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008. Fomepizole as an Adjunctive Therapy for Acetaminophen Poisoning: Cases Reported to the Toxicology Investigators Consortium (ToxIC) Database 2015-2020

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Background: Fomepizole inhibits the formation of toxic acetaminophen (APAP) metabolites and may prevent or reverse mitochondrial toxicity. Given these mechanisms, it may be beneficial in select patients with toxicity from APAP.

Research Question: How have medical toxicologists used fomepizole in the treatment of APAP toxicity over the previous five years?

Methods: This is a retrospective analysis of patients enrolled in the Toxicology Investigators Consortium (ToxIC) database from January 2015 to July 2020. We queried cases in which APAP was listed as an ingested agent and fomepizole was also administered as an antidote. We excluded cases in which APAP was not the primary agent, NAC was not administered, or fomepizole was explicitly administered for an indication other than for APAP toxicity (e.g., toxic alcohol exposure). Additionally, we sent a survey to each ToxIC site that administered fomepizole for APAP toxicity to better understand when, why, and how they are using it for this indication.

Results: A total of 38 cases of fomepizole administration following an APAP ingestion were reported, with 25 cases meeting our inclusion criteria. There were one to four cases per year between 2015 and 2019 and eight cases in 2020. Seventeen of 25 (68%) of cases were for known acute ingestion. Eighteen of 25 (72%) of patients developed hepatotoxicity (AST > 1000) and 10 of 25 (40%) developed coagulopathy (PT > 15). This was an ill patient population, with 18 of 25 (72%) developing metabolic acidosis (pH < 7.20), 12 of 25 (48%) requiring intubation, 9 of 25 (36%) receiving vasopressors, and 6 of 25 (24%) requiring continuous renal replacement therapy. Overall, mortality was 24%.

Conclusion: Fomepizole is increasing in frequency in a small subset of critically ill and acutely APAP-poisoned patients.