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Role of Single Pass Albumin Dialysis in the Management of Acute Liver Injury in Severe Dengue: A Case Report

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Objectives : To present a case of a 29-year-old female who had severe dengue fever who developed gastrointestinal bleeding, elevated liver enzymes, persistent hyperammonemia and anuric acute kidney injury KDIGO Stage 3 who underwent single pass albumin dialysis

Methods : The patient was placed on single-pass albumin dialysis (SPAD) using continuous veno-venous hemodiafiltration (CVVHDF). This therapy aimed to remove both water-soluble substances (urea, ammonium) and hydrophobic molecules (bilirubin, bile acids), which are associated with liver dysfunction and encephalopathy.

Results : After 2 cycles of SPAD, the patient's liver enzymes and ammonia levels improved, however still with sustained acute kidney injury hence CVVHDF and eventually sustained low efficiency dialysis (SLED) was continued. Over time the patient's acute kidney injury resolved, renal replacement therapy was discontinued and she was eventually discharged in stable condition.

Conclusions : Although guidelines for dengue management exist, specific protocols for organ damage remain limited. Studies suggest that albumin dialysis effectively removes albumin-bound molecules like bilirubin, improving hepatic encephalopathy. SPAD using continuous renal replacement therapy (CRRT) has proven to be a viable alternative for managing severe hyperbilirubinemia and hepatorenal failure, demonstrating its effectiveness and cost-efficiency in critical dengue cases.