Reviewer's report

Title: Serum glucose and risk of cancer: A Meta-analysis

Version: 3
Date: 29 September 2014

Reviewer: Juhua Luo

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Here are my comments for the authors

Major Compulsory Revisions:

1. The Authors claimed that 6.1 mmol/L was used as the cut-off for high glucose. Different original studies have different cut-points. Some used tertile, some used quartile and some used quintile. Please make it clearer how the authors achieved to use the cut-point of 6.1 without requesting original data.

2. As stated in the text, the mechanism by which raised glucose contributes to risk of cancer is not fully established. What are the rationales for considering prostate, colorectal and breast cancer as IGF-I driven cancers, while considering other cancers were not driven by IGF-1?

3. In the study, almost all reported I2 are higher than 75%, including many in the stratified analyses. It indicates that the percentage of total variation across studies or sub-groups due to heterogeneity is very high. The authors should focus on further investigating sources of heterogeneity (such as using meta-regression), rather than reporting the pooled RRs despite the evidence of high heterogeneity.

4. It may not be wise to combine all specific cancers together as an overall outcome, especially when serum glucose may have different or opposite effects on different cancers. For example, many previous studies reported that diabetes might reduce prostate cancer risk while diabetes may increase the risk of developing other cancers, such as breast cancer, liver cancer, and colorectal cancer.

5. In the discussion, the authors should also compare the findings associated with serum glucose with some major findings associated with diabetes and discuss the reasons for their consistency and inconsistency.

Minor Essential Revisions:

1. It is unclear if all reviewing and coding were done by one person or by two people.

2. P8.line 3. The I2 statistics for these sex-stratified analyses was 48%, 96% and 19%, respectively. It is unclear which is for which. Please clarify.

3. P7, Line 12-13. And P8. Line 8-9. Both places mentioned that “Additional cancer site-specific data were also obtained from the MECAN cohort”. It is unclear what additional data were obtained and how the authors used these information.
4. P8. Line 9-11. “The pooled relative risk were 1.09 ...... with an I2 statistics of 74%, 57%, and 53%, respectively”. Again, it is hard to guess which is for which.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.