Reviewer's report

Title: Use of glatiramer acetate between 2010-2015: effectiveness, safety and reasons to start GA as first or second line treatment in Swiss multiple sclerosis patients

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Reviewer: Alexey Boiko

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Article C.Zecca et al. "Use of glatiramer acetate between 2010-2015: efficacy, safety and reasons to start GA as first or second line therapy in multiple sclerosis patients"

The article is discussing the effects of widely used DMT in everyday life. The presented data must be recalculated according to statistical recommendations (see in Trojano M, Tintore M, Montalban X, et al. Treatment decisions in multiple sclerosis - insights from real-world observational studies. Nat Rev Neurol. 2017 Feb;13(2):105-118) to reduce bias and limitations in such studies.

Main questions:

1) The annual relapse rate (ARR) in MS is decreasing with increasing of MS duration. Adjustment for this must be done. The detailed data on patients with relapses and no EDSS progression as well on EDSS progression without relapses must be discussed.

2) 62 patients stopped GA therapy (27.4%). 22 patients stopped the GA therapy because of "patients choice" and 11 - "treatment failure". There are no characteristics of these patients, why the response to GA was not optimal, this is the most important point. In 44 patients from this group (20%) GA therapy was stopped and other DMTs were started. Does it mean, that 18 these patients with RRMS did not receive any DMTs after GA? May be they have already SPMS? 24 of them started second line therapy (only 10 because of breakthrough diseases ??), where is the last one patient from this group (11 had treatment failure)? Plus 10 changed to interferon beta-1a. Why? What was going on with the last 10 patients, who stopped GA and started other DMTs? Might be they started to receive oral first line DMTs? Why this happened, because of AEs, low adherence?

3) What was going on with 8 patients with pregnancies on GA? Was this DMT stopped? What happened with these patients after delivery?

Only after recalculation of the data and analyzing the difference between optimal responders and not responders the article could be accepted for publication.
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.

No

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?
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