Author's response to reviews

Title: Prevalence and predictors of metabolic abnormalities in Chinese women with PCOS: a cross-sectional study

Authors:

Rong Li (roseli001@sina.com)
Geng Yu (yugeng2001@hotmail.com)
Dongzi Yang (yangdz@mail.sysu.edu.cn)
Shangwei Li (lswivf01@sina.com)
Shulan Lu (shulanlu819@yahoo.com.cn)
Xiaoke Wu (xiaokewu2002@vip.sina.com)
Zhaolian Wei (weizhaolian_1@126.com)
Xueru Song (songxr63@yahoo.com.cn)
Xiuxia Wang (wangxx@sj-hospital.org)
Shuxin Fu (fushuxin2007@aliyun.com)
Jie Qiao (jie.qiao@263.net)

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Author's response to reviews: see over
Many thanks for your thoughtful and helpful suggestions. We appreciate your consideration to publish this paper in your journal.

I have attempted to address the questions and made a point-to-point response to the comments. Please find the explanation in separated page.

Sincerely yours,

Jie Qiao, M.D, Ph.D

President of the Chinese Society for Reproductive Medicine (CSRM). Department of Obstetrics and Gynecology, Reproductive Medical Centre, Peking University Third Hospital. No. 49 North Huayuan Road, Haidian District, Beijing, 100191, China. Tel: 86-010-82265080 Fax: 86-010-82266849 Email: jie.qiao@263.net
Reviewer 1

1. you have said you have taken out the hospital women - they still appear in table 1.0? does that mean they are still in the analysis in Table 2,3, and 4.0 and figure 2.0?

Answer: I am sorry for this mistake, and we have corrected them in table 1. The data of hospital women was not involved in the other tables and figure.

2. The English expression is still not clear in a number of parts

Answer: We have re-written some parts of this manuscript by a native-English speaker.

3. The main findings are not clear

Answer: We have re-written the conclusion of this manuscript.

4. Abstract - review what you have said - study not clear and SHBG is said to be a risk factor and a protective factor

Answer: We have corrected them in the abstract of this manuscript.

5. Page 5 line 3- you cannot say you will be screening for CVD as you are not rather you are looking at screening for risk factors for metabolic disease

Answer: We have corrected them in the introduction of this manuscript.

6. Methods: these are still not clear

6-1 - how did you define oligo/amenorrhoea

Answer: We have given a detailed definition for oligo/amenorrhoea.

6-2 - how did you exclude thyroid dysfunction, LOCAH, hyperprolactineamia etc (it appears some were excluded by examination and clinical history? Medical notes? some by bloods (what were they, what units and what were the values deemed as abnormal?)

Answer: We tested PRL and TSH on all blood sample by chemiluminescence under the Immulite 1000 (DPC, USA), in order to exclude thyroid dysfunction, LOCAH, hyperprolactineamia. If we found the androgen level abnormality, we suggested that patients went to see Endocrinologist to exclude other endocrine diseases.
6-3 - who were the people trained to do vaginal ultrasound - it sounds like they were not ultrasonographers?

Answer: We have corrected the sentence, and the vaginal ultrasound was performed by the experienced ultrasonographers.

6-4 - what happened to those who were treating hirsutism and couldn’t assess FG score?
If excluded then this may have underestimated your sample although not by much as previous reports suggest Asian women have less hirsutism

Answer: Before we grouped the women in this study, it has been informed that women who were treating hirsutism would be not involved in the present study.

6-5 - what about women who were menopausal/ perimenopausal/ on HRT/ COCP/other hormonal contraception/ pregnant /breastfeeding

Answer: Before we grouped the women in this study, it has been informed that women who were menopausal/ perimenopausal/ on HRT/ COCP/other hormonal contraception/ pregnant /breastfeeding would be not involved in the present study.

6-6 - Put BMI values and cut offs in methods not in results

Answer: We have put BMI values and cut offs in methods and deleted them in results.

7. Results

7-1 - There is still mention of hospital participants in the results and table even though these are said to have been taken out of this paper

Answer: We have corrected them in the result and table 1.

7-2 - Page 8 line 151 BMI is not a measure of central obesity

Answer: We have corrected them in the results of the manuscript.

7-3 - dont put Table 2.0 demonstrates ....write your sentence and put the relevant table in brackets at the endpage 9 line 163 where is it shown that the prevalence of IR and Metabolic syndrome is still different after adjustment for age and BMI? Not in table
Answer: We have supplemented this correction in the results of the manuscript.

7-4 - line 168-173 - not well expressed, doesn't really make sense

Answer: We have corrected them in the results of the manuscript.

8. Discussion

8-1 - It is not clear what your main findings are - these need to be in the first paragraph

Answer: We have added the finding illumination in the first paragraph of the discussion part.

8-2 - It is not clear throughout the discussion which statements refer to your study and which to other studies. Start with each of your findings and then compare to other studies and discuss why same or different eg. page 12 line 230-237 - not clear why you refer to PCOS and COCP here?

Answer: We have corrected the discussion part of this manuscript.

9. Conclusion

9-1 - It is not clear from your discussion why you state all women should have SHBG measured - it is to be expected that it is lower in women with PCOS

Answer: We have corrected them in the conclusion part of the manuscript.

9-2 - Page 13 line 253-255 - you mention free testosterone but you didn't measure free testosterone so don't know what you are referring to

Answer: Free testosterone was FAI, and we have corrected them in conclusion part of the manuscript.

9-3 - Again the COCP is not really relevant to your study

Answer: We have deleted them in the discussion part of the manuscript.

10 Table 1.0 - again mentions hospital

Answer: We have corrected them in table 1.

11 Figure 1.0 - this is not currently very helpful. A flow chart may be more useful
Answer: We have provided a new figure with flow chart as reviewer’s suggestion.

12 Figure 2.0 should be split into two figures and p values across each age group or BMI group.

Answer: We have divided the figure 2 in the old version into two parts as figure 2 and figure 3 in the revision version.