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Introduction

- Liver Transplant (LT) is a complicated surgical procedure with high risk for massive intraoperative blood loss.
- The transfusion service will direct most of their resources with great impact on cost.
- Cadaveric liver transplants occur within short notice, hence there will be a need for a thorough logistic planning by the transfusion service to support the procedure.

Objective

- To identify the intraoperative blood transfusion requirement for Liver Transplant Surgery.
- To analyze the patients' outcome within 90 days of post-liver transplant surgery.

Materials and Method

- The study includes retrospective data analysis of 18 patients who underwent LT at Hospital Selayang between January 2020 and December 2020. Data were collected from the electronic patient information system.
- Pre-operative, intra-operative and post-operative data were analysed from all patients who underwent LT.
- High Blood Loss (HBL) is defined as EBL > 5000 ml while Low Blood Loss (LBL) is defined as EBL < 5000ml during surgery.

Discussion

- Packed Red Blood Cells (PRBCs) and Platelet Concentrate transfusions were significantly associated with high blood loss (HBL) group. Meanwhile, FFP and cryoprecipitate transfusions were not significantly associated with the blood loss group among liver transplant recipients.
- The Maximum Surgical Blood Ordering Schedule (MSBOS) for LT surgery has been standardized at 30 PRBCs : 30 Platelets : 30 FFPs.
- Based on the analysis, the MSBOS will be revised to 15:15:15 to ensure a more efficient blood inventory management related to Liver Transplant Surgery.
- Post-Liver Transplant recipients' survival rate within 3 months in Hospital Selayang (78%) is comparable to other centers abroad.

Results

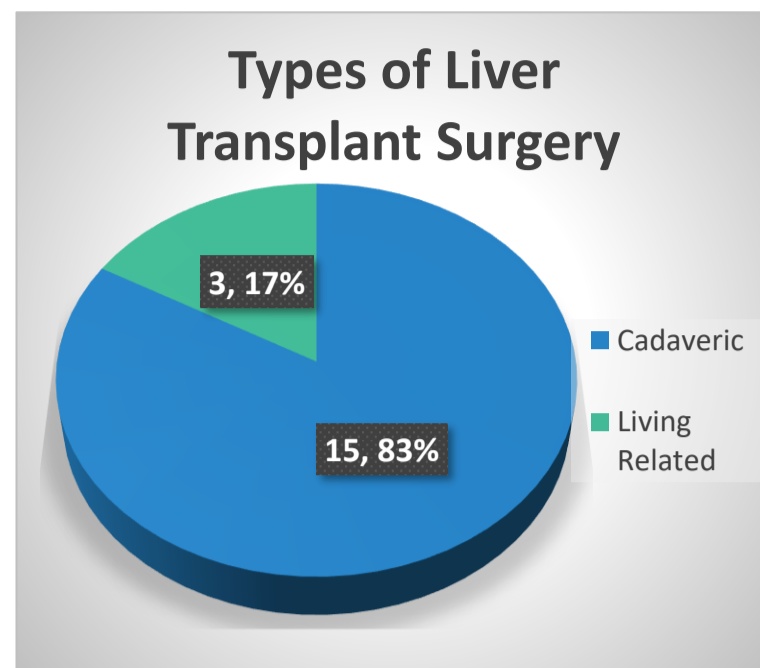


Figure 1

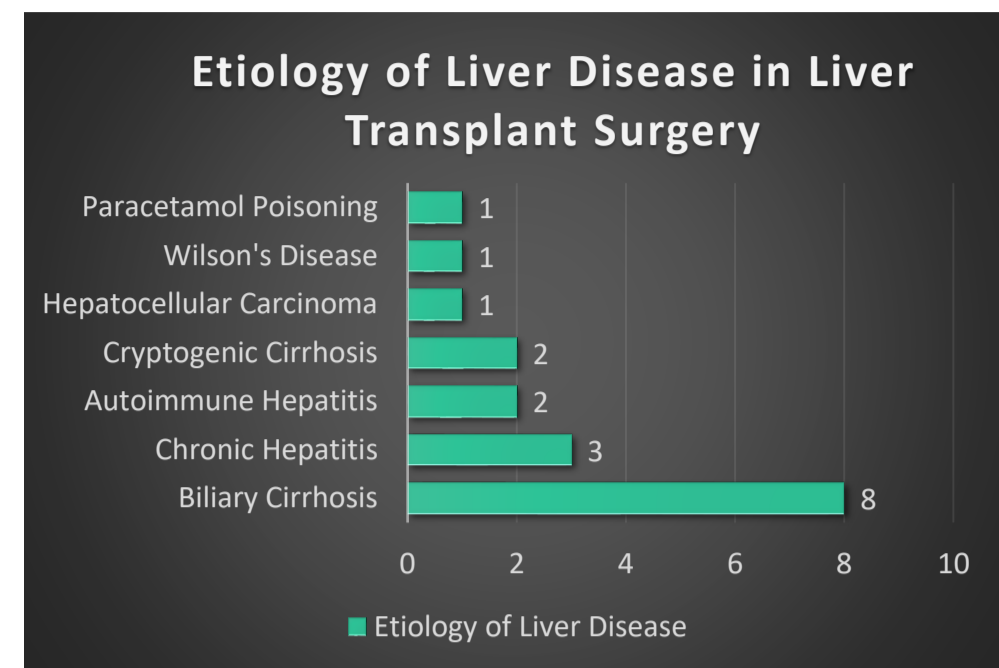


Figure 2

Characteristics	All Patients (n=18)	HBL (n=9)	LBL (n=9)	p value
Duration of Surgery (min)	562 ± 125	583 ± 135	542 ± 119	0.507
Blood / Blood Component Transfused				
PRBC (Units)	4.17 ± 3.3	5.89 ± 3.8	2.44 ± 1.7	*0.024
Random Platelet Concentrate (Units)	7.56 ± 5.5	10.44 ± 5.3	4.67 ± 4.3	*0.031
FFP (Units)	9.50 ± 6.0	11.67 ± 6.1	7.33 ± 5.3	0.110
Cryoprecipitate (Units)	4.44 ± 5.6	6.00 ± 7.0	2.89 ± 3.48	0.436
Estimated Blood Loss (ml)	4450 ± 1646	5833 ± 935	3067 ± 760	*<0.001

Table 1 : Mean Intraoperative Findings and Blood Transfusion Requirements in Liver Transplant Surgery. A patient (n=1) was not transfused with any blood product. Mann Whitney U-Test, p < 0.05 is statistically significant.

Mean Intraoperative Blood Transfusion (Units) in Liver Transplant Surgery

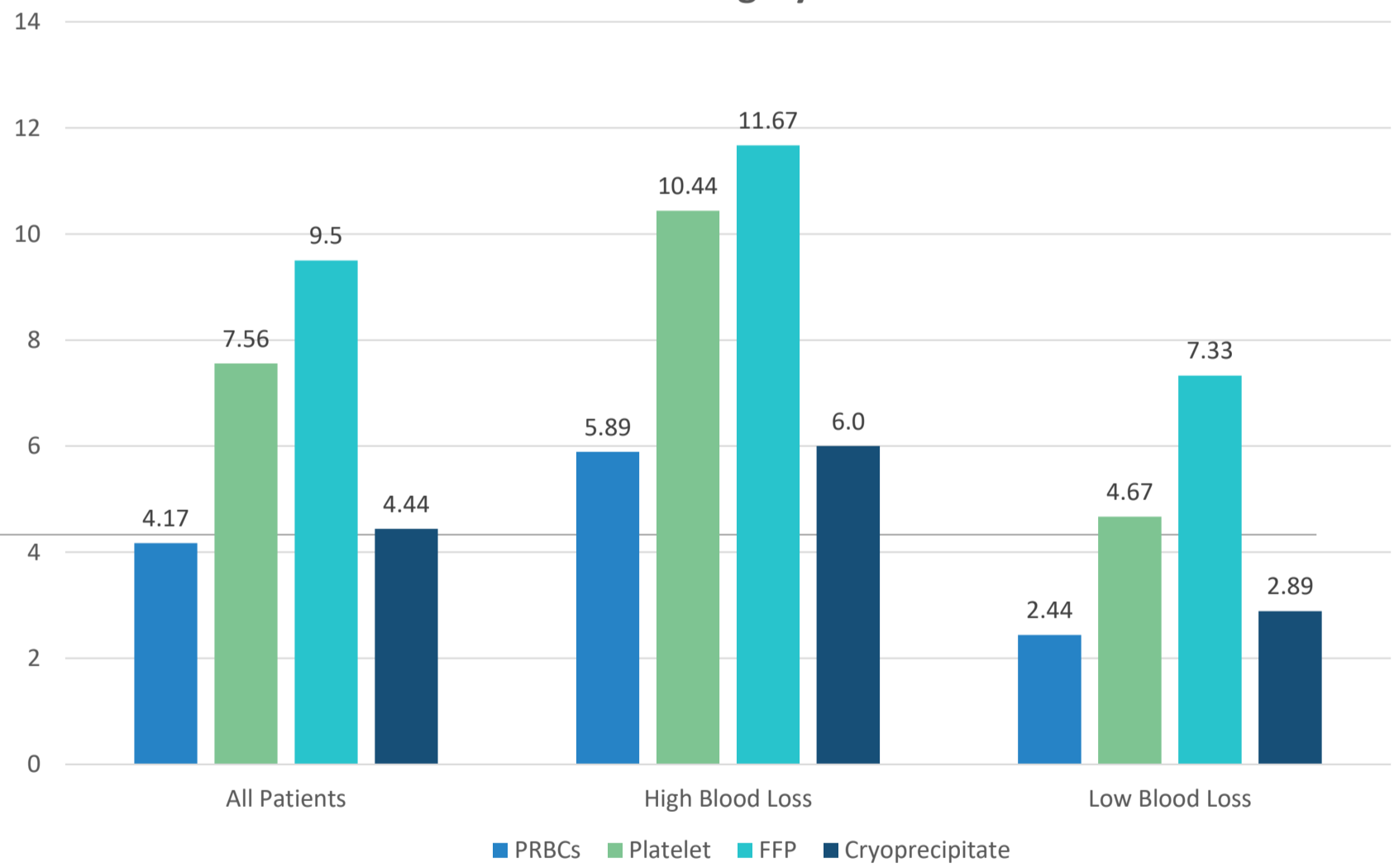


Figure 3

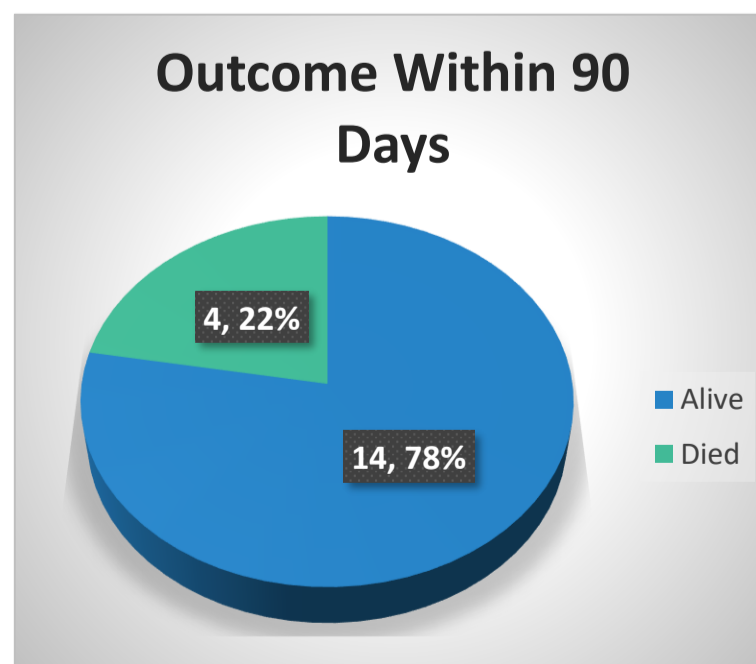


Figure 4 : Patient's outcome post-liver transplant surgery. The Mean Length of Stay (LOS) in ICU is 8.6 ± 4.9 days

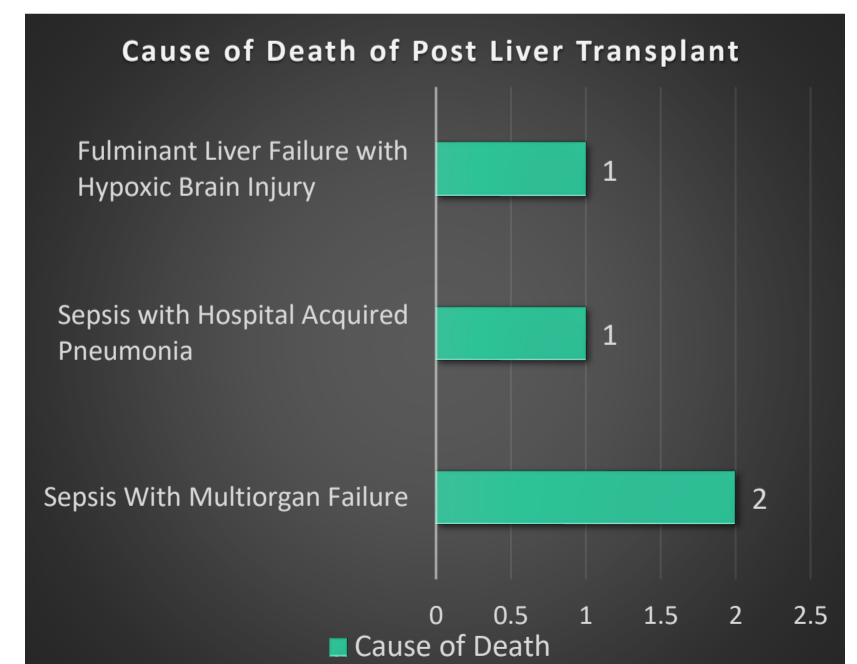


Figure 5

Conclusion

- The number of PRBC and Platelet units transfusion were higher and were statistically significant in HBL group.
- FFP and Cryoprecipitate transfusions were not significantly associated with the blood loss group in Liver Transplant surgery.
- Post-Liver Transplant recipient's survival rate is comparable to other centers abroad.