Reviewer’s report

Title: Implications for treatment burden of comorbidity and polypharmacy in people with stroke: cross-sectional population-based study

Version: 1 Date: 26 May 2014

Reviewer: Danijela Gnjidic

Reviewer’s report:

The implications of polypharmacy and multimorbidity in patients place a major burden on the healthcare systems and society internationally. The authors make best use of the available large datasets to untangle some of the issues in relation to treatment burden in people with and without stroke. The paper is well structured, however I had some suggestions for the authors.

Major essential comments

Introduction

1. I suggest authors provide some data on polypharmacy/multimorbidity prevalence in the introduction section.

2. Aims should be more specific/clear. I.e. comparing polypharmacy/multimorbidity in people with and without stroke.

3. While authors point out that there is no specific cutoff to define polypharmacy I believe this is commonly defined as 5 or more medications - in particular in studies of older people.

4. Considering the large sample size in this study, I suggest authors conduct subgroup analysis across age groups (younger and older adults). Do authors anticipate to observe similar treatment burden prevalences across all age groups?

Methods

5. I feel methods section could be improved to include better description of datasets and data linkage process (especially for an international audience). A flow chart deriving study population would be helpful.

6. What was the time frame used to define regular prescriptions? Studies suggest 90 days and more is most sensitive (Fincke B et al PDS 2004).

7. Should have a paragraph on covariates included in the analysis.

Results

8. Should table 1 include data on covariates?

9. Regular prescriptions, spearman correlation analysis - this should be mentioned in methods too.

Discussion
10. Overall I thought this section is too long and somewhat repetitive.
11. How can you compare the results with studies conducted in older populations when you haven't done the analysis in this subgroup?
12. Confounding due to disease severity should be mentioned in the study limitations.
13. Why not look at clinical consequences of treatment burden when can routinely link datasets?

Minor essential comments
14. Suggest to combine Table 1 and 2
15. Figures - please define what OR stands for?
16. Fig 2 - it is stated that you are looking at medical conditions but have a bar for 'drug-related problems'. Please clarify this.

Quality of written English: Acceptable

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