Reviewer’s report

Title: Adverse drug effects observed with Vildagliptin versus Pioglitazone or Rosiglitazone in the treatment of patients with Type 2 Diabetes Mellitus: A systematic review and meta-analysis of Randomized Controlled Trials

Version: 0 Date: 25 Aug 2017

Reviewer: Hari Ananthula

Reviewer’s report:

Major Comments:

1. The background is too short. Please expand it to include any additional information relevant to this article. For example, mechanism of action of the drugs, approval status of the drugs in key regions and importance of this meta-analysis.

2. Page 8, Line 5 to 7: Elaborate why low publication bias was observed upon visual assessment of the funnel plot. I would suggest conducting a formal statistical test for detecting asymmetry in funnel plot, such as Egger's test or any such acceptable statistical test.

3. In figures 2 to 6. Briefly indicate the interpretation of the forest plot somewhere in the results or link the forest plots to the results.

Minor comments:

1) In the background section, rephrase the mechanism of action of vildagliptin, pioglitazone and rosiglitazone. Please indicate what class these compounds belong to.

2) Pg4, Line 23-26: Is there any previous meta-analysis report in the literature comparing vildagliptin versus pioglitazone/rosiglitazone. If no such report exists, please rephrase the sentence by removing the sentence "meta-analyses have seldom been used". You may want to indicate that meta-analysis has not been performed before.

3) Pg4, Line 34: Indicate in the text what databases have been searched

4) Figure 1: Rephrase the sentence "records not related to our topic". Indicate what topic you are referring to.

5) Results, Page 6, Line 23:"Five articles were further eliminated since they were case studies or meta-analyses". Do any of these five articles compare vildagliptin versus
pioglitazone/rosiglitazone? If so, please add them in the reference and indicate how your article is different from their article.

6) Pg 7, line 12: Rephrase the statement "Dizziness significantly favored pioglitazone/rosiglitazone"

7) Pg 7, Line 19: After the following text, please indicate the p value criterion used for assessing the statistical significance. "the results were not statistically significant (Figure 2)"

8) Page 8, Line 49: "This study is new in the way that it is among the first meta-analyses comparing adverse drug events between vildagliptin and pioglitazone or rosiglitazone in patients who were treated for T2DM." Is this study the first meta-analysis comparing AEs between vildagliptin and pioglitazone or rosiglitazone. If so, please rephrase this sentence and indicate that it is the first such study.

9) In table 2, under the column "drug used in experimental group", add Vildagliptin since this drug is used as well.

10) In Table 2, As per Bolli2008 article, total number of patients treated with Pioglitazone or Rosiglitazone are 281 and not 280. Please double check this number in the article.

11) Page 9, Line 20: Conclusions: "However, peripheral edema and weight gain were significantly higher with rosiglitazone. Further studies need to confirm these hypotheses."

a. Indicate what kind of further studies are needed to confirm this observation?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

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

Yes

**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?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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