Orthotopic Liver Transplant and Post-Operative Renal Replacement Therapy: A 5 year review

Dr S McGuinness, Dr V McMullan, Dr J Boylan

ST. VINCENT'S UNIVERSITY HOSPITAL
Elm Park

INTRODUCTION

Post-operative renal replacement therapy (RRT) has been linked to increased mortality in orthotopic liver transplantation (OLT) recipients. Ireland's single-centre national liver transplantation program commenced in 1993, and has now performed over 1000 transplants. This review aimed to investigate current rates of RRT in Irish OLT recipients, patient and perioperative factors associated with the requirement of RRT and any subsequent impact on 1 year mortality.

METHODS

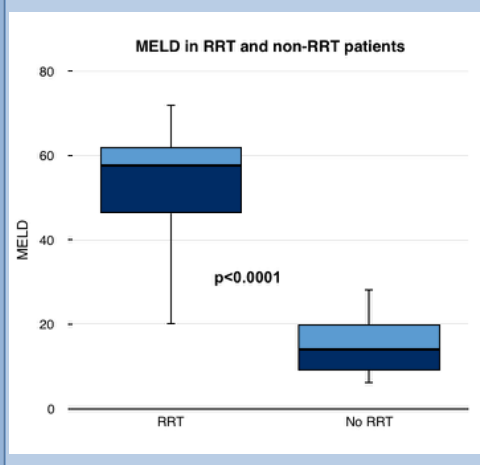
OLT recipient data was collected retrospectively (2013-2015 inclusive) from electronic patient records, and prospectively (2016-2017 inclusive) from perioperative databases maintained by anaesthetists and transplant coordinators. Re-transplantation and combined procedures were excluded. Statistical analysis was undertaken using Prism (7.0). Categorical data were analysed using Fisher's exact test. Continuous data were analysed using student's T or Mann Whitney test appropriate to data distribution. Data is presented as median values.

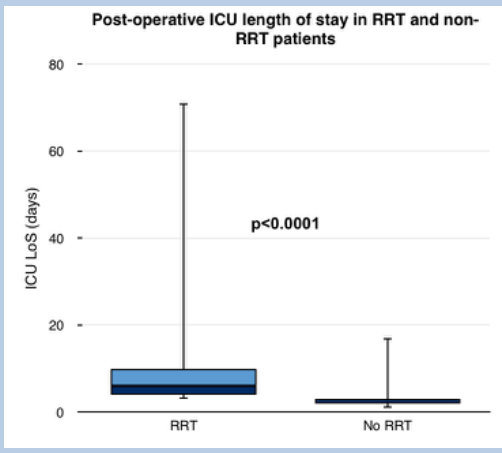
RESULTS

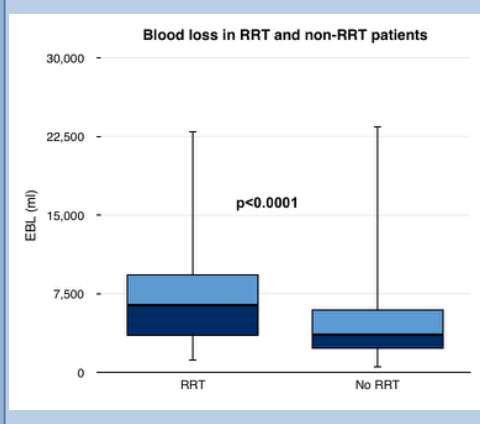
We identified 249 patients who underwent OLT over a five year period, from 1st January 2013 to 31st December 2017. Post operatively, RRT was instituted in 23% of OLT patients included (RRT 57, non-RRT 192). The RRT group had higher preoperative MELD scores, intra-operative blood loss and post-operative ICU length of stay (LoS) (see Table 1). One year mortality was significantly increased in the group receiving RRT.

	Post-op RRT (n = 57)	No RRT (n = 192)	P-value
Recipient MELD	20	14	<0.0001
Blood loss (ml)	6450	3620	<0.0001
ICU post-op LoS (days)	6	3	<0.0001
1 year mortality	9 (15.8%)	6 (3.1%)	0.0016

Table 1. Differences between RRT and non-RRT patients. Values expressed as medians for MELD, blood loss and ICU LoS and as number of patients for 1 year mortality.







Graphs 1-3.
Box plots showing relationships between RRT and non-RRT groups

CONCLUSION

In keeping with other OLT centres, Irish OLT recipients required RRT at a similar rate and were more likely to have a greater severity of illness preceding OLT, increased blood loss peri-operatively, and to have increased mortality at one year. A future review of pre- and postoperative plasma creatinine, creatinine clearance, MDRD-4 and MDRD-6 as well as CKD-EPI in this patient group would help delineate risk for RRT further.

REFERENCES

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