

IMPORTANCE OF USING CITRATE ANTICOAGULATION FOR CVVHDF IN A PATIENT WITH HEMOLYTIC UREMIC SYNDROME –CLINICAL CASE

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Introduction

Renal replacement therapy in children is a rare event, but with important implications for morbidity and mortality in this age group. Although the incidence of children with kidney failure is relatively low and patients requiring renal replacement therapy are usually few in these, has been recognized the significant positive impact on early recognition of children who require and implement of adequate therapy. According to the annual report of the UK Renal Registry, during 2009 there were 751 children with established renal injury receiving renal replacement therapy

Objectives

We report a case of a patient who required renal replacement therapy secondary to a hemolytic uremic syndrome –

Results

A 5 year-old patient, was admitted to the hospital because of three day of diarrhea and respiratory distress, accompanied by intractable vomiting. A coproscopic test indicated amoebic diarrhea, later he was sent home with metronidazole and oral electrolyte solution. Without improvement, two days later returns to pediatric ER, in that moment having more diarrhea episodes and looking very dehydrated. Laboratory exams were taken, hemogram reports 7.5 hemoglobin level, creatinine 2 mg/dl and urea nitrogen 56, LDH of 3147, platelets 44000. Diagnosis was performed, diarrheic disease with high grade of dehydration, acute renal failure and suspected HUS.

Patient was admitted to PICU, where peritoneal dialysis was started for the next 5 days, without clinical improvement therefore decides initiated continuous renal replacement therapy in the form of continuous venovenous hemodiafiltration, by this moment the patient was hemodynamic compromised looking lethargic, pale, drowsiness and septic. Hemoglobin 8, hematocrit 22, platelets 37000, creatinine 6.5 BUN 6.5; Anuric, positive water balance with 988ml, arterial blood gases reported pH 7.3, PCO2: 35, PO2 40, HCO3: 17.2, EB: -7.8 (Hypoxaemic metabolic acidosis).

CRRT programmed:

Mode: continuous venovenous hemodiafiltration

Pump flow: 80 to 160 ml / min (5-10 ml / kg / min)

Ultrafiltration: 228 cc / h

Using Citrate anticoagulation, it was place 1.5 times the pump flow bone.

PUMP FLOW SPEED	CITRATE
80 cc / min	120 cc / min
100 cc / min	150 cc / min
160 cc / min	240 cc / min

10% Calcium gluconate infusion: 15 ml / h

Dialysate Dose: 60 cc / kg / h distributed as follows:

predilution: 480 cc / h postdilution: 480 cc

Control testing laboratory every 2 - 4 hours.

During CRRT, using citrate anticoagulation the length and half-life of the filter was 7 days, just two filters were use with no complications. Patient evolution was satisfactory. The patient recovered normal renal function, and output was given from pediatric intensive care unit 20 days later.



Conclusions

Acute renal injury is a condition that quickly complicated pediatric patient, hemolytic uremic syndrome remains the leading cause of the complication reported in multiple series. Previous reports have shown the advantage of starting early RRT patients with a significant favorable impact in patients with hemolytic uremic syndrome-

Hemodiafiltration and citrate anticoagulation in hemolytic uremic syndrome patients is a good strategy, that removes efficiently the pro-inflammatory substances from the blood torrent due to their major inflammatory reaction, by its mechanism of convection, more sensible than standar dialysis, thereby limiting systemic damage

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