Author's response to reviews

Title: Adherence and Cost in Multiple Sclerosis Patients Treated with IM IFN beta-1a: Impact of the MS-CARE Patient Management Program

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Author's response to reviews: see over
Reviewer's report

Title: Adherence and Cost in Multiple Sclerosis Patients Treated with IM IFN beta-1a: Impact of the MS-CARE Patient Management Program Version: 3 Date: 1 June 2015

Reviewer: Maria Pia Amato

Reviewer's report:

Comments to the Authors

This study aimed to provide data on the impact of a treatment-accompanying PMP on MS patients' adherence and associated clinical and economical outcomes among patients with MS treated with IM IFNb-1a in a real life practice setting by physician-based reports and patient questionnaires.

The overall adherence rate found in this observational study was approximately 80% (corresponding to a mean adherence rating of 2.0).

Patients who participated in the PMP were rated more adherent to once weekly IM IFNb-1a treatment after 12 months by the treating physician than non-participants (84% vs. 79%, statistically not significant). This suggests a positive effect of the patient support in the patient management program. There was no difference between the two groups in terms of relapse rate. After 6 months, mean reduction in cost per patient in the participants was almost twice as high as the cost reduction amongst non-participants.

Given the importance of long-term treatment adherence in chronic disease like MS, the topic of the study is of interest, although there is already substantial literature on this score.

I found the following issues:

- The proportion of patients participating in the program was rather low which may result in a self-selection of subjects.

  - Half of the patients who took the initial questionnaire participated in the program. The potential of self-selection is inherent in observational studies.
  - The bias potentially introduced by self-selection is now mentioned in the discussion.

- Beyond gender and age differences, was also educational level different in the two groups (participants and non-participants)?

  - Analysis of the educational level per PMP participation status is not available.

- Data on efficacy are not scientifically sound, given the observational nature of the study, the short term duration of observation and the potential occurrence of the "regression to the mean" phenomenon. I would therefore suggest to largely remove
those parts of the paper dealing with efficacy, focusing more on adherence results and costs.

- Statements indicating impact on efficacy have been removed/amended.
- The “Effectiveness“ section was renamed and revised.

- the above study's limitations should be clearly addressed and dealt with in the Discussion.

These points are now addressed in the amended discussion, e.g.:

- “Participation in the PMP may have been biased by self-selection of patients.
- „The observed reduction of relapse rates may have been affected by the regression to the mean phenomenon.“
- „Due to the lack of control groups, conclusions about efficacy cannot be reliably derived from the data.“

For the above reasons the study needs major compulsory revisions

- Revisions have been made as detailed above.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

- Language was revised in the full manuscript.

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

Declaration of competing interests: I received research grants and honoraria as speaker and member of advisory boards from Biogen.