Reviewer's report

Title: A systematic review on the effect of sweeteners on glycemic response and clinically relevant outcomes

Version: 1 Date: 12 July 2011

Reviewer: Kristina Rother

Reviewer's report:

Wiebe et al. present a carefully written report on an important topic entitled “A systematic review of the effect of sweeteners on glycemic response and clinically relevant outcomes”.

Their conclusions are somewhat disappointing and consist in the recognition that no firm conclusions can be drawn from the existing studies. In addition, the manuscript lacks a certain ease or ‘flow’ mostly due to 1) the broad spectrum of sweeteners assessed and 2) the complex nature of the statistical methods.

Major Compulsory Revisions: None

Minor Essential Revisions and Discretionary Revisions:

Methods:

A Bayesian network analysis was used in addition to the standard meta-analysis. This method is beyond the typical statistical skill of a clinical investigator, which leads to the question whether there is too little material to be analyzed due to heterogeneity and lack of suitable studies.

In addition, this report looks at a large mix of sweeteners and comparisons that it seems to confuse and dilute the authors’ message. Could one draw more concrete conclusions if one compared fewer categories?

Results:

Page 11, 3rd paragraph (2-hour blood glucose response):

For the following sentence please specify the “expected direction of effect” and specify a reference and meaning for the term of “non-clinically relevant differences”: “For the direct evidence, 3 comparisons were statistically significant, all in the expected direction of effect, but none of which excluded the possibility of non-clinically relevant differences”

Page 12, 1st paragraph (2-hour blood insulin response):

It is previously mentioned that “I2’s from 3 of 7 multi-study comparisons indicate very large heterogeneity (#77%) between the trials” and then once again in this section “I2’s from 3 of 6 multi-study comparisons indicated large homogeneity between the trials (#48%). Are these 3 multi-study comparisons with large heterogeneity the same? If so, please make note of this somewhere within the...
Page 15, 2nd paragraph:
Please specify which type of diabetes is meant in the statement “The trial in 10 diabetic participants found no effect…”

Conclusion:
Page 20, 1st paragraph:
The authors express the need for “long-term, high-quality, adequately powered trials”. Maybe one should specify that these trials should be interventional and controlled. However, while this point is theoretically absolutely correct, the practical aspect is rather difficult. It might be a real bonus if the authors made a concrete suggestion how such a trial should look like, what the sample size should be and how long the observation period should last.

Tables:
It would be beneficial to the readers’ understanding of the report to include a table outlining the inclusion and exclusion criteria. Thus, some information from the appendix should be summarized or at least indicated as a source of information.

Tables 3-6:
Please make these tables more accessible for a general reader. These are non-intuitive and difficult to understand.

Table 3: This table shows that there is no difference in blood glucose levels when non-caloric sweeteners are compared to sucrose. What does this mean?

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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