Reviewer's report

Title: Meta-analysis of the risk of cataract in type 2 diabetes

Version: 3

Date: 7 June 2014

Reviewer: gianni virgili

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This review has synthesized studies on the association of cataract with diabetes. The manuscript is good to read and I recommend some changes.

Major compulsory revisions

A search specialist should review the present search strategy. To me, as a non-specialist, the restriction to the use of “risk” OR “incidence” may be problematic, and I would add at least “odds” OR “prevalence” or remove these keywords and report on the effect of removal. Also report an e-table listing excluded studies and reasons for exclusion. Related publications of included studies may be listed among references (e.g. early and late publications of the Blue Mountains), explaining that you have selected, for example, the longest term follow-up.

Please expand on how the target condition (cataract) was defined and measured in each included study, e.g. using LOCS III classification and what LOCS III level was used to define the presence of cataract for each subtype. This may be an important source of heterogeneity.

You should comment on the importance of study design. There is one cohort study (the Blue Mountains): was incident cataract or cataract progression assessed? Did they report risk ratios or odds ratios and, in case RRs were extracted, how did you convert RRs to ORs for analyses? There is one case-control study (Leske 1999). It seems the selection was done on diabetes (the exposure) rather than on cataract (the outcome), as classically done in case-control studies. Please clarify what was the population base of the two samples in this study (e.g. how cases were enumerated before sampling 1.1 diabetics and controls).

You have not considered study quality, and I acknowledge this is difficult for association studies, but at least the STROBE reporting initiative can be mentioned. A comment on importance of adjusted estimates can be offered.

Minor essential revisions

There are several English grammar errors or typos. Sometimes they include technical terms such as:

Page 2, line 20: odd ratio… should be odds ratio
Page 6, line 110: randomized-effect model… should be random-effects model

Page 6, line 105: report what variables this OR was adjusted for.

Page 6, line 117: an OR = 1.27 does not mean an increase by 27% of the risk as the authors state: the relationship between OR and RR depends of prevalence, so this is at least a wording error.

Page 8, line 156-7. Non surprising that this meta-analysis uses only observational studies, of course you cannot randomise to being diabetic. Please reword.

Page 8, lines 162-3. No power to detect publication bias with less than 10 studies. Please correct.

Be aware that there is little power to investigate heterogeneity with less than 10 studies in analyses. You may report on 95% CI of I-square, easily calculated using the heterogi macro in Stata. E.g. examine when most of the 95% CI lies below or above 50%.

Level of interest: An article of importance in its field

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

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

Declaration of competing interests: 'I declare that I have no competing interests'