Reviewer's report

**Title:** Prevalence, incidence, and risk factors of primary open-angle glaucoma - a cohort study based on longitudinal data from a German public health insurance

**Version:** 1  **Date:** 14 Jan 2019

**Reviewer:** Alex Black

**Reviewer's report:**

In this revised manuscript, the authors present data from a large random cohort of German health insurance provider, examining the prevalence, incidence and potential risk factors for primary open-angle glaucoma. The authors have made some progress in addressing the reviewers' comments, but some further details and updates should be considered.

While the authors have somewhat improved the flow of the introduction, there is a need to provide additional commentary on what this value of this study adds to the existing literature. For example, L110 jumps straight into the aims of the study, yet readers will be unclear what the gaps in the literature are, that the study aims to address.

As such, the introduction still requires some editing to improve the flow. As one example, L144 simply starts by stating all of the values from the Mukesh study, followed by Cedrone etc. It would benefit from some introductory statement prior to listing details about the specific studies. And importantly, what are the gaps in these studies that highlight the need for the present study. This comment relates to all components of the introduction, and are not specific to the example I have provided.

There remain a few reviewers' comments that are unanswered, or not updated in the manuscript:

- Reviewer 1: "how many died, how many had the diagnosis changed etc" The authors mention the number of deaths in their response, but it is unclear where it is in the manuscript, and the latter part of the comment remains unanswered.

Specific comments:

L126-7: It is unclear whether Ref 5 demonstrates a significant variation in prevalence estimates from previous estimates, probably due to the ambiguous statement "brought the estimated total prevalence for Europe up to…"

L174: Please clarify the statement that diagnoses included both hospital and medical practices - yet the following sentence (L176) indicates that the POAG diagnoses was from hospital discharge records.

L344 - Include the HR for the values presented in brackets, to clarify what the values refer to.

L368 - Suggest rephrase the whole sentence relating to healthy resilient persons to improve the clarity of the statement to better explain the "health selection" effect.
L389 - Please further clarify why there might be a positive effect for smoking-related cancers for readers.

L396 - Rephrase - "We conducted a sensitivity analysis…". Also the manuscript needs further information with regards to the analysis of those with another type of glaucoma than POAG - these should be a different cohort to those included in the current analysis?

L404 - While a larger older population will provide larger numbers of participants with prevalent or incident cases, please explain why this would then lead to higher prevalence and incidence rates? If anything, a larger sample should provide more precision in the estimates.

**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

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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