Quality Improvement in Liver Transplant Anesthesia: Early Extubation in the Operating Room

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Introduction

Early extubation and fast-tracking results in faster transition from ICU to the ward and reduces costs

Early extubation in the operating room is a feasible option for selected liver transplant recipients

Our goal was to change our practice to increase number of patients who are extubated in the operating room and early (within 6 hours) of their ICU stay

We also examined predictors of extubation in patients who had their abdominal wall closed at the conclusion of liver transplantation

Methods & Objectives

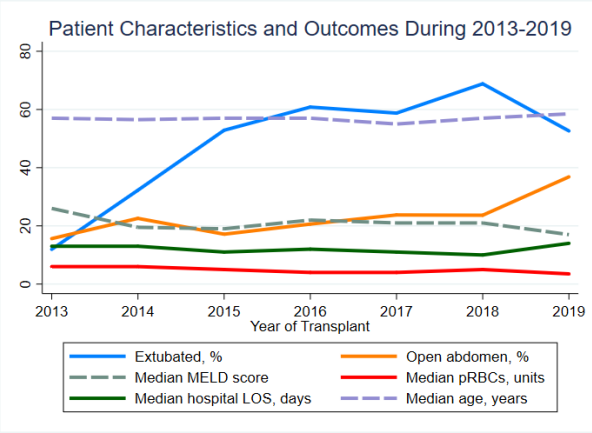
- In 2012 our liver transplant anesthesia group reviewed up-to-date literature of early extubation practices and fast-tracking of liver transplant recipients
- We developed a protocol to encourage early extubation practice and fast-tracking of liver transplant recipients
- Since 2012 through now we changed our practice and adjusted practice based on culture change among anesthesiologists/ surgeons and critical care physicians
- We collected early extubation, length of stay and mortality data on 641 adult recipients from 2013 through May of 2019
- We developed a predictive model of early extubation for patients when abdominal wall was closed at the conclusion of transplant

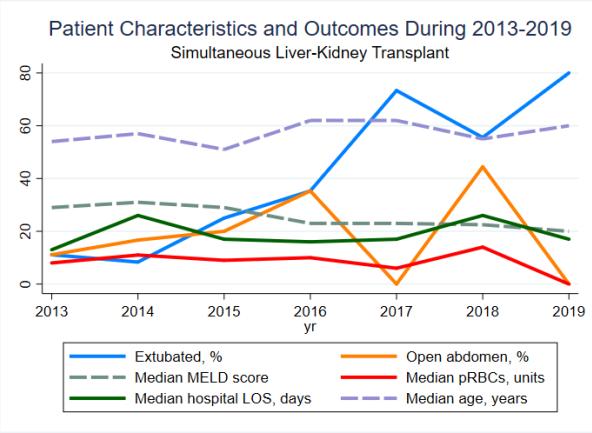
Results

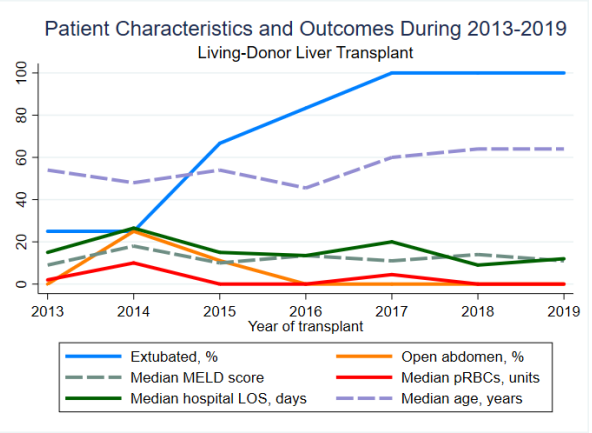
- 641 adult patients underwent transplantation
  - 512 deceased-donor liver transplant
  - 84 simulataneous liver-kidney transplant
  - 45 living-donor liver transplant
- Proportion of extubated patients has increased over time in the entire cohort and within each group
- Leaving abdomen open is the single most important predictor of failure to extubate in the operating room
- When abdominal wall was closed, predictors of extubation included only year of transplant, transfusion of pRBCs and lactate concentration at the last draw in the operating room

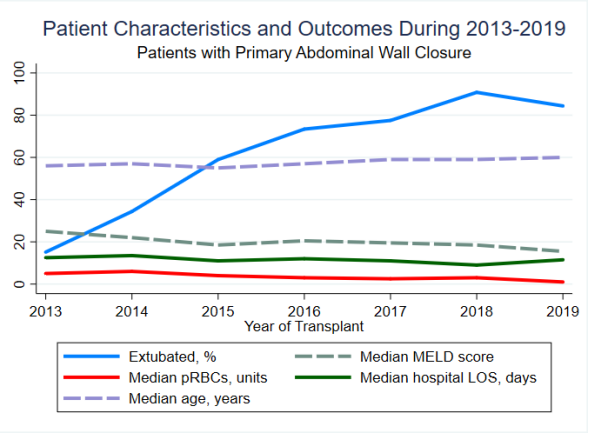
Results

Click graphs to enlarge









Conclusions

- Implementation of a systematic approach to extubation of liver transplant recipients in the operating room results in high extubation rates
- Additional evaluation is required to assess whether early extubation results in decreased length of ICU or hospital stay, and whether reintubation is commonly required

References