

## Successful treatment of severe lamotrigine intoxication with CytoSorb hemoadsorption

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*A 60-year-old female was admitted to the Emergency Department after she was found unconscious by her husband.*

### Case presentation

- Neither naloxone nor glucose improved the patient's vigilance and no causative pathology was found on the CT scan
- The patient was intubated and ventilated while already in a deep coma and was transferred to the intensive care unit (ICU)
- Intoxication with the anti-epileptic lamotrigine was suspected, so a lipid infusion was administered in consultation with the Poison Control Centre
- Electroencephalography (EEG) showed no seizure potentials, while laboratory analysis confirmed significantly elevated lamotrigine plasma levels that were not being reduced by conventional therapeutic measures, and did also not decline over the following days
- To try removal from the blood, treatment with CytoSorb hemoadsorption cartridge was finally started on day 8 together with continuous renal replacement therapy (CRRT)

### Treatment

- In total, 3 hemoadsorbers were used for 44 consecutive hours
- CytoSorb was used in combination with CRRT run in veno-venous hemodialysis (CVVHD) mode
- Blood flow rate: 150 ml/min

### Measurements

- Neurologic status
- Lamotrigine levels
- Overall clinical condition

### Results

- Despite having been deeply comatose for days before, the patient tried to open her eyes upon request within the first 24 hours of ongoing extracorporeal therapy
- This was accompanied by a rapid and sustained decrease in lamotrigine plasma concentrations
- Furthermore, a clinical improvement (vigilance) was noticed during and after the treatment

## Patient Follow-up

- Following cessation of combined CRRT and CytoSorb therapy, the EEG showed intermittent epileptic activity and levetiracetam was started
- By the following day, the seizure potentials were no longer detectable under therapy
- The patient was clinically awake, could be extubated, and was able to be transferred to the Stroke Unit in a stable condition one day later

## Conclusion

- To our knowledge, this is the first clinical case describing the successful application of CytoSorb hemoadsorption in a patient with severe lamotrigine intoxication
- Comparison of pre and post adsorber levels suggests direct adsorption of the drug by the adsorber
- As no antidote exists, hemoadsorption with the CytoSorb device could represent a viable treatment option for patients with severe lamotrigine intoxication