

AKI & CRRT Conference

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Abstract

Lung transplant is an increasing phenomena in the world, by this time, our center is the only one across all the country that do this interventions. One of the complications that can happen is the Acute Kidney Injury, which can develop pre or post lung transplant. We perform a retrospective and a descriptive study of the lung transplants performed in our center. 29 lung transplant were performed, were 11 patients developed AKI and needed CRRT. The renal recovery in patients with lung transplant can be achieved by a prompt intervention of the nephrology team

Introduction

The history about lung transplant is relatively young, with a very rapidly successful evolution and an increase in the number of patients in recent years. Few centers around the globe have a lung transplant program, in Mexico, there is only one active center. The possible complications around this solid organ transplant are many, most common associated to the surgical moment, even thought, along the pre transplant time, the surgical complication and the post-surgical recovery is always the possibility to develop AKI. Between 20 to 90% of patients with lung transplantation could develop AKI and around 15% will need RRT. The AKI will complicate the in-hospital evolution, time in ICU, risk of infections and increase mortality. One of the most worrying situation is the possibility of no renal recovery and the need of stay in RRT as chronic patient.

Methods and Materials

Is a Retrospective and Descriptive study. Were included all patients 18y who performed a lung transplant in Christus Muguerza Hospital from January 2017 to August 2022. Data was collected in excel and the descriptive data analysis was performed with SPSS V21. The confidentiality agreement for handling patient data is respected in accordance with faith agreement as the Helsinki declaration. The ethical committee of the hospital agree with the data use.

KRT Type	Initial Modality	Filter	Days in KRT	Initial Dose	KRT Indication	Initial Creatinine	Final Outcome
CKRT	HDFVVC	Oxiris	41	25 ml/kg/hr	Anuria, Fluid overload	1.5	Live
CKRT	HDFVVC SCUF	Oxiris	13	28 ml/kg/hr	Uremia, Fluid overload	3	Live
CKRT	HDFVVC	Oxiris	8	30 ml/kg/hr	Oliguria Fluid overload Hiperkalemia	3.74	Live
CKRT	HDFVVC	ST-150	2	30 ml/kg/hr	AKI KDIGO 3 MAT Sepsis	1.6	Dead
CKRT	HDFVVC	Oxiris	18	30 ml/kg/hr	AKI KDIGO 3 Sepsis	1.8	Dead
CKRT	HDFVVC	Oxiris	56	26 ml/kg/hr	Fluid Overload Metabolic Acidosis	2.72	Live
CKRT	HDFVVC	Oxiris	85	25 ml/kg/hr	Fluid Overload Oliguria	3.6	Live
CKRT	HDFVVC	Oxiris	5	30 ml/kg/hr	Fluid Overload Metabolic	2.6	Live
CKRT	HDFVVC	ST-150	5	31 ml/kg/hr	Anuria Uremia Hiperkalemia	3.3	Live
CKRT	HDFVVC	ST-150	4	30 ml/kg/hr	Oliguria Azoemia	3.36	Live
CKRT	HDFVVC	Oxiris	1	25 ml/kg/hr	Fluid Overload	3.28	Dead

Table 1. Data of our patients

Results

29 patients had lung transplant, 68% were men, the average age is 54 years (Min 27- Max 67), average BMI 23kg/m2. Idiopathic pulmonary fibrosis was the most common diagnosis (58.6%) follow by COVID-19 (14%), 21 patients receive bi-pulmonary transplant. The survival rate is 62% at discharge. 11 patients developed AKI with the need of RRT (38%), all of them in CRRT as initial therapy only 2 need to migrate to HD transitory but both, were discharge without RRT. The most common cause to initiate RRT was anuria followed by fluid overload. 4 patients with RRT died few days after transplant, the other 7, where discharged with a complete renal recovery after KRT and with creatinine less than 1 mg/dl. 34% patients were in ECMO and 60% from those needed CKRT. The KRT indications and prescriptions are in table 1. In the multivariate analysis of 30 days mortality of the selected variants according to the transplant team there was not a significant value of non of them, but there is a possible tendency that the CRRT is a protector factor against mortality.

Discussion

The involvement of kidney function is essential for the decision to go forward to lung transplant, some patients develop AKI before surgical time, these should be evaluated from the crosstalk organ view, remembering that a high possibility of renal recovery exist if lung recovery is successful. Our cohort demonstrate, not only this fact, but also that if the nephrology intervention is in right time, adequate communication and teamwork is carried out, the patient can achieve renal recovery. The tendency of a mortality protector factor could be related with less fluid overload and a better metabolic equilibrium in the first hours of AKI.



Figure 1. Lung transplantation



Figure 2. Patient under ECMO and CRRT therapy

Conclusions

The development of AKI is a condition that could occur in patients with lung transplant, representing a challenge for the intensive care team and especially for the nephrologist, who need to be aware and prepared for situations like this. In our study we conclude that CRRT might be a protect factor again mortality and, the early involvement of the nephrologist is essential to better outcomes for the patient.

