Reviewer's report

Title: Association between multiple sclerosis and epilepsy: large population-based record-linkage studies

Version: 3 Date: 25 September 2013

Reviewer: Boyd Koffman

Reviewer's report:

1. Major compulsory revisions: None

2. Minor essential revisions: Under Materials/methods, last line of paragraph 1: There are two periods; remove one of them.

3. Discretionary revisions:
   a. Introduction, 6th line - consider use of the word 'nidus' instead of 'nexus'.
   b. Discussion/Possible mechanisms and implications, last sentence of first paragraph: "It is also possible that treatment of MS, or of epilepsy, may affect the association between the two diseases; but we had not treatment data to test this." Consider discussion of the warnings issued for increased risk of seizures with use of interferon (treatment for MS). The first available interferons in the US were approximately 1993 (not sure about UK). It would seem that the similar RR for subsequent epilepsy in MS in both the ORLS and English data sets did not detect a significant increase in seizures/epilepsy.
   c. Discussion/Possible mechanisms and implications, first sentence of fourth paragraph: "It is also likely that, in some people, epilepsy was the first symptom of MS . . ." Consider changing 'likely' to 'possible'. While there is a citation of work that this may be the case in 10% of persons with MS, clinically or anecdotally, I have not seen it, and imaging is so prevalent that demyelination should be picked up quickly now if it is associated with or causes an initial seizure.
   d. Table 2 and 3, footnotes: control cohort includes head injury (S06). The number or percentage of head injury subjects in the control cohort may be of interest (potential increased risk of epilepsy/seizures). Would this significantly change the data (artificially increase the rate of expected seizures in the control cohort)?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests.