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63. Fatalities From Drug Overdoses and Predictors for the Withdrawal of Life Support and Brain Death Determination, 2017-2023

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Background: Few studies have examined the characteristics of those who have life support withdrawn and brain death confirmed after a drug overdose. This study sought to deter- mine predictors associated with life support withdrawal and brain death confirmation among fatalities in the ToxIC Core Registry.

Research Question: Are there differences in demographics, drug exposures, and overdose intent among those who have life support withdrawn and receive brain death confirmation compared to those who die naturally after an overdose?

Methods: The ToxIC Core Registry is a national, multi- center registry of patients seen at the bedside by medical toxicologists. The analytic sample consisted of drug over- dose fatalities who received toxicological treatment and were intubated (n = 217). Analyses consisted of multi- variable logistic regression models to determine significant predictors for: 1) patients who had life support withdrawn vs. those who died naturally and 2) patients who had brain death confirmation vs. those who did not have brain death confirmation among those who had life support withdrawn. Analyses were conducted in R v 4.2.1.

Results: Among those who were intubated and died from 2017-2023 (n = 217), 65.9% (n = 143) had life support with- drawn, and 27.2% did not have life support withdrawn (6.9% unknown). Of those with life support withdrawn, 53.1% had confirmed brain death prior to life support withdrawal. There were no statistically significant differences in the odds of life support withdrawal for demographic characteristics (e.g., age, sex, race/ethnicity). Cardiovascular drug over- doses were associated with a reduced odds of life support withdrawal (aOR: 0.77; 95% CI: 0.63, 0.95). There were no statistically significant differences in demographics, type of drug overdose, or type of intent with the odds of brain death determination.

Conclusion: Among cases seen by medical toxicologists at the bedside, there were no disparities in sex or race/ethnicity identified for life support withdrawal or brain death confirmation.