Reviewer’s report

Title: Exercise capacity and body mass index - important predictors of change in resting heart rate

Version: 0 Date: 26 Jun 2019

Reviewer: André Schmidt

Reviewer's report:

The article entitled "Exercise capacity and body mass index-important predictors of change in resting heart rate" approaches a relevant topic in cardiovascular disease related to primary prevention. It is well written but some aspects need clarification from the authors as listed below.

Major concerns

1. Abstract: it is concise and clear, but your conclusions are that individuals with those baseline characteristics are at risk of a follow-up increased heart rate seems quite intuitive, since all of them indicate a less prone to exercise regularly during follow-up. How about reinforcing that a positive delta HR is an indicator of poor adherence to a healthy lifestyle?

2. Methods: it may be relevant to indicate here what was the type of work of this population, since blue collars and white collars have distinct physical activities at work this may impact the results obtained. Also, include this in the results section and include it as a confounding factor.

3. Methods: It is important to present a description of the routine used to obtain the individual resting heart rate. In what position it was obtained? How many minutes after being put in the resting condition was it obtained? Any previous orientation for not taking caffeine containing beverages or smoking previous to the measurement? Was a pulse measurement or an EKG record? Were those measurements taken in the same place for all individuals and by whom?

4. Methods: Dyslipidemia must be defined and described in the text.

5. Methods: You stated on the last sentence of this section that Diabetes Mellitus was recorded, but it does not appear in the results section. Why not? Also, during follow-up how many individuals became diabetic? This may be relevant since it may be another disease that a higher resting heart rate at baseline could be a risk factor. Have you considered analyzing this?

6. Results: The mean interval between the two visits must be presented. It is important to know if it had any impact on the delta HR presented. For example, those with a short
interval may have less variation than those with a long interval. It is important to have these numbers and their statistical analysis included in Table 2.

7. Results: In the fourth paragraph you present the correlation for age and resting HR. Looking at Figure 2 it shows a wide variation by age point, and the correlation coefficient is very low (r=-0.221), although statistically significant. Do you see any clinical utility of this information? Individuals tend to be less physically active with aging, have more risk factors such as dyslipidemia, overweight, etc. How you explain that finding?

8. Figure 3 is confusing and difficult to understand. Since it seems that you are presenting two distinct situations it may be better to use bar graphs. Please consider reviewing this figure.

9. Discussion: you state in the first paragraph that resting HR decreased 1.1 beats/min, but in what interval? Yearly or at 10 years interval? Also, looking at your figure 1 it presents a nearly Normal distribution, so it is difficult to me to find this decrease clinically relevant. Can you provide a clarification on this issue?

Minor concerns

1. Please include reference number (16) at the end of the description of the study of Floyd et al. - Line 5, second page of the Background Section. I suggest removing it from the end of that paragraph so the reader can easily locate it.

2. Table 1 needs to reflect the baseline characteristics of those patients included in this paper, not the whole TAMCIS sample. Please consider making this correction.

3. In the above table please explain why you have a baseline Delta HR. Since it is a baseline measurement? I could not figure out what is the meaning of this presented measurement.

4. Results: as you describe in the second paragraph of this section Figure 1, I suggest including that it has both genders presented as is written in the legend of the figure.

5. Discussion: please include reference number of the HARVEST study in the 6th paragraph.

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

No

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.

No

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
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