Reviewer’s report

Title: Fluorescence spectroscopy combined with 5-aminolevulinic acid for in vivo detection of cervical premalignancies

Version: Date: 4 January 2015

Reviewer: Remko Bosgraaf

Reviewer’s report:

Major Compulsory Revisions

1. Abstract:
   In general: Please add the aim of the study in the Abstract.
   1.2 Methods: Most colleagues only read the abstract. Therefore, it is important to make clear what is meant with “abnormal cytology”. Please make this more clear in the abstract.
   1.3 Conclusions: There is a difference of 7.2% in specificity between fluorescence spectroscopy and colposcopy (71.4% vs 78.6%), analyzing per patient diagnosis. However, the 95% CI range is 50%. It might be better to only conclude that it is a promising diagnostic tool.

2. Background:
   The Background section is too long. Please focus on the specific background important for this study.

3. Methods:
   3.1. Exclusion criteria were inappropriate colposcopy or fluorescence spectroscopy. What were reasons for inappropriate examinations? And what is the percentage of inappropriate fluorescence spectroscopy?
   3.2. A total of 48 patients (4x48 = 192) and a total of 174 quadrants were included in this study. Why were 18 quadrants excluded?

4. Results:
   In general: The Results section is not only used for the results of this study, but for much discussion as well. For example: “Relatively…could be explained by…This suggests that…must be better.” Please rephrase this section and use subheadings for the readability.

5. Discussion
   In general: see 4. Results.
   In general: The authors do not acknowledge any other published work to which they could compare their work.
   5.2. Please rephrase paragraph 3: When comparing…desired requirements"
Minor Essential Revisions

1. Abstract:
1.1. Results: please add percentages for sensitivity in the first paragraph.
1.2 Conclusions: Please use fluorescence spectroscopy instead of FS or use fluorescence spectroscopy (FS).

2. Background:
2.1 Paragraph 1: It would be useful to add the cervical cancer incidence rates per 100,000.
2.2 Paragraph 3: The authors should also mention colposcopy with see-and-treat management, and refer to relevant literature (e.g. Bosgraaf et al., Obstetrics and Gynecology 2013).

3. Methods:
3.1. The terms “sensitivity” and “specificity” are common sense. A definition is not necessary. Please also mention in the statistical analysis section: accuracy, PPV and NPV.

4. Results:
4.1. Please refer to Table 1 in the Results section.

11. Spelling errors (the article needs more language correction than these few points):
- Abstract, Results: remove “a” in “a low and high risk”
- Abstract and further: overdiagnosis instead of over diagnosis
- Abstract and further: 48% instead of 48 %
- Abstract: paragr. 5: “malignant lesion” or “malignancy” instead of malignant
- Methods: remove “years” in the first line and mention first “place” and thereafter “time”.

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

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

Statistical review: No, the manuscript does not need to be seen by a statistician.

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