Hemoperfusion with Cytosorb® in severe trauma: a case report.

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Background

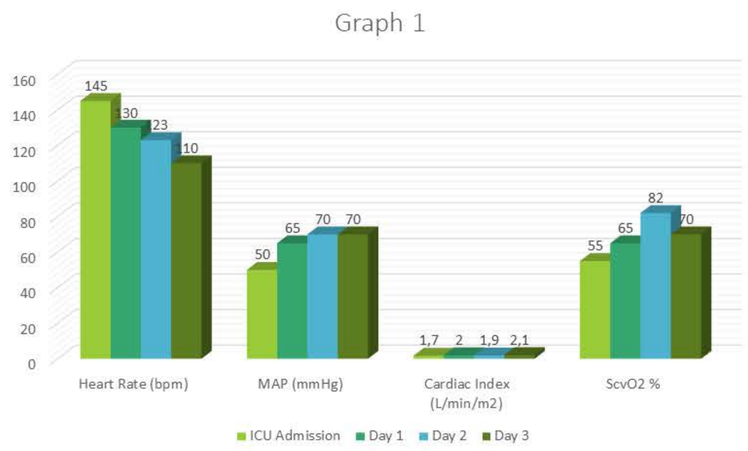
Rhabdomyolysis is the breakdown of striated muscle cells, resulting in the release of potentially toxic compounds in the circulation. Following the lysis of myocytes a large number of salts, enzymes (aldolase, CK, LDH), and Mb, are released into the bloodstream. The incidence of Rhabdomyolysis is 1/10000 in the USA, with 8-15% of all cases of AKI, and a mortality of 5%. We hereby present a case with the use of CytoSorb® during CRRT after crush syndrome.

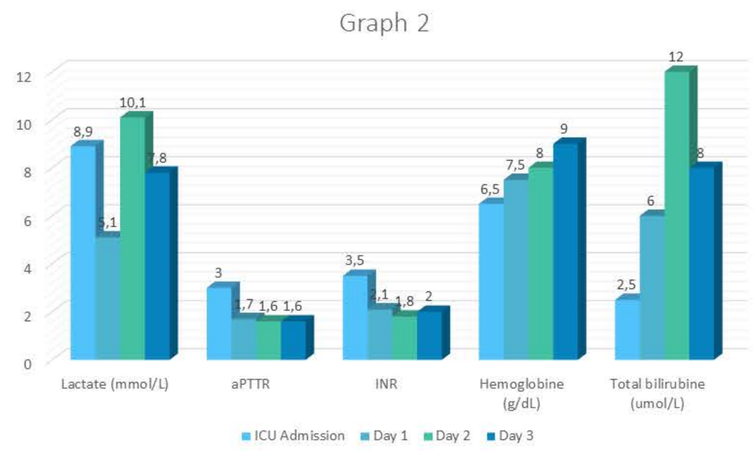
Methods

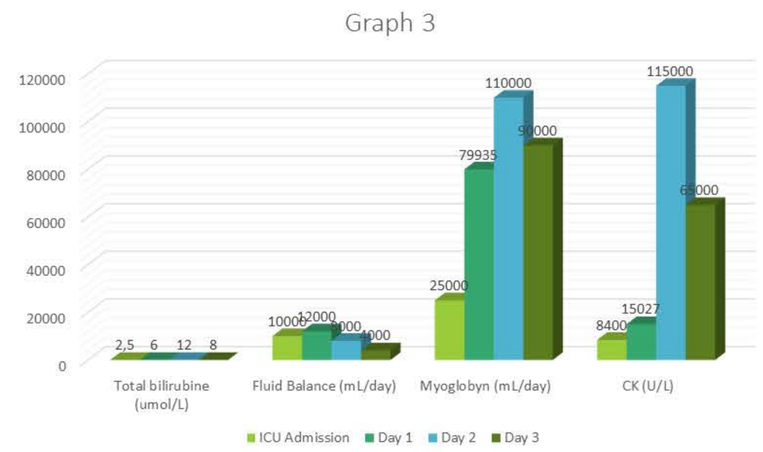
A young male (22 years old) was admitted to our hospital after a car accident, with prehospital parameters (GCS 13, HR 125/min, BP 90 /60 mmHg, RR 24/min, SpO2 92%). FAST showed right haemothorax, PNX, Morrison+++, Douglas+++, spleen-kidney space+++ with a HB 8g/dl and 4.2 mmol/L lactate values. He subsequently underwent splenectomy and liver packing in the OR. Total body angioCT was negative for brain damage and positive for polytrauma (VI, VII, VIII, IX right ribs, blushing, and contusion of both liver and kidneys). We used CytoSorb® for myoglobin and bilirubin levels reduction.

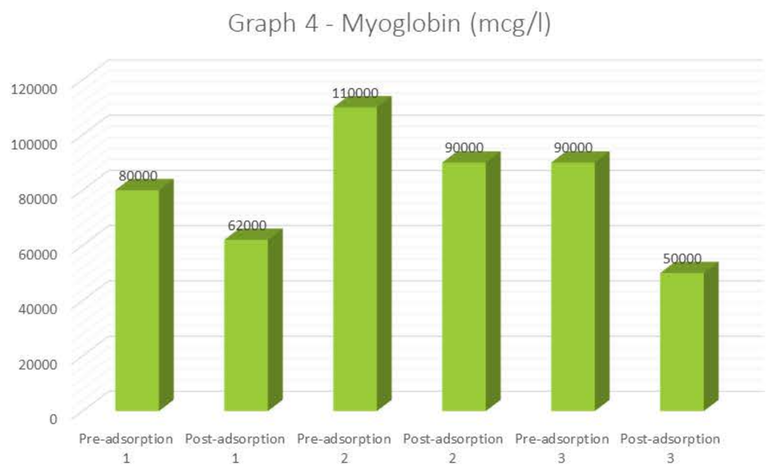
Results

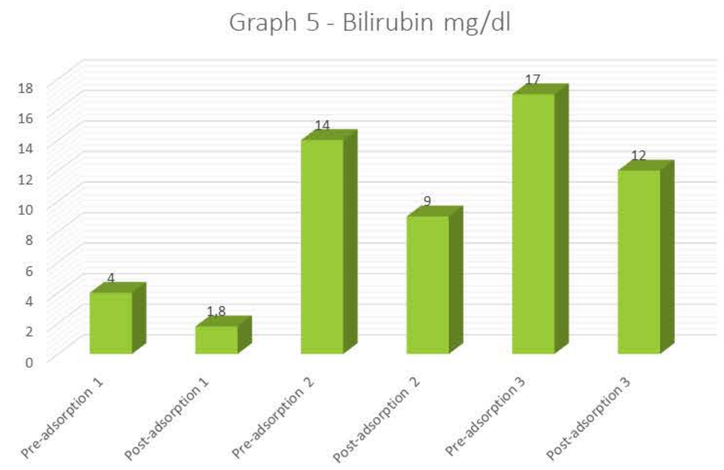
CytoSorb® showed effective removal of toxic chemical agents following polytraumatic rhabdomyolysis, without bilirubin and biliary acid backflow into the bloodstream. Graphs 1-3 shows vital and blood parameters at ICU admission, on day 1, day 2, and day 3. Graphs 4-5 focus on pre and post-adsorption values of myoglobin and bilirubin.











Conclusion

Myoglobin elimination could avert permanent kidney damage by avoiding its deposition in the kidneys. Our case report suggests the potential of CytoSorb® in removing toxic chemicals accumulation in the bloodstream after crush syndrome, restoring myoglobin and bilirubin to physiological range. It is fundamental for clinicians to understand the physiochemical mechanism regulating molecular surface adsorption, the specific target molecules, and the specific clinical case, in order to achieve the best results