Reviewer’s report

Title: Early prediction of preeclampsia and small-for-gestational-age via multi-marker model in Chinese pregnancies: a prospective screening study

Version: 0 Date: 06 Jun 2019

Reviewer: Daniela Di Martino

Reviewer's report:

The aim of this study was to estimate the predictive performance of screening model for preeclampsia (PE) distinct in early (< 34 weeks of gestation) and late (> 34 weeks of gestation) and small for gestational age fetus (SGA), distinct in early (< 34 weeks of gestation) and late (> 34 weeks of gestation) in chinese population during first trimester through a combination of maternal characteristics, MAP, serum PLGF and PAPP-A, by applying PREDICTOR algorithm. The analysis included 3270 patients and the incidence of early PE was 0,24% (8/3270), of late preeclampsia was 1,07% (35/3270), of PE+SGA was 0,46%(15/3270) and finally was 2,57% for SGA (84/3270).

I think that could be interesting know the performance of screening for preeclampsia and SGA in asian population, because usually the ethnicities with a higher risk for preeclampsia are black or hyspanic and the major data in the literature consider caucasian population, but I have some comments about the paper.

1) Since there are really few cases of early PE, a sample size analysis to evaluate the power of the ROC curve should be added.

2) The priority risk (page 6, line from 12 to 17) not consider smoke, previus pregnancy with PE and/or SGA, modality of conception.

3) The author used the MoM of the variables (page 6, line 18), why in the analysis adjusted a second time for gestational age?

4) Page 8 line 17 in early PE group, at risk cut off 1 in 100, the DRs of prior and posterior risks were 25.00% versus 87.50% with 0,5% of FPR for priory risk (see table 3). I wonder if the DR would increase if a FPR of 5% was chosen. An a priori risk with a DR of 25% is not acceptable.
5) Page 8 line 20 and under late PE, the respective DRs were 45.27% versus 71.43. It is illogical that the DR is higher for late PE and not for early. It is well acknowledged that the DR is always higher for the early PE. The authors should fix the FPR at the same level to allowing a comparison between early and late.

6) Table 3. I'm not sure that for early PE a cut-off of 1:20 is useful. Of course, the DR is very low since the incidence of the disease is something like 1:150.

7) Table 3. The cut off value that author choose, should consider the incidence of preeclampsia in their population (0,24% for early PE).

8) Added the PI of uterine arteries in the posterior risk would have been usefull in term of test sensibility and economy, instead of use two placental protein (PAPP-A and PI GF).

9) Page 4 line 59 the authors should describe how many times they measured blood pressure, describe the modality of measurement and specify if the sphygmomanometer was validated for pregnant women.

10) Table 4. The authors should comment why the DR for early PE are the same at different FPR 5%,10%,15%).

11) The authors found a good sensibility for SGA+PE. They should repeat the analysis consider a classification that use and consider a physiopathological mechanism of placental damage: PE+AGA versus PE+IUGR.

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

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

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

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