Reviewer’s report

Title: Association of 4p14 and 6q27 Variation with Graves Disease: a Case-control Study and a Meta-analysis of Available Evidence

Version: 1 Date: 08 Jan 2017

Reviewer: Marketa Sjögren

Reviewer’s report:

The authors in this article replicated association to two SNPs, rs6832151 at 4p14 and rs9355610 at 6q27, discovered in GWAS in Chinese population. To elucidate discrepancies between studies trying to replicate the same finding the authors also conducted a meta analysis of all published studies. The meta analysis confirmed the association. The paper is focused and well written, with the major novelty being the meta analysis.

Major comments

In discussion, a lot of focus is on the function of genes in close proximity to the studied polymorphisms. Interesting as it is to speculate on disease causing mechanisms, maybe this section could be shortened and instead more focus should be on the discrepancies in the genetic signals.

Minor comments

Inconsistencies in reference writing space/no space before ref number.

In table 1, write out the numbers instead of ratios.

In methods section, in the paragraph about meta analysis, the last two sentences feel like repetition stated just before and should be removed.

In next paragraph you describe a random effect model, but has it been used? If not, maybe it is not necessary to mention.

In discussion, on page 1, the last to sentences are unclear and need to be clarified.

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 am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.
I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.