



Hemoperfusion with CytoSorb in a Case of Valproic Acid Poisoning



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Introduction

The use of the CytoSorb adsorber in any extracorporeal circulation allows the removal of various types of potentially toxic and/or harmful molecules from the bloodstream. In addition to endogenous molecules produced by the body, CytoSorb is also capable of removing several drugs. For certain classes of drugs, such as antiepileptics, only in vitro data are currently available.

Methods

Clinical case of a 57-year-old female patient admitted to the Intensive Care Unit due to intentional intoxication with Valproic Acid (VPA) and bisoprolol. Upon admission to the ICU, the patient presented with a Glasgow Coma Scale (GCS) score of 8, mean arterial pressure (MAP) of 50 mmHg, Heart Rate of 38 bpm, VPA blood level of 440 µg/mL (normal range 50–100 µg/mL), severe metabolic acidosis (pH 7.1, HCO₃⁻ 9, base excess -15, lactate 6.5). Aminergic support and non-invasive ventilation (NIV) in BiPAP mode were initiated. In light of the clinical and laboratory findings, a combined treatment approach was decided: isolated hemoperfusion (HP) with CytoSorb combined with extracorporeal therapy in continuous veno-venous hemofiltration (CVVH) mode. Two CytoSorb cartridges were used sequentially, with the first cartridge replaced after the initial 12 hours of treatment, for a total of 24 hours of hemoperfusion therapy.

Results

At the end of the first 12 hours, the VPA blood level was 100 µg/mL, while after 24 hours of treatment, the patient's VPA blood level was 55 µg/mL (Figure 1). The metabolic abnormalities were fully corrected (pH 7.38, HCO₃⁻ 25, base excess 1.1, lactate 0.9), MAP was 100 mmHg, HR was 74 bpm, aminergic support was completely discontinued, and the patient was breathing spontaneously.

Conclusion

Hemoperfusion with CytoSorb proved to be an effective and safe method for the in vivo removal of Valproic Acid, enabling the rapid resolution of a case of severe polypharmacologic intoxication.

Figure 1: VPA blood levels over 24 hours

