Reviewer’s report

Title: Adverse drug reactions associated with six commonly used antiepileptic drugs in southern China from 2003 to 2015

Version: 0 Date: 24 Nov 2018

Reviewer: Sam Salman

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The work presents an analysis of a large number of patients and events, however, there are some key short-comings in the current presentation of this data. These include lack of statistical testing and no descriptions or comparison between those that experienced AEs and those who did not in the registry.

There is room to improve wording to better convey the intended message in some areas.

Abstract

- It should be clearly stated throughout the abstract and conclusions that the work includes only patient with epilepsy, rather than all uses of the reported medications.

Background

- Page 4 - Suggest re-wording the third sentence (starting with "Currently, studies …). As written it suggest that RCTs were performed to specifically study ADRs of these agents.

Methods

- Page 6 - With regards to the classification was this performed by only one of the epileptologists alone or both together. If the former then the risk of bias with different assessors should be raised. If the latter then a description on how differences in assessment between the two were adjudicated.

- Also in reference to this assessment just to confirm that all ~5,000 ADRs were assessed by only two doctors.

- Page 7 - The sum provided is not correct. 300/1000 + 1000/1500 = 0.3 +0.666… = 0.97
Results

- Page 8 - In reference to the last sentence is it not clear why no statistical tests were performed here, or for any other assessment in this review. This is a shame given the size of the dataset and detracts from the value of the work.

- Page 9 - The last sentence needs to be re-worded as it is difficult to interpret in the current form.

Discussion

- Page 10 - The authors state "Differences in ADRs due to gender may be attributed to genetic polymorphism". This statement is false as genetic polymorphism is not related to gender. In the provided reference the same statement also is present. The original reference discusses variants in CYP enzymes influencing phenytoin severe cutaneous adverse reactions. The original reference should be provided where possible. In this case the statement needs to be changed and further consideration to the greater number of AEs in females made.

Once again no statistical testing was performed in providing this conclusion.

- Page 10 - In reference to the psychiatric vs CNS AEs it would be of great value to provide some further information on these (even a qualitative assessment) to provide the reader with greater insight and guidance.

Conclusions

- Page 13 - The authors have provided no data to support their final statement regarding omissions with SR compared to active monitoring.

Tables

- Tables 1 and 2 could be combined
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

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.

Not relevant to this manuscript

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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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