

## **Octreotide Use by Medical Toxicologists: an Analysis from the ToxIC Registry**

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**Background:** Octreotide is used to counteract hypoglycemia from insulin-secretagogue overdose. Theoretically, it could mitigate hypoglycemia due to excess insulin release from other causes. Its use in nonsulfonylurea anti-hyperglycemic poisonings has not been well-described.

**Methods:** We reviewed the ToxIC registry to describe octreotide use. We excluded patients who were not hypoglycemic, had no exposure to an anti-hyperglycemic, or did not receive octreotide. We defined hypoglycemia as blood glucose less than 60 mg/dL or free-text stating hypoglycemia. The primary aim was to quantify the association between hypoglycemia and treatment with octreotide. The secondary aim was to describe octreotide use in patients without sulfonylurea ingestion.

**Results:** We identified 144 patients with hypoglycemia of 7577 entries in ToxIC. Hypoglycemia was seen with anti-hyperglycemic medication exposure (66 of 144), analgesics (n = 13), ethanol (n = 12), opioids (n = 11), sympathomimetics (n = 6), and cardiovascular medications (n = 6) most commonly. Octreotide was used in 43 of these 144 patients. There was no significant difference in mortality when octreotide was used in all-cause hypoglycemia (Fisher exact test, not-significant). We identified 154 patients who had an anti-hyperglycemic exposure of 7577 entries. Of these, 14 had multiple anti-hyperglycemics listed (11 patients with two agents, 2 with three, and 1 with four). Metformin (n = 57) was the most common antihyperglycemic agent. Sulfonylureas were coded in 67 patients, 34 of whom received octreotide. In the 87 patients with non-sulfonylurea anti-hyperglycemic exposures, octreotide was almost exclusively used in patients with insulin exposure (n = 6). One patient had "diabetic med unspecified." In 16 patients who received octreotide without anti-hyperglycemic exposure, no pattern of use was established.

**Conclusion:** There is no significant difference in mortality with octreotide use in all-cause hypoglycemia in the ToxIC registry. Octreotide is widely used by toxicologists for sulfonylurea poisonings. Of non-sulfonylurea anti-hyperglycemic poisonings, insulin exposure is the most common specified instance in which octreotide is given.