Reviewer's report

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

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Reviewer: Jacqueline Boyle

Reviewer's report:

It is a unique study with large numbers and recruitment from the community and I would like to see it published. However there are still a number of things that need to be addressed.

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?

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

3. The main findings are not clear

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

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

6. Methods: these are still not clear
   - how did you define oligo/amenorrhoea
   - 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?)
   - who were the people trained to do vaginal ultrasound - it sounds like they were not ultrasonographers?
   - what happened to those who were treating hirsutism and couldnt 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
   - what about women who were menopausal/ perimenopausal/ on HRT/ COCP /other hormonal contraception/ pregnant /breastfeeding
   - Put BMI values and cut offs in methods not in results

7. Results
   - 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
   - Page 8 line 151 BMI is not a measure of central obesity
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
- line 168-173 - not well expressed, doesn't really make sense

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

9. Conclusion
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
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
Again the COCP is not really relevant to your study
Table 1.0 - again mentions hospital
Figure 1.0 - this is not currently very helpful
A flow chart may be more useful
Figure 2.0 should be split into two figures and p values across each age group or BMI group

Declaration of competing interests:
I declare that I have no competing interests