Reviewer’s report

Title: Computed Tomography Volumetry of esophageal cancer - The role of Semiautomatic assessment

Version: 1 Date: 11 Jun 2018

Reviewer: Sophia Zackrisson

Reviewer’s report:

General comment:

This is a small study examining the value of a semiautomatic method for tumour volume measurements compared to manual in esophageal cancer. It seems like there is scarce literature on the subject, why the study may make some contribution to the existing literature, albeit the small sample size. However, I have difficulties to grasp the study since it is not clear to me which measures that were compared with each other and how the software works. The study needs to be reported in more detail and guide the reader better. In addition, there are some inconsistencies that have to be clarified. Please see my specific comments below.

Abstract Ok


Methods:

Why were only 23 patients included over 5 years? There must have been more patients in the institution during that time frame. Please explain.

Were both genders included? Please specify how many men/women.

Were both adenocarcinomas and squamous cell cancer included?

How was the patient selection done? What were the prerequisites for a patient to be included? I would like to have a more detailed description of the patient selection process.

Was this study part of another study? In that case, please refer to that article

Was it only newly diagnosed patients with a primary esophageal cancer (ICD code etc)?

How was the diagnosis confirmed?

Were patients with metastatic diseases included?
"Spiral CT in the portal-venous phase..." This is stated in methods line 4. Then on line 12, same page, it is stated that the segmentation was performed in arterial and venous phase. Please clarify.

Were there any restraints regarding the CT technology (technical parameters, slice thickness, dose, type of CT machine etc?). Please, develop this part more. The reader needs more information in order to be able to reproduce the study.

I would like a more detailed description of the software used for the semiautomatic segmentation. Has it been used and described in another study? Please reference in that case. The measurements could be manually adjusted by the readers. Was it recorded how often this was the case? Were the readers allowed to look at other images or reconstructed planes to get better oriented etc? Please clarify.

The semiautomatic method was performed twice in both arterial and venous phase. It is not clear to me how this was done. Do you mean one measurement in each phase or actually twice per phase? If the latter, which measurement was used, or was the mean used? Please clarify.

Statistics: Ok, seems reasonable to use correlation, but have you considered using intra class correlation?

Minor comment: the SPSS version 11 seems very outdated. Version 25 is now used.

Results:

line 9: mean tumor volume was 46 ml. Please specify if this was the manual or semiautomatic method. Why not give the mean and range for both methods?

Data sharing: line 18. Maybe this is where the journal wants this information; but I think it would be better placed in methods under a separate headline.

Table 1: Here, the number of patients is 41? Why? 23 was stated before.

To get at better picture of the distribution of the two different measurements and of all patients, it would be helpful if this was illustrated by Bland-Altman plots.

Maybe I am confused, but I do not understand how you actually compared the different measurements. Perhaps this means that you have to explain this better to the reader.

There must be more comparisons to be made: 2 radiologist x 2 manual measurements x 2 semiautomatic measurements = 8?

Could you also report intraobserver agreement?
Was there a difference between the resident and the senior radiologist? Or how did you treat the data? In any case, it has to be more clearly described in the results section, what group of measurements that was compared to what.

Discussion:

Please summarize the major findings of your study in the first paragraph of the discussion.

You state that you have excellent agreement on line 10. You did not report a measure for agreement. Further, you state that the measurements were independent from the level of experience. I cannot see that you actually reported that in the results.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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