Reviewer’s report

Title: The association of liver function and quality of life of patients with liver cancer

Version: 0 Date: 12 Dec 2018

Reviewer: Research Square

Reviewer’s report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?

No - there are minor issues

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?

No - there are major issues

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?

No - there are major issues

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?

No - there are major issues

Could an appropriately REVISED version of this work represent a statistically sound contribution?

Maybe - with major revisions

STATISTICAL REVIEWER COMMENTS:
The manuscript entitled "The association of liver function and quality of life of patients with liver cancer" presents correlation analyses between a few quality-of-life (QOL) parameters and a few liver functions in the patients having Hepatocellular carcinoma (HCC), a common type of liver cancer. The authors briefly describe the QOL parameters and the liver function parameters in tables. They also briefly describe the association studies done elsewhere and the importance of such relationship in the overall survival of the patients with HCC. After the study, the authors were able to observe some association/correlation between the QOL and liver functions. Strength of the manuscript is the large number of subjects in the study and weaknesses are the statistical analysis and English write-up. Appropriately revised manuscript can be interesting to some people working in the area of HCC.

REQUESTED REVISIONS:

1. The statistical analysis part of the manuscript is very weak. The authors have wrongly mentioned that T-test was used to assess the correlation. T test does not measure the correlation. T-test is used to assess the difference in mean scores between the two groups. The way it is presented in the manuscript, it looks like a few liver functions were dichotomized and the two sample T-test was used to assess the difference in the QOL scores between the two groups of liver functions. However, the rationale of such dichotomization should be presented. For example, why child class was groups as A vs B+C, ALBI grade was grouped as G1 vs G2+3 etc. Alternatively, the comparison of the QOL scores can be done for more than two groups using One-way ANOVA or Kruskall Wallis test.

2. Next, a large number of pairwise comparisons were done and presented in the manuscript. However, no multiple testing adjustments are done. The type I error increases as number of comparisons increase and therefore appropriate adjustments are required before drawing any interpretations. There are several methods to do that e.g. Bonferroni method, Benzamini and Hochberg's FDR method etc. This will help in controlling false positives.

3. The authors talk about overall survival (OS) but there is no analysis or discussion presented in the manuscript about any survival analysis. Perhaps, survival analysis is out of scope of this manuscript.

4. In the results section, authors have simply described the large number of correlations in words. It would be helpful to the readers if the authors present the selected important results in the form of figures and diagrams. For example, the comparison across the groups can be presented with boxplots, and comparison of the continuous variables with scatter plots with trend lines on them.

5. There are several grammatical errors throughout the manuscript. At some places, it is very hard to understand what the authors mean. Professional English language edit is required to improve the manuscript.
ADDITIONAL REQUESTS/SUGGESTIONS:

NA"

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.

No

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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