

Toxic Extracorporeal Therapies SubRegistry: Update 2017

Joshua King¹, Saumitra Rege¹, Christine Murphy², Benjamin Hatten³, Ashley Haynes⁴, On Behalf of the Toxic Investigators Consortium (Toxic)

1University of Virginia, Charlottesville, VA, USA. 2Carolinas Medical

Center, Charlotte, NC, USA. 3Rocky Mountain Poison and Drug Center, Denver Health Medical Center, Denver, CO, USA. 4North Texas Poison Control Center, Parkland Memorial Hospital, Dallas, TX, USA.

Background: Extracorporeal therapies (ECT), such as hemodialysis, are critically important tools in the treatment of poisoned patients. In the last two decades, major changes have occurred in the nature, utilization, and availability of different types of ECT.

Objectives: We aim to characterize and describe the current use of ECT for poisoning, and assist in determining the effectiveness of ECT for various poisonings.

Methods: A prospective cohort study of individuals treated with ECT in the Toxic ECT subregistry between June 2015 and October 2017 was conducted. A full description of variables recorded in the main and sub-registries is available via the Toxic website <http://www.toxicregistry.org>. Results: Thirty-seven cases (46% female; median age 41 years) undergoing 41 types of ECT were reported. Seventy percent underwent hemodialysis, 24% continuous renal replacement; 2% respectively had peritoneal dialysis, plasma exchange, albumin dialysis, extracorporeal membrane oxygenation, slow continuous ultrafiltration, and exchange transfusion. Toxic alcohols, lithium, and salicylates comprised 54% of toxins, and 92% of toxins were at least moderately dialyzable. Most (57%) patients had acute kidney injury (AKI) prior to ECT; 71% of AKI was due to poisoning, and 38% of AKI resolved by hospital discharge. ECT was primarily initiated to remove toxins in 70% of patients, to treat AKI in 14%, and for acidosis in 8% of patients. Two patients experienced complications due to ECT (infection, hypotension). Seventy-eight percent had clinical improvement within 6 h of ECT. Three patients (8%) died during their hospitalization.

Conclusion: ECT is used for many reasons in poisoned patients. While most patients in this series underwent ECT primarily for drug removal, nearly one third underwent ECT for a different primary reason. Most patients had clinical benefit within 6 h of ECT, and few had complications of therapy. These data suggest a growing role for ECT in poisoning outside of the traditional use of intermittent hemodialysis primarily for drug removal.