Reviewer's report

Title: A network meta-analysis of therapeutic outcomes after new image technology-assisted transurethral resection for non-muscle invasive bladder cancer: 5-aminolaevulinic acid fluorescence vs hexylaminolevulinate fluorescence vs narrow band imaging

Version: 2  Date: 16 April 2015

Reviewer: Ahmed Haddad

Reviewer's report:

The authors apply network meta-analysis to make direct and indirect comparisons of photodynamic and narrow band imaging modalities in NMIBC. The study question has value since these modalities have not been previously compared head to head. There are few major limitations that limit the impact of the paper and interpretation of results:

MAJOR

1) Since this is a network analysis that compares interventions that have not been previously compared directly, a thorough network geometry map/figure is needed to understand the interactions between the various nodes being compared. Figure 2 in its current format is not useful and should be replaced with a figure showing the number of studies that are being evaluated for each comparison. Refer to Mills et al BMJ 2013;346:f2914 doi: 10.1136/bmj.f2914 for further details.

2) Were there any studies that compared more than one new imaging modality with WLC? Table 7 suggests that all studies compared one agent with WLC, but the results (line 107, page 10) suggest that some studies may have had more than 2 arms.

3) Table 1: should include OR/HR and p-values from these studies. I don't think the age column in this table is needed. Also NIT is incorrectly labelled as "now" image technology in the legend. If "quality assessment" in this table means cochrane risk of bias, then this should be clearly shown.

4) Please combine Figure 8 and Table 2 into a single figure. These refer to the same analysis and should be shown together. Figure 8 on its own is not sufficiently informative.

5) The figure legends in general for ALL the figures are not detailed enough. The figures are not well labeled and lack legends. Specifically:
   Fig2 already discussed above
   Fig 4: needs legend, what do symbols mean?
   Fig4 is sufficient and Fig3 unnecessary.
Fig 5: funnel plots need to be explained to lay reader, what are the axes, what do these figures mean?

Fig 9: explain this figure better in legend and in results section. How to interpret this for general reader.

6) The heterogeneity assessment is shown in very mathematical terms that mean very little to the average reader (page 11, lines 121-130). The reader needs a better idea of the heterogeneity of the RCTs being compared. For example, was there heterogeneity amongst the RCTs comparing ALA vs WLC or HAL vs WLC etc. This needs to be clearly reported so that the reader can gauge the certainty of the findings of the meta-analysis.

7) Discussion: Importantly, the finding that ALA is superior to HAL needs more discussion. Is this a statistical anomaly due to smaller sample size? The individual trials show similar OR for HAL vs WLC and ALA vs WLC, so how is it possible that the indirect comparisons show difference of HAL vs ALA?

MINOR
- page 9, line 92 : typographic error
- page 10, line 101: Do they mean 410 articles not 41
- The statement on page 12 line 153 conflicts with the statement on page 12 line 149
- page 15, line 212: "NBI guided TUR is preferable"......compared to what and in what situation?
- Fig 2 legend: the last sentence starting "in four studies..." does not make sense.

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

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