



# Blood purification with CytoSorb for the elimination of myoglobin in a case of severe rhabdomyolysis due to polytrauma

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## Background

Rhabdomyolysis describes the disintegration of skeletal muscles, leading to the release of muscle components into the blood. The most common cause is traumatic damage of the muscles, for example in patients after multiple traumas. In addition to electrolyte disorders caused by cell decay, there is also an accumulation of creatine kinase (CK) and myoglobin in the blood. An accumulation of large amounts of myoglobin might have nephrotoxic effects leading to AKI.

## Case Presentation

Here we describe the case of a 29-year-old boy with polytrauma-related rhabdomyolysis admitted to the intensive care unit after an urgent treatment of spinal cord decompression and stabilization of the spine. The first day creatinine was 1.11 mg/dl and CK 6241 U/L. On the following day the creatinine increased to 2.77, the CK to 7513 U/L and myoglobin was 4104 mcg/L. On day 3 there is the appearance of oliguria, despite diuretic therapy, the Creatinine and CK values reaching a peak of 3,22 mg/dl and 19902U/l respectively. The myoglobin remains above the laboratory measurement cut-off. The Mc Mahone score for rhabdomyolysis is calculated and found to be 9.5, so we decided to start continuous renal replacement therapy (CVVHDF) in combination with 3 cycles of CytoSorb to modulate CK and myoglobin levels and prevent AKI.

## Results

After 72 hours of CVVHDF + CytoSorb, there was a restoration of physiological values in the blood as shown in the figure 1. Due to respiratory weaning difficulties, also linked to his psychical state, the patient was tracheostomized in the following days and, subjected to ad hoc treatment with antidepressant drugs, he was able to be weaned from the respiratory support and on day 32 transferred to the rehabilitation center.

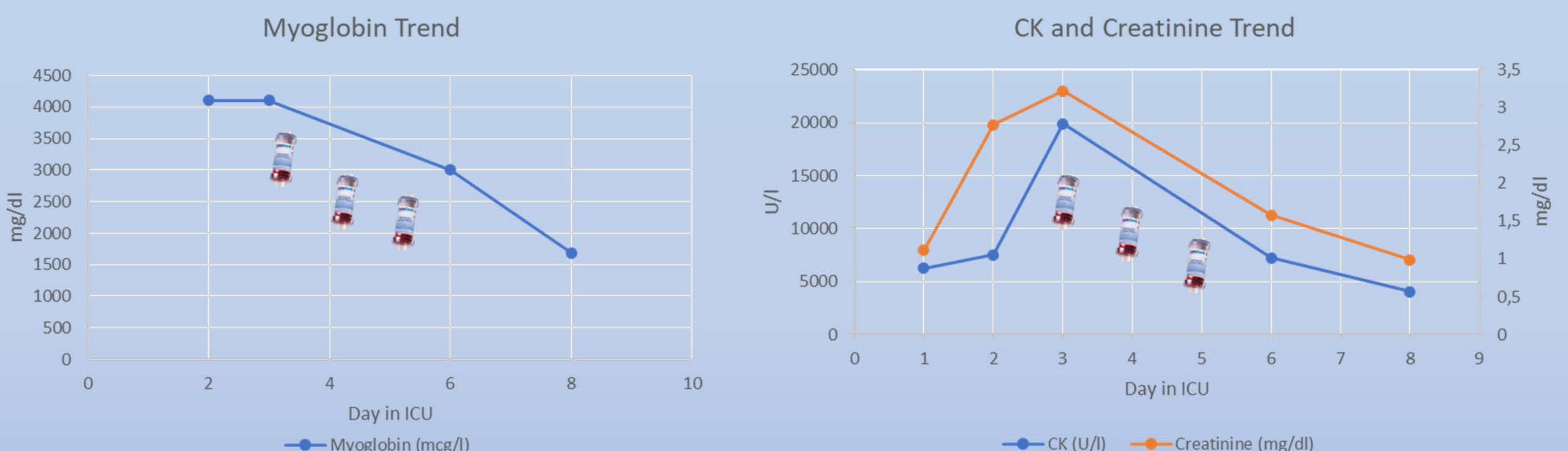


Figure 1: Myoglobin, CK and Creatinine Trend

## Conclusion

Blood purification with Cytosorb® integrated into a CRRT system may be a useful tool for the elimination of myoglobin in patients with rhabdomyolysis. In addition myoglobin elimination could avert permanent kidney damage by avoiding its deposition in the kidney.