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043. Predictors of Inpatient Mortality in Colchicine Toxicity: An Analysis of the Toxicology Investigators Consortium Registry

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Background: Colchicine is an alkaloid derived from *Colchicum autumnale* and *Gloriosa superba* that has been used to treat gout, pericarditis, and autoimmune disorders. Its therapeutic index is narrow. Overdose is often fatal, characterized by gastrointestinal distress, bone marrow failure, and refractory shock. Hypothesis: Inpatient mortality from colchicine toxicity is directly associated with intentional overdose, acute kidney injury (AKI), coagulopathy, and history of coronary artery disease (CAD); it is inversely associated with gastrointestinal decontamination and granulocyte colony-stimulating factor (G-CSF) administration.

Methods: This is a retrospective analysis of 47 patients with colchicine toxicity entered in the ToxIC registry (January 2010 - October 2022). Two patients were excluded due to unknown medical history; one was excluded for unknown reason for exposure. Mortality rates with respect to each secondary endpoint were compared using Fisher's exact test. Statistics were performed using IBM SPSS for Macintosh version 29.0. Secondary endpoints comprised intentional vs. unintentional overdose, coingestants, gastrointestinal decontamination, CAD, AKI (creatinine above 2.0 mg/dL), hypotension (systolic blood pressure below 80 mmHg), acidemia (pH less than 7.2), and coagulopathy (prothrombin time greater than 15 seconds).

Results: CAD (likelihood ratio LR 7.01, p = 0.02), hypotension (LR 8.05, p = 0.01), and acidemia (LR 6.27, p = 0.02) were associated with inpatient mortality. There was no association with intent of overdose, coingestants, AKI, coagulopathy, or gastrointestinal decontamination (p = NS). Limitations include few patients experiencing the primary endpoint and incomplete data availability. Ingested dose was not uniformly recorded, and G-CSF administration was not included in the registry. Analyzing patient populations treated at ToxIC sites may also introduce selection bias.

Conclusion: History of CAD, hypotension, and acidemia may serve as predictors of inpatient mortality from colchicine toxicity. Further research is needed to assess the effects of gastrointestinal decontamination and G-CSF on inpatient mortality secondary to colchicine toxicity.