictors of post-stroke body temperature elevation

Version: 0 Date: 16 Jun 2017

Reviewer: Sandy` Middleton

Reviewer's report:

Predictors of post stroke body temperature elevation. June 2017

The main issue I have with this manuscript is that it needs multiple grammatical corrections. Please also add in page numbers as it makes reporting the review a lot easier.

Abstract (and elsewhere): the expression 'is associated to' should read 'is associated with'.

In the abstract results and main results it is not clear what 'peak' body temperature refers to.

Background

Line 57: please define 'elevated' temperature. This implies you used temperature as a continuous variable but this doesn't seem to be the case later in the statistical analysis section where you talk about just using the maximum temperature. In the results you report temperature readings above 37.5C. This needs to be clearer here and also in the Method. Please defend why you decided to use 37.5 as your cut off i.e. Reference literature.

Line 59: you state your outcome is temperature within 48 hours of stroke onset. This needs to be clearly written throughout the paper and in the tables that it is 48 hours from stroke onset and not 48 hours from hospital/ stroke unit admission, which also is a commonly reported variable.

Methods

Line 3: The ethics information should be moved back to the end of the method section.

Line 13: poor grammar: 'possibility of the data to be enrolled in'

Line 23: missing words 'a medical secretary collected THE NAMES OF patients ...'

Line 49: I think the phrase 'temperature registrations' should be changed throughout the paper to 'temperature readings'.
Line 50: it is not at all clear if all temperature readings were recorded or just the highest in the first 48 hours post admission.

Line 54: 'the patient was noticed as smoker' should read 'the patient was noted as a smoker'. Also if the grammar is poor in the next sentence re 'smoking negated'.

Line 59: change 'debut' to 'onset' and in other places.

I have a great problem with this method whereby for those with previous stroke with residual disability 'this was subtracted from the current NIHSS score'. This is highly unconventional. You would need to reference this at the least but I have never seen it plus you don't say who, or how or when you determined the old NIHSS.

Line 27: replace the word 'assimilated' with something else as it's not the right word.

Line 32: re merging these two indicators. This needs to be in the statistical analysis section so please move. Also this needs to be better explained. 'Merging’ is not the best word to use.

Statistics

Line 40: please explain about how descriptive variables managed i.e. Frequencies determined before explaining the regression. Also discuss any variables that were manipulated.

Please replace phrase 'dependent variable'. This is old terminology and not often used anymore. This section is also unclear regarding the 'maximal' temperature. Do you mean the highest temperature?

Results

Line 10: please explain the reasons for the ineligibles in the text.

Line 15: please add in numbers as well as percentages. Please clarify that this means at least one temperature reading above 37.5C.

Line 20: you report a 'lowest peak temperature ' of 34.9C in the text but this looks odd. Does this mean that this one patient never had a temperature of over this value at all for the first 48 hours? Sounds like measurement error to me. This also doesn't match data in Table 2 where you report the lowest maximum temperature at 35.6C which sounds more plausible.

Line 25: please change 'body temperature >37.5C at any time within 48 hours of stroke onset'.
Line 40: 'were strongly associated WITH peak body temperature'. This meaning is unclear. Please rewrite.

Discussion
Line 6: fix grammar 'associated WITH'

Second page of Discussion
Line 19: 'not associated WITH maximum temperature' meaning unclear.
Line 33: change 'relation' to 'association'
Line 34: change 'admit' to 'allow'
Line 56: meaning of 'maximum temperature' unclear.

Third page of Discussion
Line 2: is there a missing word here? 'Not associated WITH INCREASED temperature'
Line 24,27: it is hard to interpret these results without knowing how the temperature readings related to when the antibiotics were given and this is not mentioned.
Line 48: the frequency of temperature readings needs to be given in the Method and also the mean/median number of temperature readings per patient.
Page 53: is suspect lack of temperature readings is actually a systematic bias. If that is usual care for stroke patients in that hospital then it is not random bias.
Page 56: what does this mean 'few neurological statuses were translated to NIHSS directly by examiner' does this mean recorded in the medical records by the admitting doctor? The word 'translated' is not used correctly here or in the next sentence where I think you mean 'retrospectively computed'.

Conclusion
Line 24: please add 'after stroke ONSET' as it's more precise than just 'after stroke'. Fix elsewhere too.
Line 29: change 'correlation' to 'associated with' as you didn't do any correlation testing.

Line 39: this sentence is not clear please rewrite. You haven't made an argument in the discussion for the future need to report temperature elevation by different timings. The conclusion should not contain any new ideas not already mentioned in the discussion.

Line 48: this seems a new concept and should be introduced in the conclusion. The paper needs a stronger concluding sentence.

Figure 1: what does 'personal number correct' mean and why were these excluded? Does this mean you were unable to locate this record? If so, say so.

Table 1: only need to report either male or female and not both as you do for other variables. Please give more information about whether the anticoagulants and other medications refer to on admission (i.e. Prior to stroke) or prescribed during hospital as these seem to be mixed together.

Table 1 needs some headings as it has pre admission details and in hospital care mixed up. E.g. Put stroke location and stroke type up in section earlier about clinical characteristics.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
**Declaration of competing interests**

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license ([http://creativecommons.org/licenses/by/4.0/](http://creativecommons.org/licenses/by/4.0/)). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal