

Dear Editors,

We are resubmitting the manuscript entitled, “The Effect of Transplant Center Volume on Post-Transplant Survival in Patients Listed for Simultaneous Liver and Kidney Transplantation” and labeled as manuscript 36378. We would like to thank you for the opportunity to revise our manuscript. We appreciate the thoughtful Reviewers and feel the changes have strengthened the manuscript and that it is now suitable for publication.

Significant literature discrepancies are present regarding Simultaneous Liver Kidney Transplantations (SLKT) vs. Liver Transplantations Alone (LTA) outcomes. Because listing for SLKT is center-dependent rather than guideline-driven, our aim was to assess whether center volume moderates survival differences in the SLKT vs. LTA populations.

Our analysis demonstrated that of all patients listed for SLKT, there was a significant survival disadvantage when receiving LTA compared to SLKT; however, this disadvantage was diminished at centers that performed an increased number of SLKT over the study period (3% reduction for every 10 SLKT performed). We believe these findings may help explain inconsistencies in the literature and suggest national standardization of SLKT listing criteria may be warranted, especially for smaller centers with a larger survival disadvantage between SLKT and LTA populations.

We have included the Reviewers comments below in *italics* and added our comments in **bold**. Additionally, changes have been highlighted in the manuscript.

Reviewer 1

In this manuscript, Modi et al. address that the effect of transplant center volume on survival differences between simultaneous liver kidney transplantation (SLKT) and (LTA). First, they found that SLKT patients had better survival rates compared with LTA. Further, they showed that the survival disadvantage of LTA compared with SLKT was attenuated as center volume increased. The author’s work is useful and the meaning is generally clear. However, there are several points in this manuscript, which need to be addressed.

1. In the first paragraph of the results, the authors mention that “There were 121 transplant centers represented in this sample, with a median SLKT volume of 33 ... was 561 over the entire study period (range: 4 - 2696; IQR: 214- 986)”. How did the authors get the statistical results?

We calculated the number of SLKT in each center.

2. In discussion, it should be addressed whether covariates affect mortality differences between LTA and SLKT recipients, such as recipient age, gender, race, etc.

We estimated mortality differences according to transplant type independent of these covariates.

3. Reference 8 is not complete. The authors need to carefully check that each reference in the references was cited, and that each citation in the text is included in the references. **The DOI was added to reference 8 (10.1097/00007890-199712270-00024).**

Reviewer 2

*The authors present the paper "The Effect of Transplant Center Volume on Post-Transplant Survival in Patients Listed for Simultaneous Liver and Kidney Transplantation". They conclude that LTA is associated with increased mortality among patients listed for SLKT. This difference is modestly attenuated at more experienced centers and may explain inconsistencies between smaller-center and larger registry-wide studies comparing SLKT and LTA outcomes. The present study is well written, structured and designed despite being a retrospective study. One of the great advantages of this project is the large sample size although it presents the disadvantages of follow-up that the authors detail in the manuscript. The topic of the influence of the effect center volume has been described extensively but the results obtained by this study help to reconcile controversy in the literature regarding the size and outcomes of LTA in patients listed for simultaneous liver and kidney transplantation. Despite of the present results should be interpreted carefully due to methodology they could help in the SLKT listing guidelines. Minor revisions: In Kaplan-Meier post-transplant survival curves, according to type of transplant, the authors should include the number of patient at risk under the figure. **Under Figure 1, we included the following sentence: "Actuarial 1, 3 and 5 year survival rates among the LTA and SLKT groups were 68% versus 87%, 59% versus 79%, and 53% versus 72%, respectively."***

Reviewer 3

The study is overall informative and interesting. The renal function and relative treatment for renal failure in the LTA patients shifting from SLKT list before and after liver transplantation should be compared. The survival rate of the LTA patients who received dialysis should be compared with those didn't. The percentage of SLKT-listed patients received dialysis is surprisingly low as shown in table one.

We thank you for your comments.

Reviewer 4

This interesting paper by RM Modi examines the outcomes of simultaneous liver kidney transplantation (SLKT) versus liver transplantation alone (LTA) among patients listed for SLKT. In particular, the Authors examined the effect of center size on survival differences between SLKT and LTA in SLKT-listed patients. The manuscript has not novelty but it has merit since the large number of patients involved. In fact, the study includes 4580 patients obtained from the OPTN Standard Transplant Analysis and Research (STAR) Database and listed for SLKT, of whom 393 (9%) received LTA and 4187 (91%) received SLKT. The Authors demonstrated that centers with higher transplant volume achieve smaller difference in mortality with LTA as compared to SLKT among patients initially listed for SLKT. These findings further demonstrate the need for standardization of SLKT listing guidelines. The English is fluent and the statistic tools are adequate.

We thank you for your comments.

Editor

We have accepted all Tracked Changes in the Manuscript.

ORCID Numbers have been added.

Audio Core Tip has been recorded and added to the submission.

All listed authors have contributed, read, and approved the manuscript. This manuscript has not been published previously in print or electronic format and is not under consideration by another publication or electronic medium.

I am submitting this revision on behalf of my co-authors. We look forward to a hopefully positive processing of this manuscript.

Sincerely,

Rohan M. Modi, MD

Khalid Mumtaz, MBBS, MSc

The Ohio State University Wexner Medical Center
395 West 12th Avenue, 2nd Floor
Columbus, OH 43210

Email: rohanmmodi516@gmail.com; khalid.mumtaz@osumc.edu