Reviewer’s report

Title: Discontinuation of anti-hypertensive drugs increases 11-year mortality risk in community-dwelling elderly (the Bambui Cohort Study of Ageing)

Version: 1 Date: 4 April 2014

Reviewer: Alice Owen

Reviewer’s report:

This is an interesting set of analyses arising from a older population cohort from Brazil. The choice of methodology (Poisson modelling) for this data is justified. I have some concern about covariates and interpretation that are listed below.

Major Compulsory Revisions

I have some concerns regarding the authors’ contention that by measuring the association between discontinuation of anti-hypertensive drugs (AHD) and non-cardiovascular mortality that they can quantify the impact of discontinuing AHD on non-CV mortality, and the suggestion that “belief in the potential cancer-inducing effects of AHDs might have led clinicians to avoid pharmacological treatment in cancer patients”.

For example, in cancer patients who have a limited life expectancy, medications for primary or secondary prevention of cardiovascular disease with no short term benefit would be deemed by many, if not most, clinicians to be inappropriate - the increase in potential adverse effects, pill burden and medication costs would far out-weigh any benefit. This is a major confounding factor in these analysis. Can the authors suggest some modifications to their analyses to deal with this important confounding factor?

As indicated in table 3, the cardiovascular disease rate was consistently (albeit not significantly) lower in non-antihypertensive users compared to current antihypertensive users across all systolic blood pressures. The authors’ claim that this was because hypertension was less severe in this group does is difficult to use as justification in cases of systolic BP above 160mmHg, or even above 140mmHg. The consistency of this result across all levels of systolic blood pressure might lead some to conclude that there is no significant effect of antihypertensive agents on cardiovascular or non-cardiovascular mortality in this older cohort. Some stronger justification for dismissal of these findings is required.

Affordability of medications is a key driver of medication initiation and persistence following prescription. It appears that an economic covariate (income) is not available for these analyses? If not, this should be included as a limitation. It would also be useful to provide some background as to the costs/access of antihypertensive drugs in the Brazilian setting, as this might not be widely known amongst the readership. Socioeconomic status is also highly associated with
health outcomes across both cardiovascular and non-cardiovascular disease settings.

Minor Essential Revisions
Spelling error; Background section, line 8 ‘Bellow’ should be ‘below’

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