

Presented at the ACMT Annual Scientific Meeting March 27-29, 2015 - Clearwater, FL
Published in J Med Toxicol 2015 March

109. The Use of Insulin-Euglycemic Therapy by Medical Toxicologists

Wax PM¹, Brent J², Campleman S³, On behalf of the ACMT Toxicology Investigators Consortium (ToxIC) ¹*University of Texas Southwestern Medical Center, Dallas, TX, USA;* ²*University of Colorado School of Medicine, Aurora, CO, USA;* ³*American College of Medical Toxicology, Phoenix, AZ, USA*

Background: In 1999, it was first reported that insulin-euglycemia therapy might provide benefit for calcium channel blocker overdose. Since 2010, the Toxicology Investigators Consortium (ToxIC) Registry has collected detailed information on all clinical consults seen by a nationwide multi-center network of medical toxicologists. This Registry can readily provide information about medical toxicology practices.

Research Question: In cases of presumed single drug poisoning, what are the most common indications for medical toxicologists to use insulin euglycemia therapy?

Methods: The ToxIC registry was queried between January 1, 2010 and October 30, 2014 regarding the use of insulin- euglycemia therapy. Single-agent exposure cases treated with insulin-euglycemia therapy were identified and further analyzed by agent name and class, and by outcome.

Results: Of 34,466 cases in the Registry between January 2010 and October 2014 entered by 50 sites, 137 patients (0.4 %) received insulin-euglycemia therapy—45 single-agent cases and 92 multi-agent cases. The 45 single-agent cases were reported by 23 sites. Of these cases, 75 % involved calcium channel blockers (n=24) or beta blockers (n=10). Insulin-euglycemia therapy was used most commonly for diltiazem (n=10) and verapamil (n=7) poisoning. Insulin-euglycemia therapy was also used in cases of propafenone, quetiapine, trazodone, amitriptyline, opioid, and acetaminophen poisoning. There were five recorded deaths, one each from amlodipine, diltiazem, metoprolol, propranolol, and an unknown opioid.

Discussion: Data from the ToxIC Registry can readily be used to describe antidotal use by medical toxicologists.

Conclusions: Insulin-euglycemia therapy is most commonly used for calcium channel blocker and beta blocker poisoning, and is used in approximately 1 in 250 cases cared for by medical toxicologists.