Reviewer’s report

Title: Polyethylene glycol vs. sodium phosphate for bowel preparation: A treatment arm meta-analysis of randomized controlled trials

Version: 3 Date: 10 February 2011

Reviewer: John H Kalbfleisch

Reviewer’s report:

These comments follow a request for statistical review. The meta-analysis is acceptable. I offer suggestions to assist (some) readers.

Major Compulsory Revisions – none.

Minor Essential Revisions – none.

Discretionary Revisions

(1)
The meta-analysis was performed using results of 71 (published) RCTs. Each RCT had 2 or more bowel prep treatments (arms), the prep arms were not the same for all of the RCTs and, collectively there 104 evaluable arms (Table 3). Results of each of the 104 arms were based on outcomes of many enrolled patients. The prep treatment group or arm is the unit for statistical analysis (not number of patients or number of studies). I expect the terminology that describes arranging data for meta-analysis will be confusing for some readers (study, trial, arm, treatment group definitions).

The authors can consider:
- use “Prep Treatment” for the column 1 label in Tables 2 and 3,
- Table 3, change column 2 label from “# Trial Groups” to “# of Treatment Arms”
- “Trial groups” and arms (treatment arms) seem to be the same label – use only one label throughout – “treatment group” in lines 8 and 9 of page 6 can be changed to “treatment arm” … and so on

(2)
“Pooled” is mainly a jargon of statistics. Would “Combined” be a replacement?

(3)
The implications of the statistics in Tables 2 and 3 are clear. I suggest that the authors consider additionally showing a Figure that plots individual prep arm results and the meta-analysis summary statistic (% Good or Excellent, or % Prep
Completed). For example, the vertical axis would be “% Good or Excellent” and the horizontal axis would have 7 tick marks for the 7 Prep treatments in Table 3. Above each tick mark would be a dotplot of individual prep-arm results (31 dots for NaP Sol alone…etc) and then place a bar amongst the scatter of dots for the meta-analysis summary value (76.3 for NaP Sol alone- similar to a bar for a mean response). The reader can then see scatter among prep-arm values (outliers?) and the NaP prep treatment data should be generally higher than the PEG data. This is just a suggestion to display the results in a figure (which will be easier to interpret for some of the readers and myself).

**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 not competing interests. John H. Kalbfleisch, Ph.D.