Reviewer's report

Title: Fall risk-increasing drugs and falls: A cross-sectional study among elderly patients in primary care

Version: 2 Date: 3 December 2013

Reviewer: Allen Huang

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The following are extensive editing comments to improve the English readability. All are considered minor essential edits. Please carefully read the final text to ensure no change in meaning has occurred.

Abstract
Sentence 3: “...Swedish National Board of Health and Welfare has created a list of fall risk increasing drugs (FRIDs) and drugs that may cause / worsen orthostatic hypotension (ODs).”
S4: “...cross-sectional study was aimed to assess...patients aged 75-years and older and who were using a multi-dose drug dispensing system.”
S7: “...outcome measures were the number of FRIDs...as well as age, sex, number of drugs and place of living...proportion of the study population...”
S8: “...secondary outcome measure was the distribution...”
S9: “The patients were dispensed a mean...”
S12: “...more common in nursing home patients.”
S14: “...female sex...”
S17: “...most frequently dispensed FRIDs.”
S18: “...total number of drugs dispensed.”
S19: “...no association with the number of ODs.”
S20: “Interventions to reduce falls in the elderly by focusing...might improve the quality and safety of drug treatment...”

Background
S1: “...patients aged 75-years and older... in Sweden between (?) 1990-2010...”
S4: “...inappropriate drug use could potentially be prevented.”
S5: “...among patients older than 65-years.”
S6: “...patients older than 65-years...”
S8: “...(FRIDs) was very common (93%)...”
S11: DELETE “Fall risk...increase the risk of falling.” – redundant sentence
S12: “...medications which can cause sedation...”
S14: “Due to age-related physiologic changes…may cause or worsen…”
S15: “…causing or worsening orthostatic…”
S16: “…urologic spasmytics may affect…”
S17-18: “Polypharmacy and the use of psychotropic drugs, especially when combined with cardiovascular medications or present as therapeutic duplications have been shown to increase falls risk [16-19].”
S 20: “…significantly reduced the risk of falling.”
S21: I have no idea what the authors are trying to say
S22: “…Sweden has produced a list of FRIDs…worsening orthostatic hypotension…”
S23: “…population 75-years or older…”
S24: “Community-dwelling older adults…”
S25: “…of them use the multi-dose drug dispensing (MDD) system.”
S26-27: “This system involves machine-packaging all the medications that the patient should take at any particular time together in small labelled plastic bags. This packaging is done at a regional pharmacy dispensing centre and means that nurses are not involved in drug dosage preparation.”
S28: “The use of the MDD system ensures a more reliable source of a patient’s active medication list.”
S29: “The objective of this study was to explore the association between the drugs on the NBWH list of FRIDs and ODs and reported falls in…”

Methods
S1: “…system aged 75-years and older… in nursing homes or in their own homes…”
S2: “…collected from a separate randomised controlled trial (RCT)…”
S3: “…nurses completed a symptom checklist…”
S4: “…is designed to identify drug-related symptoms.”
S5: “For this study…”
S6: “such as age, sex, residency…”

Please supply an English translation of the PHASE-20 tool if possible.

Data collection
S1: “The patients were recruited to the RCT…”
S3: “Baseline drug lists were screened…”
S7: “…from certain ATC groups appear on both FRID and OD lists.”
S8: “Data on hospital admissions and emergency department visits relating to falls during the year prior to inclusion… collected from the patient’s hospital electronic medical records.”
S9: “…reported falls were collected and analysed.”
S10: “Mild falls were defined as falls identified on questioning patients for events which happened during the three months before the date of the PHASE-20 checklist evaluation.”
S12: “…age, sex, total number of dispensed drugs and place of living…of the study population…”
S14: “…regression analyses FRIDs and ODs were used…while age, sex. Place of living,…”
S15: “A significance level of a=0.05 was chosen. All data were analysed…”

Results
S5: “Only 13% of the study population had no drugs prescribed form the FRID or OD lists.”
S6: “Data collected from the PHASE-20 symptom checklist…”
S8: “…data about historical (mild) falls from the PHASE-20 assessment were available only…”
S9: “Twenty-nine percent of the study patients… in the three months prior to the PHASE-20 evaluation.”
S10: “More men reported historical (mild) falls.”
S11: “There were no differences between patients who reported mild falls and those who did not with regard to age, total number of prescribed drugs and place of living.”
S12: “…collected from the patients’ EHR…”
S14: “…nursing home patients as compared…”
S16: “…multiple linear analyses…”
S17: “…positive associations between the number of FRIDs with the total number of prescribed drugs…”
S18: Being female was associated with…”
S19: “Associations were found between the number of ODs and both the total number of prescribed drugs…”
S20: “…between the number of ODs and the occurrence of severe falls.”
S21: “…different drugs were prescribed to patients among the total…”
S24: “The five most frequently prescribed…”

Discussion
S2:”A significant proportion (87%) of the study population were taking FRIDs and ODs, as in other studies…” Delete S3
S4: “More men reported historical (mild) falls…”
S5: “The study population…”
S6: “These results are similar to previously published…”
S7: “Fallers used a higher…”
S8: “It is difficult…”
S9: “Other international…include analgesics…”
S10: “Since drugs from these classes were not included in the Swedish NBHW lists our results may seem inflated.”
S12: “Female sex…”
S13: “…low bone mass, the presence of osteoporosis and low muscle strength, females are more likely than males…”
S15: “…multiple illnesses and the use of a high number of drugs.”
S19-20. Delete since there is no supporting data presented.
S21-22. Move to limitations section.
S24: “…in the study population…”
S26: “…drugs such as the commonly prescribed diuretic furosemide can cause or worsen orthostatic hypotension.”
S29: “…third of patients complaining of moderate to severe symptoms of dizziness…reported falling in the three months prior to the study, compared to less than 10% in those who had no complaints.”
S30: “This suggests…the PHASE-20 symptom checklist might be a useful tool to predict falls among elderly patients.” (authors should comment in the future research section that psychometric properties of this tool should be investigated)
S31: “…due to the use of the MDD system.”
S32: “The reliability of the data is high since it was collected in a standardized manner by a single individual.”
S34: “The study population was from several different geographic regions in Skane, Sweden…”
S35: “…the symptom checklist…had direct contact…which ensured more accurate description of their symptoms.”

Limitations
S2-4 delete.
S5: “Since no fall risk assessment tool was used we are unable to stratify patients into low and high risk for falls.” Move S21-22 from above section to here.
S6: “Another limitation…lack of geriatric assessment. The identification of cognitive impairment, comorbidity and functional disability would clarify the presence of other potential factors in increased falls risk.”
S7: “…regardless of the defined daily dosage of each drug.”
S8: “More detailed drug information might have allowed a better understanding of whether drug dosage affects falls risk.”
S9: “...even though some of them were not...”
S10: “and were possibly less prone to falling.”
S11: “…retrospective it is unknown what each study patient’s drug profile was during the period prior to the PHASE-20 evaluation.”

Future research
S1: “…assessment tool including FRIDs to be able to stratify the patients into low...”
S2: “…would also improve the strength of the association of exposure to FRIDs and subsequent falls.”
S3: “…used the MDD system.”
S4: “Although this system was originally developed to improve patient safety and drug compliance especially among those with multiple chronic co-morbidities, studies indicate that the use of the MDD system may be associated...”
S5 delete.
S6: “…assess the possible effect of medication reviews ...”

Conclusions
S1: “…common in this study population.”
S2: “…women had higher rates of falls requiring emergency room visits or hospitalizations.”
S3: “The number of FRIDs...”

List of abbreviations
ODs=...worsen orthostatic hypotension
Table 2 title: “...study population”
Table 3 title: “…age, sex, place of living…”
Table 3 footnote OD=...worsen orthostatic hypotension
Table 4, column 1: change “gender” to “Female sex”; change “Living form” to “Community living”

Supply an English translation of the PHASE-20 questionnaire if possible.

Level of interest: An article of importance in its field

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.