Reviewer’s report

Title: CT Texture Features are Associated with Overall Survival in Pancreatic Ductal Adenocarcinoma - A Quantitative Analysis

Version: 2 Date: 03 May 2017

Reviewer: Richard Kinh Gian Do

Reviewer's report:

- This manuscript shows the results of textures analysis for assessing whether radiomic features from pre-operative contrast-enhanced CT in resectable pancreatic ductal adenocarcinoma (PDAC) patients were associated with overall survival (OS). The authors calculated tumor size and five texture features (uniformity, entropy, dissimilarity, correlation, and inverse difference) with venous phase contrast-enhanced CT. The authors said that CT-derived PDAC texture features of entropy, dissimilarity and inverse difference are promising prognostic imaging biomarkers of OS for patients undergoing curative intent surgical resection. Overall, the study is well designed; however I am concerned with some methodological points including the computerized scheme, the quantitative parameters used, and data analysis.

Title:

1. In my opinion, the term "Quantitative analysis" or" Selected (GLCM) features" should be inserted since without above term, it may involve comprehensive meaning of texture features in the field of medical imaging science.

→ "Quantitative Analysis of CT Texture Features are Associated with Overall Survival in Pancreatic Ductal Adenocarcinoma" is better.

Abstract:

2. Ok.

Keywords:

3. Please add GLCM features.

→ Ok
Background:


→ Ok

Methods:

5. p.5, l.45-48: Is it adequate to exclude the patient who died within 90 days? How about that enrolling selective patients without influenced by post-operative complications to improve the study result?

→ Ok

6. p.6, l.40-42: Wrong indication of Figure 1. Sample images are shown in Figure 2.

→ Ok

7. Please explain kernel size when authors decomposed the image matrix with GLCM technique.

→ I meant the kernel size of GLCM decomposing matrix, but it's Ok.

8. Also, please explain the type of GLCM offset which was chosen in this study because the selected offset may largely effect to calculate the GLCM texture feature in 2D or 3D CT images.

→ Ok

9. p.7, l.27-32: I am not sure that all voxels with HU <-10 were filtered from analysis to remove the fluid before the preoperative CT. Isn't it be possible to affect to tumor lesion located in the margin of pancreas that surrounding fat or fatlike soft tissues when the voxels cut below -10 HU? If you have some reason to threshold that, please explain in more detail.

→ Ok
10. p.8, l.7-23: Numerical values in the sentence are not same in Table 2.

→ Ok, no problem. This is what I confused.

11. Where is another GLCM Contrast value in this manuscript? Suddenly it comes into this paragraph.

→ Ok

12. p.8, l.32-35: If you compute and show the size of tumor in the result section, please mention it before in M&M part.

→ Ok

13. In addition, did you calculate the size of tumor in 3D? There is no result values of tumor size in this manuscript.

→ Ok

14. Please describe the reason why the feature, entropy should be normalized in this study in more detail in M&M section.

→ I didn't see the related scripts.

Discussion:

15. There are recent papers that authors can be helped from radiologic field for predicting in a variety of other adenocarcinomas with 2D or 3D texture features.

→ Ok

Conclusion:

16. Ok.
List of abbreviations:

17. Typo, abreviations → abbreviation
   → Ok

18. GLCM is generally called "Gray-Level Co-occurrence Matrix".
   → Ok

19. AUC is generally called "Area under the curve".
   → Ok

20. Figure 2: I am not sure whether authors apply 3D scheme to the CT images for texture analysis. Also, it is better to use a feature map for future reader's understanding rather than using original CT image. I can only recognize that the changes or difference of tumor size from Figure 2. Please clarify Figure 2 with GCLM feature map.

   → Ok.

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

Yes

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

Yes

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

Yes
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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