Successful Treatment of Hepatorenal Syndrome With Continuous Flow Peritoneal Dialysis (CFPD) Using a Dual Lumen Ronco Catheter

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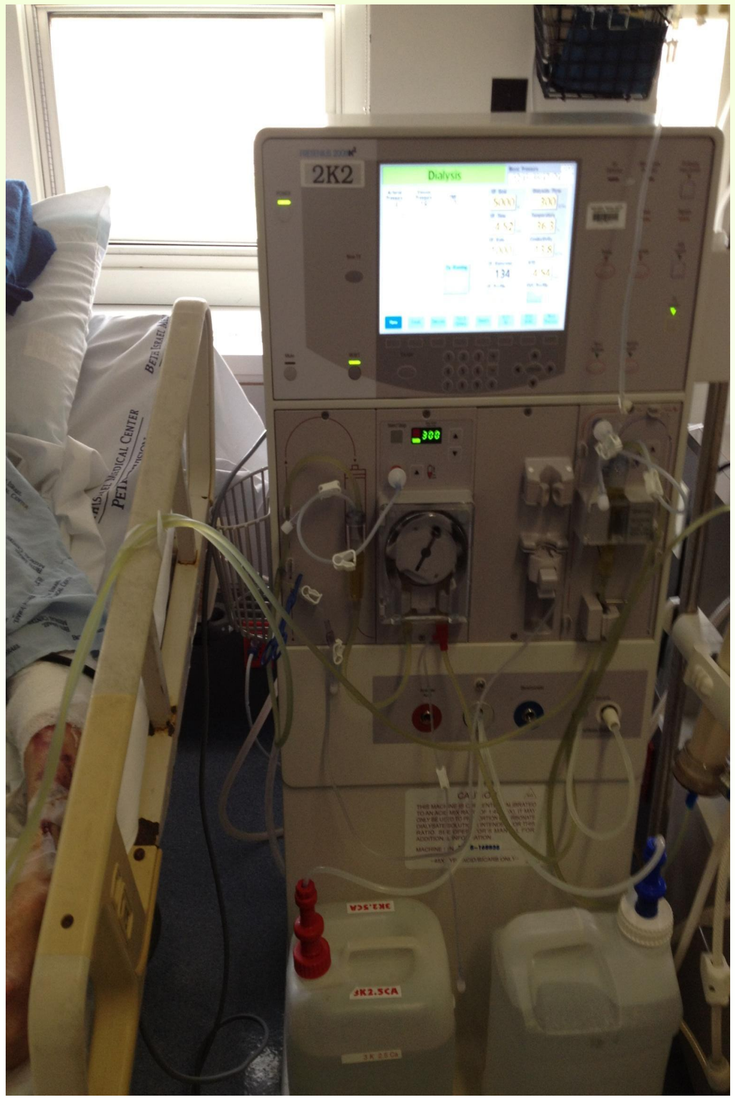
Background

Hepatorenal syndrome (HRS) is a well known cause of acute kidney injury (AKI) associated with high morbidity and mortality. Renal replacement therapy (RRT) for HRS is often not considered in patients who are not candidates for liver transplantation. Conventional modes of RRT may be hemodynamically intolerable in patients with HRS. We report the successful treatment of a patient with cirrhosis and HRS with CFPD.



Methods

A 62 year old alcoholic cirrhotic man with tophaceous gout, presented to our MICU with hypotension, tense ascites, anasarca, cachexia, bright red blood per rectum, oliguria, and rising serum creatinine. He was treated with blood transfusion, IV albumin, midodrine, octreotide, and norepinephrine. Serum creatinine continued to rise, tense ascites reaccumulated post paracentesis, and he was dyspneic at rest. His condition deteriorated with obtundation, worsening anasarca and acidemia. He was not a transplant candidate, hemodynamically unstable, and palliative care was discussed. CFPD was suggested and family agreed. A Ronco dual lumen catheter was available and we placed this at bedside. Initially, standard acute PD was performed, as we could not verify intraperitoneal positioning of diffuser portion of catheter. He improved, but was hypotensive due to negative balance 4-7 L/day. Catheter position verified radiographically and CFPD initiated after 2 weeks standard PD. We used Fresenius 2008H to dialyze ascites at Qp of 300 ml/min. External dialysate flow (Qd) set at 500 ml/min. Ascites removed by ultrafiltration of 2-4 liters/session. Each session lasted 4-6 hours, and we ran from 4-6 sessions per week. Pre and post-Rx blood chemistries were drawn and used to calculate clearances using the Daugirdas equation.

Results

Date	Wt pre (kg)	Wt post	Vol (L)	Rx time (min)	Qp	UF vol(ml)	Pre BUN	Post BUN	KuT/V	Ku
25-Apr	81.4	77	48.8	240	300	3961	27	23	0.25	50.9
26-Apr	79.4	77.6	47.6	240	300	1800	24	21	0.21	41.7
28-Apr	78	77.3	46.8	245	300	1000	27	23	0.21	40.1
30-Apr	78.8	77.3	47.3	240	300	1500	30	24	0.32	63
7-May	75	71.8	45	260	200	3200	48	41	0.24	41.5
17-May	69.9	66.7	41.9	260	300	3065	34	29	0.25	40.3
Mean						2421			0.25	46.3

Patient improved clinically over several weeks with clearing of anasarca (20 kg net weight reduction), control of ascites, acidosis, and withdrawal of pressors. Kt/V urea averaged 0.25 per Rx (see Table) with mean urea clearance (Ku) of 46 ml/min. He remained cachectic, and sessions increased to 6 hours. Ku declined after 6 months to 20 ml/min. HD added to improve clearance, but he developed refractory GI bleeding and expired 8 months after beginning RRT.

Conclusions

CFPD via the Ronco catheter was extremely successful as RRT in a severely ill cirrhotic, ascitic patient with HRS.