Reviewer's report

Title: A retrospective cohort study of psychosis in Parkinson disease: implications of patient-related risk factors and trigger medications

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Reviewer: Christoph Schrader

Reviewer's report:

Sawada et al. have revised their paper thoroughly. Almost all of my questions and concerns have been addressed: All formal issues such as incomplete or incorrect referencing were changed, language is much improved, and almost all of my questions have been responded to satisfactorily. Moreover, I thank the authors for adding information on dopaminergic medication in elderly patients which I consider very valuable.

However, even though some limitations now are discussed on page 12 lines 279 onwards, in my view, there are few more limitations that deserve to mentioned:

1. Considering H&Y and MMSE to be stable over an observation period of 2 years and if not, assuming that their deterioration would not affect the results is in my view difficult. It seems that the co-reviewer feels the same on this issue. I consider this a limitation which deserves to be discussed in a limitations section.

2. The aim of the study was to assess patient related risk factors für psychosis. Patients having undergone surgery were censored, and the reason the authors give is that delirium (or psychosis?) could have been a sequel to surgical interventions. On the other hand, patients suffering from other medical conditions such as infections were included, since infections not always cause delirium. The same is true for surgery: not all patients become delirious after an operation. This reasoning does not seem plausible to me.

So, not differentiating between patients with or without concomitant medical conditions still is a limitation which deserves to be mentioned and discussed in a limitations section. I do understand, however, that this differentiation in many cases of in-patients is difficult, especially when doing a retrospective analysis, since the presenting symptom in an emergency room may be psychosis or delirium and the reason for that finally turns out to be a new drug or a UTI.

Furthermore, a point that I feel could be discussed differently is the frequently is the high frequency of anticholinergics in this cohort. It seems that a remarkable amount of elderly patients that turned psychotic were prescribed anticholinergics, and as I understand from the text this was so because these patients were taking them for a long time and their treating physicians probably forgot to discontinue them as the disease progressed. May there are a few more reasons for this otherwise unusual medication. Anyhow, as the authors demonstrate a high risk for psychosis associated with these drugs, the frequent use of anticholinergics
may be a bias towards a higher prevalence of psychosis in this study.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I do not have any competing interests.