Reviewer’s report

Title: Do self-reported pregnancy complications add to risk evaluation in older women with established cardiovascular disease?

Version: 0 Date: 26 Jul 2019

Reviewer: Morounfolu Thompson

Reviewer's report:

Originality

Although not a uniquely original, topic, this is an interesting study and may have some contribution to the current medical knowledge available on this topic.

The authors may wish to read this review in supporting their study justification - Hauspurg A, Ying W, Hubel CA, Michos ED, Ouyang P. Adverse pregnancy outcomes and future maternal cardiovascular disease. Clinical cardiology. 2018 Feb;41(2):239-46.

What the authors may contribute though is in terms of risk in older women with already established cardiovascular disease, and their raising the question of a possible link with antepartum haemorrhage. The authors may therefore also wish to reflect this in their study title by adding the word "older" e.g. Do self-reported pregnancy complications add to risk evaluation in older women with established cardiovascular disease.

Abstract

A couple of adjustments need to be made in this section - a more concise inclusion of the main study objective and the statement in the conclusion that suggests a statistically significant conclusion "The mean age was 67.5 (SD 9.5) years. GHT and/or PE tended to be more common in women with CVD than in women without (20.3% vs 10.8%, p=0.066)" should explicitly state the lack of a statistical correlation.

Introduction and Background

A retrospective questionnaire study investigating a possible link between a previous history of pregnancy complications in menopausal women with or without established cardiovascular disease.

It is unclear whether this was with a view to improving risk assessment in women with already established cardiovascular disease (CVD) or assisting in screening for this. Whatever the case,
this is not clearly presented to the reader and description of the study objectives should be consistent throughout the manuscript. Clearer details are needed in the background section.

It would appear that the authors focused on trying to establish a relationship between multi-systemic cardiovascular disease after the menopause and utero-placental complications in pregnancy. Based on reports of possibly shared pathophysiological mechanisms in terms of vascular function, immunoregulation and metabolic control. On these grounds, the second and third aims need to be better explained in the background section with clearer justification for the study (Page 4, Lines 1-10). The abstract should be re-written with these in mind.

Methodology

The data is somewhat confusingly derived from a questionnaire study conducted among post-menopausal women obtained from a composite of three different cohort studies. This is a considered limitation when compared to other similarly retrospective studies in the medical literature that draw direct data from large patient databases. There are however a few published studies with similar numbers.

The pregnancy complications sought examined included previous miscarriage, subfertility, gestational hypertension (GHT), preeclampsia (PE), low birth weight, preterm birth, bleeding in late pregnancy, gestational diabetes mellitus and high birth weight.

The clinical investigation of the three arterial beds was comprehensive, and is well described by the authors, showing a high investigation uptake rate in their population. It is not stated and unclear whether or not the questionnaire employed in this study based on reference #23 (Jacobs and Hubel) is validated. The statistical analyses are only described briefly and this section because of its importance requires more detail. A couple of descriptive flow charts may be helpful and the predictive statistics basis explained, although this should be subject to the Statistician's review.

There are a couple of typographical errors

P4 Line 10 Predict not predicate

P8 Line46 - Supplement not supplementary

P11 Line 56 - Expected not expectable
P11 Lines 15-18 belongs to the introduction/background where it would make a significant difference in helping the reader to understand why the study was conducted in the first place.

There is an excellent discussion of the study limitations, and some of these statements again e.g. P11 Lines 43-51 would perhaps be more helpful if included in the background section discussing study justification.

Nonetheless, no clear relationship could be demonstrated between the self-reported pregnancy complications and established cardiovascular disease as stated by the authors, however, any conclusions to be drawn may be limited by the nature of the study and study size. This should be stated in concluding discussion as done on P10 Lines 47-50.

**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.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**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 recommend additional statistical review

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Please indicate the quality of language in the manuscript:

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