Reviewer's report

Title: Smoking decreases the level of circulating CD34+ progenitor cells in young healthy women - a pilot study

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Reviewer: Francesco Pelliccia

Reviewer's report:

The authors have carried out an interesting descriptive study on the effect of smoking on the level of CD34+ cells, that is an important subgroup of endothelial progenitor cells (EPCs), in young healthy women.

The paper addresses a very important social issue, as smoking is still a major worldwide health problem and is more and more diffuse among young women. The manuscript is well written, has not major methodological pitfalls, and results are presented in a clear manner.

The most important limitations are the very small sample size (only 32 healthy women) and, most importantly, the fact that the detrimental effect has already been clearly documented albeit in another small investigation. The authors should therefore discuss their results in light of previous knowledge pointing out which are the novel aspects they have found and providing details of their incoming research following this 'pilot' experience.

Minor comments are as follows:

Page 3, line 66: The authors should provide a reference for their sentence (elevated estrogen plasma concentrations in women correlate with higher levels of circulating EPCs)

Page 4, line 91: The authors should explain why they have decided to exclude men from the study. Although the effect of smoking on men has already been investigated, it would have been very interesting a comparison between sexes on the different effects of smoking on EPCs.

Page 6, flow cytometry: The authors have assessed only two subgroups of EPCs, that are CD34+ cells and CD34+/CD133+ cells. This is at variance with most recent works which have taken into account many other subtypes of cells, such as CD34+/KDR+/CD45- and CD133+/KDR+/CD45- cells. The authors should explain why they have not assessed these commonly evaluated subtypes.

Page 7, line 169: The authors report that smoking women were older. This is a major limitation of the study, as age has been previously told to influence itself the circulating levels of EPCs. The authors should discuss this point reporting references of recent researches that have shown no major impact of age on EPCs.

Page 7, line 175. The title of the paragraph should be changed as: Effect of smoking on CD34+ cells in young healthy women.
Page 11- line 272. Conclusion is completely unrelated to the aim of study. The authors are not allowed to derive any conclusion based on their results on the significance of CD34+ cells evaluation in risk factor characterization of women.

**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.

**Declaration of competing interests:**

I declare that I have no competing interests