Thesis Review

☐ Supervisor's review ☒ Referee's review	Referee: Ivana Švandová Date: August 31, 2015

Auhtor: Lenka Šedová

Thesis ritle:
Markers for the prediction of preeclampsia and their relevance in the first trimester of pregnancy

☒ Thesis in the meaning of literature review.
☐ Thesis with original experimental outcomes.

Thesis goals: (main topic, running hypotheis…)
The Thesis endeavour to present the most important predictors of preeclampsia (PE) and to evaluate their PE prediction rate in the first trimester of pregnancy. It also tries to point out the best possible model of prediction of PE in the first trimester screening.

Thesis structure:
The Thesis structure is appropriate with respect to objectives identified and questions asked. The Thesis consists of six logical chapters in usual order and is accompanied with a substantial body of references.

Quality and relevancy of references used:
The Thesis provides a substantial list references cited in the text. Ms. Šedová is familiar with key literature in the field (including older work) and she shows a good command of relevant literature, level of referencing is appropriate. However, I strongly recommend unifying style of referencing within the text. A style sheet is not set up uniformly (Different bibliographic programs used during writing the Thesis? Copy&Paste method from different sources?).

If Thesis includes original experimental outcomes, are these obtained, described and discussed according to good practise standards?
The Thesis does not include original experimental outcomes.

Thesis quality' (style and grammar, misprints, and graphic arrangement):
Grammar and spelling are of standard quality, language is clear. Misprints are negligible. The Thesis is accompanied with well-arranged 13 Figures. Please correct heading of subchapter 4.4.3 (HLA-G instead of HLA-H).

Overall thesis quality:
To summarize, the submitted Thesis contains useful review parts, and it will also be helpful in future studies. It proves that Ms. Šedová is able to evaluate critically earlier research. The Thesis defines the intended Thesis contents. With respect to the fact that this Thesis is first scientific essay written by the student (I do suppose so), I would like to highly highlight the candidate's effort to write down the Thesis in English, thus standard scientific language :)

Questions raised (and to be answered by the author during the Thesis Defence):

I rise just three question points here:

1. I have found your statement on page 19 is a little bit misleading: „In combination with mathematical modelling to include maternal factors (age, weight etc.), the detection rate of PE requiring delivery before 34 weeks of gestation reaches 95 % at false positive rate of 10 % (L. C. Poon and Nicolaides 2014)." **That is a paragraph dealing with Doppler sonography as a meaningful biophysical marker. Thus, do you postulate here that screening by maternal factors together with Ut-PI gives** (using Bayes' theorem?) **estimated DR of 95% with 10% FPR before 34. gtt.?** /Regarding Table 1 in the paper of Poon and Nicolaides (2014), estimated delivery rate (DR) of PE requiring delivery before 34 week of gestation reflecting maternal characteristics like age, BMI, previous medical history and others reaches 51% at FPR 10%. Only screening by maternal factors together with biochemical and biophysical markers shows estimated DR of 95% (give or take) with 10% FPR before 34. gtt. (93%, for MAP, Ut-PI and PAPP-A combination, 96% for MAP, Ut-PI and PlGF combination, and 96% for MAP, Ut-PI, PAPP-A and PlGF combination, respectively)./

2. On page 21 you state: „Basically, there are two functional forms of immune reactivity – Th1 reactions (cell-mediated immunity) and Th2 reactions (humoral immunity), both mediated by T cells (T lymphocytes) that produce cytokines, the main regulators of the immunological response." **Are you sure that by definition, humoral imunity is not associated with circulating antibodies (rather than with Th2 response)?**

3. On page 25 you write: „But in the third trimester, the levels of PE women and healthy women did not deviate significantly (Steinborn et al. 2007)." **Do you mean sHLA-G1/G5 levels in the third trimenon? If so, could you outline possible explanation for this fact? To specify my question, could you describe MHC expression on maternal-fetal immune interfaces in early and late gestation? On which type of trophoblast will you see no MHC expression?** Is it villous syncytiotrophoblast in contact with maternal blood, extravillous (invasive) cytotrophoblast of placental bed, or chorion leave cytotrophoblast? Which of these interfaces regress in the second half of pregnancy and thus cannot express MHC anymore?

Supervisor's/Reviewer's recommendation on Thesis rating:

☐ excellent ☐ very good ☐ standard ☐ reject

Signature:

Ivana Švandová

Instrukce pro vyplnění:

- Prosíme oponenty i školitele o co nejstručnější a nejvýstižnější komentáře k jednotlivým bodům (dodržujte rozsah), tučně vyznačené rubriky jsou povinnou součástí posudku.
- Při posuzování je nutno zohlednit požadavky stanovené pro vypracování bakalářských prací – viz http://www.natur.cuni.cz/biologie/studium/bakalarske-studium
- Posudek se odevzdává (zasílá) v elektronické podobě na adresu: jitka.zurmanova@natur.cuni.cz (pro účely zveřejnění na internetu), a dále podepsaný v 1 výtisku (jako součást protokolu o obhajobě) na adresu: Dr. Jitka Žurmanová, Katedra fyziologie, Viničná 7, 128 44 Praha 2.