Reviewer’s report

Title: Inpatient falls in older adults: a cohort study of antihypertensive prescribing pre- and post-fall

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Reviewer: Kim van Schooten

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BGTC-D-17-00505

This paper evaluates whether antihypertensive medication prescription is altered after a fall in hospitalized older people with lower than high blood pressure. The results show that changes to antihypertensive medication were limited within 24hr after the fall. They further reveal that at discharge, antihypertensive medication was reduced in 35% of people and increased in 16% of people. The paper reaches the important conclusion that antihypertensive medication frequently remains unaltered and stipulates the importance of a medication review after an inpatient fall. It is well written and pertains an important topic in ageing research.

General comments

1. The paper requires substantial knowledge of the health care system and guidelines regarding blood pressure medication to be able to follow the rationale for the analysis. Most of this knowledge is provided throughout the manuscript, particularly in the discussion, but lacks in the introduction. I would recommend adding a brief introduction of responsibilities and clinical guidelines for medication reviews to the introduction.

2. The interpretation of blood pressure readings is used inconsistently in the paper. Blood pressure readings below 140 mmHg systolic are coined both "low" and "low to normal", while these values are generally considered ideal/normal (90-120 mmHg) to pre-high (120-140 mmHg) - please adjust.

Minor comments

* P5, L20: it is unclear why only people with <140 mmHg systolic are included, please clarify in the manuscript.
* P5, L37: how well do prescriptions correspond to actual intake of medication? Would this be an additional limitation?

* P6, L1: how many people experienced recurrent falls? Analysis of these cases might add to the story.

* P8, L7: please clarify that these were Wilcoxon signed-rank tests (opposed to Wilcoxon rank-sum tests) and provide a rationale for using two tests instead of a single Kruskal-Wallis test.

* P8, L11: were certain medications often substituted by others? The current analyses of numbers and proportions may not reflect substitutions well; addition of whether the prescription was altered may enhance insight into clinical practice.

* P8, L28, "across the class of": does this mean "over/across medications"?

* P11, L42, "nonetheless, 4% of prescriptions were …": could this be due to substitution of medication by medication with less (side)effects?

* P11, L50: "with the ACEi/ARB group found to have the most frequent dose alterations …". Could a \(\chi^2\) or Fischer exact test provide insight into differences in proportions? In addition, based on Table 5, I would argue that the change in diuretics was pronounced as well.

* P12, L41, "… as they were at high-risk of further falls": this seems to be an assumption; please rephrase or provide evidence.

* P13, L12: related to general comment 1 - consider adding discussion of this framework to the introduction as it seems to clarify why a medication review should take place.

* P13, L30, "… and almost half were …": it's unclear if this is half of half (25%) or 50%; please rephrase.

* P14, L8, "The more frequent change in dose at discharge …": is there any evidence for this?

* P14, L12, "Interestingly however, some patients were prescribed a greater number …": why is this interestingly? Please clarify in the manuscript.

* P14, L33, "Indeed, stopping ACEi or ARBs is common place …": is there any evidence for this?
* P14, limitations: a major limitation in this study is the lack of insight into whether prescription was not reviewed or if change was considered undesirable. Even though this limitation is mentioned twice in the discussion, the conclusions imply that a medication review had not taken place (P15, L10-15) - please rephrase.

* P15, L8, "... most patients had no documented changes ... thereby potentially increasing ...": this is highly speculative, please rephrase.

* Figure 1: the figure quality is low, please update.

* Figure 1, "... during inpatient spell ...": the meaning of spell is unclear here, consider "with inpatient fall".

**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 am able to assess the statistics

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Please indicate the quality of language in the manuscript:

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