Reviewer's report

Title: Impact of Acute Exercise on Brachial Artery Flow-Mediated Dilatation in Young Healthy People

Version: 1 Date: 30 August 2012

Reviewer: Rosa Maria M Bruno

Reviewer's report:

Major compulsory revisions

1) One of the endpoints of the study is to ascertain the effect of smoking as well as gender on acute effect of exercise on FMD. Since there are only 7 smokers and all of them are males, the study is underpowered to the endpoint of smoke; furthermore, this could be a bias for gender analysis. I suggest to discard those subjects and analyze only gender differences in non-smokers.

2) Background, Page 3: in the background you should briefly mention which physiological basis have your hypothesis “We hypothesized that FMD is reduced after a bout of acute exercise”, giving appropriate citations in experimental models or in humans.

3) Methods, Page 5: although the methods section was improved, it is still not clear whether the diameter was analyzed by means of a automated system or simply by calipers. If the second option is the right one, this should be listed in discussion as an important limitation.

4) Discussion: The authors added a paragraph aimed at explaining gender differences in vascular adaptation to acute exercise, which however is insufficient. The author address the following answers: why women have higher resting FMD? Why women have a greater FMD decrease after exercise?

Minor Essential Revisions

1) Abstract

Please write “the impact of acute exercise on flow-mediated dilatation (FMD) of brachial artery has not been elucidated yet” instead of “the current literature on the impact of acute exercise on flow-mediated dilatation (FMD) of brachial artery is not elucidated.”

Please remove “and 39 (48.1%) were female”.

Please invert numbers in brackets in the statement: “The decrease of FMD after exercise was greater in female group (-0.65±0.62% versus -2.62±0.64%; P=0.049).” The numbers are also different to those found in the results section, page 8 (-0.53 ± 3.27 versus -2.75 ± 5.28%; P = 0.028). Please check for correct numbers.
2) Background
Page 3: Please correct “Given that a better comprehension of acute exercise model is beneficial“ instead of “Given that establishment of acute exercise model is beneficial”

3) Results:
Page 8: Please correct “Pre-exercise FMD was lower in male group” instead of “Pre-exercise FMD was higher in male group”,
Page 8, last line: please correct “correlations” instead of “correlation”.
Page 9, 4th line: please correct “increase” instead of “reduction”.
Page 9: please correct “Postexercise FMD tended to be impaired in current smokers” instead of “Postexercise FMD was tended to be impaired in current smokers”

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.