Reviewer’s report

Title: Past oral contraceptive use and high blood pressure in postmenopausal women: an observational cohort study

Version: 3
Date: 2 July 2014

Reviewer: Charumathi Sabanayagam

Reviewer’s report:

Chiu et al examined the cross-sectional association between past contraceptive use and blood pressure (BP) in a cohort of post-menopausal women. Authors concluded that there was no association between past contraceptive use and BP in the study population. I have some comments about the manuscript.

Abstract:
1. Methods: Need to provide number of participants and study location. ‘Adjusted odds ratio’, could the authors specify the variable adjusted for in the model. How was high BP defined?
2. Results: Need to provide statistics to support the interpretation, e.g. OR (95% CI), p value etc.
3. Conclusions; Being a cross-sectional study, authors should avoid the term ‘risk’ as risk can be assessed only in prospective studies. Suggest removing the last sentence as this kind of causal inference cannot be derived from a cross-sectional study.

Background
4. Page 3, Last paragraph: Again, being a cross-sectional study, authors should avoid the terms, ‘incidence’, ‘risk’ etc. which are suggestive of prospective study.

Methods
5. Questions related to assessment of BP and other covariates such as smoking, alcohol and physical activity need to be provided. How was high BP defined? Was it same as hypertension?
6. Was information on diabetes, BMI and antihypertensive medication available? If so, their relationship to OC use could be provided.
7. How were variables for the multivariable model selected? Authors could provide a basic model without adjustment or adjusted for just age, in addition to the multivariable model. Authors could consider adjusting for variables that were significant in univariate models only, instead of adjusting for all variables (if this is the method adopted for the multivariable model).
8. Line 93: Please provide P-interaction by age.
9. Suggest the authors provide a sensitivity analysis using 95% CI, instead of 99% CI.
Results:
10. What was the prevalence of past OC users? What was the prevalence of ‘High BP’?

Tables:
11. Table 1: Information on ‘Age at menopause’ is missing in Table 2. It’s not clear why BP variable is not included in Table 2.
12. Table 2: What is the rationale for the categorization of age as <58, 58-66 and >=66 etc. instead of conventional age groupings as <55, 55-65 >=65 or <60, 60-70, >=70 etc?
13. Need to include a column to indicate % with high BP under each category.

Minor issues:
14. Methods, paragraph 3: Need to specify the demographic and life style factors adjusted in the model.
15. Table 2 and 3: Variables adjusted for in the multivariable model need to be provided in footnotes.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

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