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ACUTE KIDNEY INJURY OF UNDETERMINED ETIOLOGY AND ITS MANAGEMENT WITH RENAL REPLACEMENT THERAPY: A CASE REPORT

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Acute kidney injury (AKI KDIGO Stage 3) is a critical nephrological condition. While the underlying etiology is being investigated, the timely initiation of renal replacement therapy (RRT) is paramount in the presence of oliguria and fluid overload. A 44-year-old male presented to the Emergency Department with a 5-day history of fever (38.6°C), vomiting, and diarrhea. Initial laboratory findings revealed a marked inflammatory response (CRP: 357.5 mg/L, WBC: 14.78 × 10^9/L), elevated baseline creatinine (165.3 μmol/L), proteinuria (3.0 g/L), and hematuria. Within 48 hours, renal function deteriorated rapidly: the patient developed oliguria, serum creatinine surged to 623.6 μmol/L, BUN reached 59.32 mg/dL, and LDH rose to 534 U/L. Renal ultrasonography ruled out obstructive uropathy. Urinalysis demonstrated abundant urate crystals and an elevated protein-to-creatinine ratio (PCR: 0.589 mg/mg). Given the combination of severe AKI, elevated inflammatory markers, and high LDH, samples were sent to the Lugar National Laboratory to investigate potential etiologies, including rhabdomyolysis and rare or specific infectious agents. The primary underlying etiology remains under active clinical and laboratory investigation. Due to progressive azotemia and fluid overload (EchoCG showing IVC 29 mm, EF 40%), a 12 Fr hemodialysis catheter was inserted into the right internal jugular vein, and emergency hemodialysis was initiated. Following the initiation of RRT and comprehensive supportive care, significant clinical and laboratory improvement was achieved: azotemia decreased, fluid overload was corrected, and CRP levels markedly declined to 81.5 mg/L (WBC: 14.03 × 10^9/L). This case highlights that even while the primary underlying etiology is still being determined, the prompt initiation of renal replacement therapy (RRT) in severe AKI is crucial for restoring homeostasis and stabilizing the patient.

Keywords: Acute Kidney Injury, Hemodialysis, Renal Replacement Therapy, Oliguria, Case Report.