Reviewer's report

Title: Statins and the risk of type 2 diabetes mellitus: cohort study using the UK Clinical Practice Research Datalink

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Reviewer: Gregory A Nichols

Reviewer's report:

This manuscript is a revision of a previously submitted work that uses data from the CPRD to assess the association between statin use and incident diabetes. As before, the study is generally well-designed and executed. I maintain that the findings are not novel, except to the extent that they are much stronger than previously reported. The authors point out that the stronger findings could be explained by the difference between observational and clinical trial data, which is a fair and important point.

My previous major concern was that the statin effect is minimal and that it merely pushes people over the diagnostic threshold of diabetes. It is likely these people would have eventually crossed that threshold anyway. The inability to control for glucose level at baseline, which is the most significant predictor of progression to diabetes, leaves me with the same impression as before; the findings as presented are of limited value, but there isn’t really anything to be done about this.

I was a little surprised that the authors were unwilling to make a number of changes suggested by the reviewers. For example, I previously noted that censoring those in the unexposed group once they initiated a statin was only done as a sensitivity analysis. I think this should have been the design of the primary analysis. The authors argued that because the sensitivity analysis showed that it didn’t affect the results, they didn’t need to make the change. I understand but disagree. There were several other comments from me and reviewer #3 (Swapnil Rajpathak) that were ignored or argued against, leaving me feeling unenthusiastic about this manuscript.

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.