

INTRODUCTION

Chronic kidney disease (CKD) is very common in patients with chronic heart failure.

• Left ventricular assist device (LVAD) implantation is used to bridge these patients with end-stage heart failure (ESHF) to cardiac transplantation or as destination therapy.

Continuous renal replacement therapy (CRRT) is challenging in LVAD patients with acute kidney injury associated with fluid overload. A close collaboration between nephrologists and cardiac surgeons is essential to optimize fluid status.

OBJECTIVE

The goal of the study was to evaluate patient care related to volume management in patients with AKI on CRRT and LVAD using daily Continuous CVP and MAP monitoring.

PROTOCOL

was selected as the main criteria for UF • CVP because the right heart is at risk of failing due to fluid overload in LVAD patients.

• UF was done if CVP was >15cmH2O. while maintaining MAP>60mmHg by using vasopressors or titrating LVAD parameters.

• No UF was done if CVP was <12cmH2O unless MAPs was >60mm Hg and there was a clinical evidence of fluid overload.

CVP >15cm H2O, UF 100-150 ml/hr

CVP 12-15 cm H2O, UF 50-100ml/hr

CVP <12 cmH2O, MAP >60m mmHg and

hypervolemia, UF 50ml/hr

Can We Achieve Optimal Ultrafiltration In End Stage Heart Failure Patients With Left Ventricular Assist Device Who Develop Acute Kidney Injury And Fluid Overload Requiring Continuous Renal Replacement Therapy? Sagar S Patel, Adebayo Adewale, William Weber, Rita Jermyn, Allison McLarty, Nand K Wadhwa. Stony Brook University, Stony Brook, NY, USA.

		METHODS
	Machine	Prisma (Gambro)
L	Filter	M 100 set with AN
	Access	Non tunneled cat
-	Dialysate	Prismasate BGK 4
;	Replacement	PrismaSOL BGK 2
	Anticoagulant	Citrate Dextrose F
5	Prescription	Effluent rate of 25

METHODS

We collected data retrospectively on 17 ESHF patients (Mean age <u>+SD</u>, 60<u>+9</u>) range 45-76 years, 13 M and 4 F) who underwent HeartMate II LVAD implantation from April 2010 to June 2012.

• 11 patients had CKD (eGFR < 60 ml/min/1.73 m²) prior to LVAD placement. 8 patients developed AKI, of these 3 patients (mean age 70, range 68-72 years, **3M) required CRRT over a total number of 68 days.** • A complete data set was available on 55 days.

RESULTS												
No of Days 55	Prescribed UF ml/hr	Delivered UF ml/hr	CVP Cm H2O	MAP Mm Hg	BUN mg/dl	Cr mg/dl	Na mmol/l	K mmol/l	HCO3 mmol/l			
Mean <u>+</u> SD	70.4 <u>+</u> 54.0	52.9 <u>+</u> 81.7	13.8 <u>+</u> 2.4	61.9 <u>+</u> 6.1	61.9 <u>+</u> 6.1	1.44 <u>+</u> 0.68	137.1 <u>+</u> 2.8	4.1 <u>+</u> 0.5	27.4 <u>+</u> 2.6			

The mean delivered UF rate (52.9 <u>+</u> 81.7 ml/hr) was significantly (p<.01)</p> lower than the mean prescribed UF (70.4 ± 54.0 ml/hr). • The delivered UF correlated significantly (p<.0001) with the prescribed UF. The prescribed UF correlated significantly (p<.05) with MAP.</p> • However no significant relation was observed between delivered UF and MAP. Similarly, no correlation was found between CVP and prescribed or delivered UF.

• UF rate of >50 ml/hr in patients with CVP >15 cm H20 was not prescribed in 3 of 10 days on CRRT while was not delivered on 2 of 12 days.

69 hemofilter

theters

/2.5 at 500 mL/hr

or 4/0 at 1500 mL/hr

Formula A protocol

-30 mL/kg/hr





• A protocol with a single target parameter as a priority of either continuous CVP or MAP when available for UF can be more effective in optimizing volume status of AKI patients with LVAD requiring CRRT.

• A prospective collection of data will be needed to determine correctable factors associated with prescribed and delivered UF.

RESULTS

SUMMARY AND CONCLUSIONS