Reviewer's report

Title: Prevalence and predictors of Resistant Hypertension in Primary Care Setting: A cross-sectional study

Version: 3 Date: 28 April 2014

Reviewer: Marianne E Gee

Reviewer's report:

Thank you for the opportunity to review “Prevalence and predictors of Resistant Hypertension in Primary Care Setting: A cross-sectional study.”

The authors have described the prevalence of and factors associated with resistant hypertension in a teaching hospital centre in Kuala Lumpur. The research confirms previous findings that chronic kidney disease and increased body mass index are associated with resistant hypertension, but unlike previous studies, found that older age is associated with lower odds of having resistant hypertension.

I have some major compulsory revisions which relate to lack of detail provided in the methods section of this study.

Major Compulsory Revisions

1. Sampling strategy. The authors state that the sample was randomly selected. Please also describe:

a. How the participant were recruited (i.e., by their doctor, invitation letter, phone call, etc).

b. The number of patients that were eligible, the number that were selected and recruited, the number that agreed to participate and the overall response rate.

c. Did the authors compare the sample to the source patient population – were there any differences that would suggest selection bias?

2. More clarity is need around data collection. In particular, please describe:

a. How information was extracted from the medical record. Was there more than one abstractor and were abstractors trained? Was the most recent medical record dating back from Dec 31, 2007 reviewed or all entries for 2007? What was the span of time between Dec 31, 2007 and the date for the charts?

b. Under ‘Data collection’, the authors indicate that sociodemographic data, weight and BP were captured from patient records. Please also indicate what source of information was used to capture height, to define presence of CKD, types of medications, and smoking.

c. The authors indicate that diabetes was determined by self-report or use of
hypoglycemic drugs - does this mean that an interview was also administered? If yes, why was this done – couldn’t diagnosis of diabetes have been captured from the medical record? How was the interview administered and by whom? How much time was there between the interview and the chart date?

d.How did the authors handle antihypertensive two-class combinations in the definition of resistant hypertension?

3. Statistical revisions
a. Please provide confidence intervals for proportions, given that this is a sample of patients used to represent the underlying patient population

Minor Essential Revisions
1. In Table 1, please present the same measure of variability for systolic and diastolic blood pressure. For systolic, you have used interquartile range and for diastolic, standard deviation. If the distribution of systolic blood pressure is skewed, then present both the interquartile range and the SD for both systolic and diastolic.

2. In the logistic regression model (Table 3) please show the categories used for ethnicity – In table 1 the authors show 3 ethnicity groups, but in Table 3 only ‘ethnicity’ is listed suggesting that it has been included as a dichotomous variable. Which group is the referent category? Likewise, which gender is the referent category?

3. In Table 3, please indicate the unit of increase for BMI (I assume that it is per 1 kg/m2 increase)

4. Throughout the paper, the authors have used the term ‘cohort’ which implies that that a group of people has been followed over time in a longitudinal study. It would be more appropriate to call this a ‘sample’ instead, since it appears that the study is cross-sectional.

Discretionary Revisions
1. In Table 3, present odds ratios to 1 or 2 decimal places. It is unconventional to use 3 decimal places and suggests greater precision that your sample likely allows.

2. Discussion, paragraph 3 – please be more specific on the cohort effect where older patients succumb to complications, since there are many complications that would not bias the findings– do you mean specifically a survivor effect where older patients with uncontrolled high blood pressure have died?

3. Strengths and limitations – paragraph 2 - please include a reference for the last sentence

Minor issues not for publication
1. Abstract under conclusion – should be ‘is present in nearly one in ten
hypertensive patients…”

2. Define BP acronym at first use. This should be done in sentence one of the background.

3. Discussion:
   a. Paragraph 1, sentence 2 should be “falls” not “fall”
   b. Paragraph 1, sentence 3 would read better as “This estimate is lower than the those previously observed in secondary care settings [provide references] and similar to estimates from primary care settings [provide references].”
   c. Paragraph 2, sentence 1 “findings” not “finding” and “had” not “was”
   d. Paragraph 2, sentence 2 “…increased sensitivity to salt resulting in sodium…”
   e. Paragraph 3, sentence 1 “findings” not “finding”
   f. Para 3, sentence 2 “…shown that older age is associated…”
   g. Strengths and limitations, para 2, sentence 1 “…study is that adherence to medication was not available…”
   h. Conclusion – “The prevalence of resistant hypertension in this primary care population of people with hypertension is relatively low”
   i. Conclusion last sentence “…especially those who have CKD or who are obese”

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests