

CONTINUOUS RENAL REPLACEMENT THERAPY (CRRT)
ENHANCES REDUCTION OF AMMONIA LEVEL IN A PATIENT
WITH HYPERAMMONEMIC ENCEPHALOPATHY

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Geisinger Medical Center. Danville, PA, USA. A 71 year old male with chronic liver disease secondary to hemochromatosis was admitted with a one day history of mental state changes in the context of gastrointestinal bleeding from esophageal varices. Initial studies included a negative head CT scan and unremarkable serologies. The ammonia level was markedly elevated at 188 $\mu\text{mol/L}$ and the whole blood lactate was 3 mmol/L . Due to respiratory distress, the patient was intubated. He subsequently developed generalized seizures. The hyperammonemia was treated with high doses of lactulose with minimal response. CRRT was then initiated in an attempt to ameliorate the ammonia level. A random serum and dialysate ammonia level obtained 74 minutes into dialysis was 242 and 146 $\mu\text{mol/L}$ respectively. CRRT had to be temporarily interrupted and when re-established, three corresponding serum and dialysate ammonia levels were obtained one hour apart. The data is shown in the following table.

| Time on CRRT (min) | Serum ammonia ($\mu\text{mol/L}$) | Dialysate ammonia ($\mu\text{mol/L}$) | D/S ammonia % |
|--------------------|-------------------------------------|---|---------------|
| 0 | 127 | 0 | |
| 130 | 69 | 30 | 43% |
| 190 | 58 | 36 | 62% |
| 245 | 57 | 36 | 63% |

Our data is unique in that we tracked corresponding serum and dialysate ammonia levels during dialysis. We demonstrated significant clearance of ammonia with the dialysate ammonia level stabilizing at 43-63% of the serum level two hours into dialysis treatment. We propose that CRRT is an effective adjunctive modality in the management of hyperammonemia and hepatic encephalopathy.