Reviewer’s report

Title: Dual kidney transplantation offers a safe and effective way to use kidneys from deceased donors older than 70 years

Version: 1 Date: 27 Sep 2019

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 minor issues

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

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

Could an appropriately REVISED version of this work represent a statistically sound contribution?
Probably - with minor revisions

STATISTICAL REVIEWER COMMENTS:

The authors have responded to some of the comments provided but not to all. They have not responded to queries about study design satisfactorily. They have not responded to queries about sample size calculation, basis for waiver of the written informed consent, statistical analysis, citation asked in Discussion section, and other. The authors are requested to address those comments.
The authors have applied Kruskal Wallis test, Wilcoxon rank sum test, Fisher's exact test, Kaplan-Meier analysis, Cox proportional-hazards regression, and Generalized Estimating Equation (GEE) for their continuous and categorical variables. These are the areas they have done well in terms of statistics to strengthen the trustworthiness of their findings.

The authors have not clarified the issues of the application of Kruskal Wallis test and posthoc analysis with Wilcoxon rank sum test and the application of Fisher's exact test specifically. Statistical tests without sample size calculation have decreased credibility of the findings.

REQUESTED REVISIONS:

ADDITIONAL REQUESTS/SUGGESTIONS:

Materials and methods:
Study design: The authors have responded that "This study was a retrospective single center study and analyzed Samsung Medical Center electronic medical record and kidney transplantation database" under 'Study design' heading. The retrospective nature depicts its direction of enquiry and does not indicate the study design as such because retrospective studies may be cross-sectional, case-control, cohort and any other. It seems that it was historical cohort study. Clarify the exact study design.

Sample size calculation: The authors have not responded to this query.

Basis for waiver of the requirement of the written informed consent: The authors have not responded to this query.

Discussion:
Citation to support the statement "Although we did not utilize this approach, use of mTOR inhibitor to lower doses of calcineurin inhibitors represents a potential way to improve outcomes" is still missing.

Please confirm that you have included your review in the ‘Comments to Author’ box?

As a minimum standard, please include a few sentences that outline what you think are the authors’ hypothesis/objectives, their main results, and the conclusions drawn. Your report should constructively instruct authors on how they can strengthen their paper to the point where it may be acceptable for publication, or provide detailed reasons as to why the manuscript does not fulfill our criteria for consideration. Please supply appropriate evidence using examples from the manuscript to substantiate your comments. Please break your comments into two bulleted or numbered sections: major and minor comments.

Please note that we may not be able to use your review if no comments are provided.
Please only upload as attachments annotated versions of manuscripts, graphs, supporting materials or other aspects of your report which cannot be included as text in the ‘Comments to Author’ box.

Yes

**Are the methods appropriate and well described to allow independent reproduction of experiments?**
Please state in the ‘Comments to Authors’ box below what you think are the strengths and weaknesses of the methods (study design, data collection, and data analysis), and what is required, if anything, to improve the quality of reporting

No

**Does the work include the necessary controls?**
If not, please explain in the ‘Comments to Author’ box below.

No

**Are you able to assess the statistics?**
- Are the statistical test(s) used in this study appropriate and well described?
- Is the exact sample size (n) reported for each experimental group/condition (as a number, not a range)?
- Are the description of any error bars and probability values appropriate?
- Are all error bars defined in the corresponding figure legends?
- Has a sample size calculation been included, or a description and rationale about how sample sizes were chosen?

Please can you confirm which of the following statements apply to your statistical assessment of the manuscript (Please include details of what the authors need to address in the ‘Comments to Author’ box):

I have been able to assess all of the statistics in this manuscript (please refer to checklist above)

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in the ‘Comments to Author’ box below.

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

Acceptable

Should the manuscript be highlighted for promotional activity?
Articles that are deemed of interest to a broad audience can be promoted in a variety of ways. This could be through email updates, postings on the BioMed Central homepage, social media, blogs and/or press releases. Please indicate in the text box below whether you think this manuscript should be considered for promotional activity, indicating your reasons why (e.g. what is the most newsworthy aspect of the research).

No

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

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2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

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5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

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