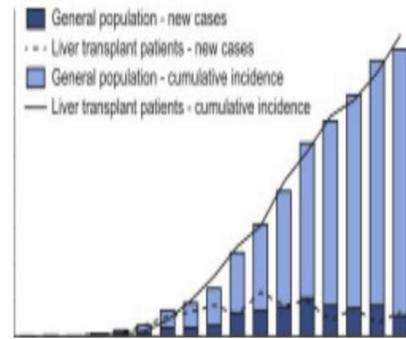




Introduction

- COVID-19 disease declared a pandemic by the World Health Organization (WHO) in March 2020.
- There is limited data regarding the mortality rate in Solid Organ Transplant (SOT) recipients or the incidence of transplanted graft failure or rejection that could be attributed to COVID-19 infection or its complications and management.
- Our study aims to investigate the management of COVID-19 infection, outcome, transplant failure and rejection rates in SOT recipients.



Methods

- We conducted a retrospective cohort study of all SOT recipients who were admitted to our transplant center from March 2020 to April 2021 with COVID 19 infection.
- Data was collected from the electronic medical records after obtaining Institutional Review Board approval.

Results

After the diagnosis of COVID-19 infection, 31% recipients had decrease in the dose of Immunosuppressive medications (change group) and 69% had no changes in the dose (no change group).

Results

Out of the 73 Kidney Transplant recipients 33% were in the change group compared to 14% of liver, 25% of heart and 27% of lung transplant recipients.

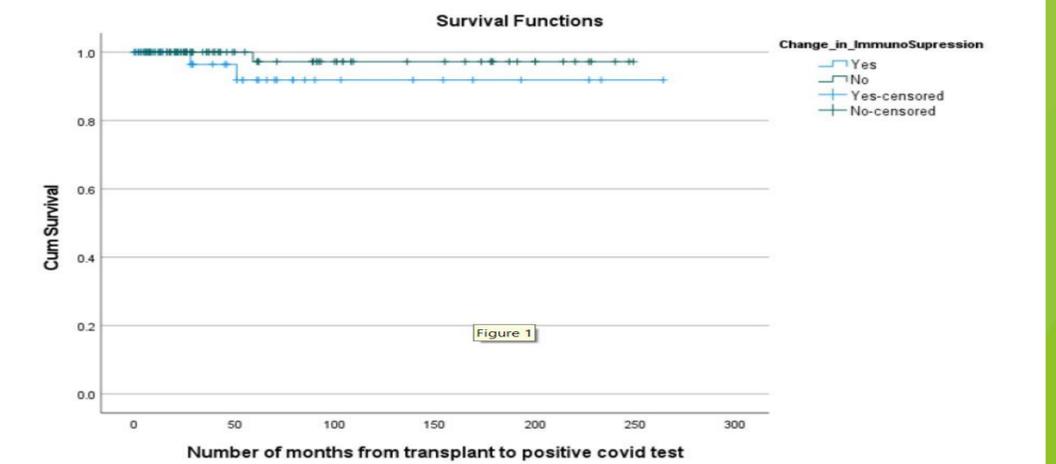
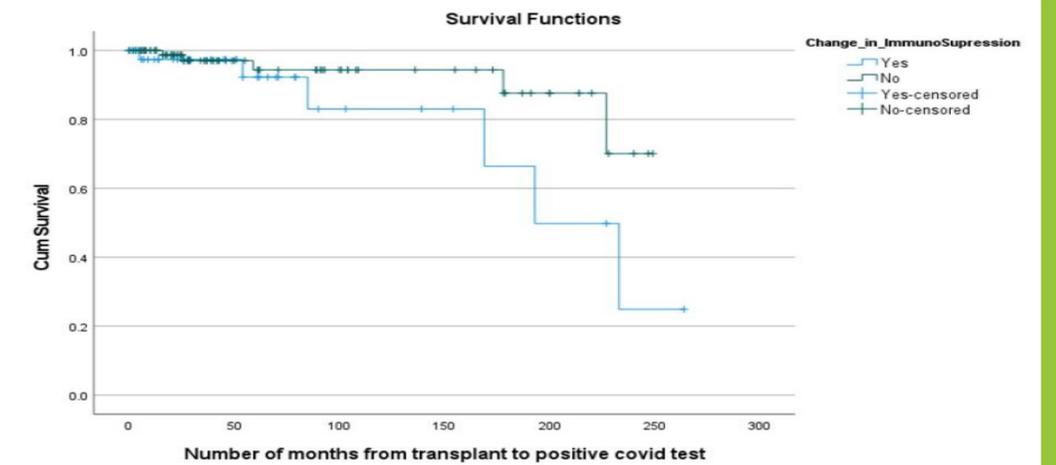
Type of Transplants in the two groups		
Type of Transplant – number (%)	Change Group	No Change Group
Kidney	24 (57.1%)	49 (52.7%)
Liver	2 (4.8%)	12 (12.9%)
Heart	6 (14.3%)	18 (19.4%)
Lung	3 (7.1%)	8 (8.6%)
Kidney and Liver	3 (7.2%)	1 (1.1%)
Kidney and Pancreas	4 (9.5%)	5 (5.4%)

Characteristics of the Population in the two groups			
Characteristics – number (%)	Change Group	No Change Group	P-Value
Male sex	29 (69%)	59 (63.4%)	P > 0.5
Female sex	13 (31%)	34 (36.6%)	
Symptoms in the two groups			
Fever	19 (45.2%)	37 (39.8%)	P > 0.5
Cough	27 (64.3%)	36 (38.7%)	P < 0.01
Shortness of Breath	22 (52.4%)	29 (31.2%)	P < 0.05
GI Symptoms	22 (52.4%)	31 (33.3%)	P < 0.05
Changes present in Chest X-Ray or Chest CT scan	28 (66.7%)	29 (31.2%)	P < 0.001
Supplemental Oxygen needed during hospitalization	24 (57.1%)	14 (15.1%)	P < 0.0001

Comparison of the Outcomes in the two groups			
Outcome	Change Group	No Change Group	P - Value
ICU Admission	28.6%	7.5%	P < 0.005
Mechanical Ventilation	14.3%	6.5%	P < 0.5
Remdesivir Use	40.5%	11.8%	P < 0.0001
Corticosteroids Use	59.5%	17.2%	P < 0.0001
Other Medications *	73.8%	22.6%	P < 0.0001
Survival Rate	85.7%	94.6%	P < 0.1
Death Rate	14.3%	5.4%	
Transplant Graft Rejection	4.8%	1.1%	P < 0.5

* Convalescent Plasma, Bamlanivimab, Hydroxychloroquine and Tocilizumab

Results



Conclusions

- Our study showed a significantly higher ICU admission rate and mortality in SOT recipients who had their immune suppression reduced at the time of COVID-19 diagnosis.
- The same group also had a higher risk of rejection of transplanted graft.
- More studies with larger sample size needs to be done to further understand the management of immunosuppressive drugs in the SOT recipients with COVID-19 infection.