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Background

Rhabdomyolysis is a condition characterized by the breakdown of muscle cells, releasing myoglobin, which can lead to renal damage. Causes include trauma, intense exercise, drugs, and conditions like infections or diabetes.

Treatment involves fluid rehydration and, in severe cases, dialysis and hemadsorption to remove toxins.

Case Report

A 21-year-old male with obesity and autism, on Risperdal (1 mg), presented to the emergency department with confusion, fatigue, tachypnea, tachycardia, and hypotension, accompanied by fever. Blood tests indicated hyperglycemia (66 mmol/L), metabolic acidosis, lactacidemia (3.6 mmol/L), and inflammation (PCT 0.96 mcg/L, WBC count 18,000/ml), alongside elevated creatinine (303 µmol/L).

Diagnosed with diabetic ketoacidosis, he was admitted to the ICU and treated with empirical ceftriaxone. As his condition deteriorated, he required vasopressors, a switch to meropenem and linezolid, orotracheal intubation, and continuous veno-venous hemodiafiltration (CVVHDF) for suspected septic nephropathy.

By day 5, his creatine phosphokinase (CPK) levels had surged to 297,880 U/L, no sources of sepsis were found, prompting a diagnosis of rhabdomyolysis triggered by diabetic ketoacidosis and Risperdal.

CVVHD with a high-cut off filter was initiated on day 7 due to persistent CPK elevation.

On day 9 Cytosorb hemadsorption was added because of high CPK and myoglobin (125212 mcg/l) levels. CPK and myoglobin levels began to decrease significantly from day 10. Treatment with CytoSorb continued for 5 days, and it was stopped when myoglobin levels were low. The measurements were made pre and post cartridge to better understand the sorbent performance (figure 1).

The patient required renal replacement therapy until day 26, was weaned from mechanical ventilation with a tracheostomy, and discharged with a GFR of 81 ml/min.

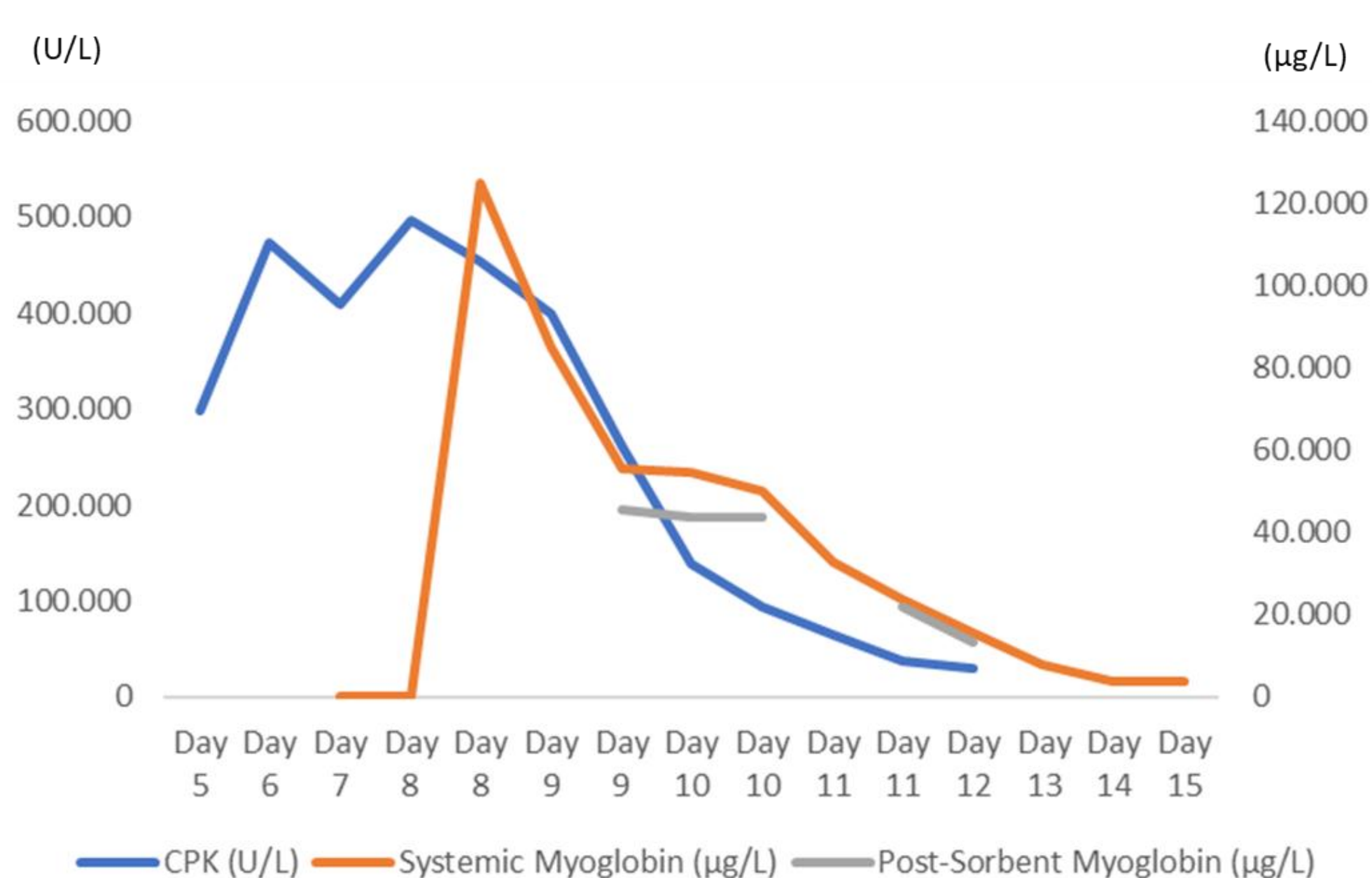


Figure 1: CPK and Myoglobin trend during days

Conclusions

CytoSorb was effective in reducing high levels of myoglobin and CPK associated with severe diabetic and pharmacological rhabdomyolysis, where standard CRRT alone was insufficient.