Reviewer's report

Title: Association of Variants on ADIPOQ and ADIPOR1 with Colorectal Cancer Risk: a Chinese Case-control Study and updated Meta-analysis

Version: 2  Date: 26 August 2014

Reviewer: Ceres Fernandez-Rozadilla

Reviewer's report:

- Major Compulsory Revisions

Materials & Methods

- Under statistical methods, it is stated that Association testing was performed under an unconditional logistic regression model with or without adjustments for covariates sex, age, drinking habit and smoking status. All four variables are included in the model as covariates as stated in Table 2. However, Table 1 states that only age and alcohol intake are statistically significant between cases and controls. How do you explain the inclusion of the other variables in the model, considering this fact could make the model slightly overfitting? Do the p-values change if sex and smoking status are removed from the regression model?

Results

- The patient characteristics section in this section is not a result by itself, but a description of the features of the cohort. Therefore it should be included in the materials & methods section.

- Under results for genotyping, the authors declare that the T allele carriers at the rs1342387 marker have an 24% decreased risk of CRC with respect to the controls. Please explain how that decrease was calculated.

- Although the number of markers is reduced, no corrections for multiple testing are performed to validate the results from the hospital-based study. Please comment on that.

- In results of the meta-analysis studies, a pooled OR is given for the association between rs1342387 and CRC risk in the published studies. However, no p-value for this association is given to ascertain the significance of this association.

- In Table 1, measure as percentages for each of the subtypes of the covariates should be given. Also, description of samples per hospital should also be included, given that the samples were collected at three different centers.

- Overall, there is much insistence on variant rs266729, and although there is no evidence of Association with CRC risk, a figure for the meta-analysis is provided, along with a long paragraph in the discussion. I do not understand the need for such long explanations provided that there are 4 other variants that are not treated in such detail. Please provide any explanations to support the inclusion of this data or otherwise I believe variant rs266729 should be treated like the rest of the markers for which there is no strong evidence for Association with CRC.
risk

The author must respond to these before a decision on publication can be reached. For example additional necessary experiments or controls statistical mistakes errors in interpretation.

- Minor Essential Revisions
Materials and Methods:
- Meta-analysis of the associations between the selected variants with CRC risk.
  In paragraph 1, it is mentioned that for meta-analysis purposes with overlapping samples, only the most complete study was included. Please clarify what “most complete” means in this context.

- Under results of the meta-analysis study, the first sentence says: "of the four included studies, five individual studies....". This seems a little off. Do the four studies have more than one stage and there are thus more “individual” studies? I suggest clarifying this or dropping the “four” altogether to avoid ambiguity.

**Level of interest:** An article of importance in its field

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

**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