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153. Drug Shortage Outcomes and Solutions Reported to the ToxIC Registry Over a Six-Month Period

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Background: Drug shortages have become increasingly common and often involve antidotes. Data describing the impact of antidotal shortages on patients and hospitals, and mitigation strategies hospitals employ, are limited.

Hypothesis: Antidotal shortages adversely affect poisoned patients and hospitals.

Methods: This is an analysis of data reported to the drug shortage sub-registry of the Toxicology Investigators Consortium (ToxIC). This sub-registry was created in January 2023. It tracks shortage mitigation strategies and outcome metrics including level of care, length of stay, cost, morbidity, and mortality. The sub-registry was queried on October 23, 2023. Finalized data were available from January to June 2023. Rates of shortage, institutional responses, and adverse outcomes were calculated.

Results: Nineteen poisoned patients whose encounters were impacted by shortage were identified from January to June 2023, representing 0.5% of all patients reported during this period. Drugs involved were physostigmine (12/19 cases), calcium disodium edetate (4/19), dimer-caprol (one), glucagon (one), and baclofen (one). Physostigmine shortage was mitigated by substitution in eight cases: five patients received rivastigmine, two received benzodiazepines, and one received dexmedetomidine. Calcium disodium edetate shortage necessitated inter-institutional sharing (two cases), compounding (one), and succimer substitution (one). Four patients did not receive any pharmacotherapy because of physostigmine shortage. Eleven patients were adversely impacted: seven had increased length of stay, three required a higher level of care, and one required intubation. Excessive somnolence from dexmedetomidine was the only adverse reaction from substitution reported. Delay to treatment and increased hospitalization cost were each reported in three cases. No patients suffered death or permanent morbidity.

Conclusion: Over a six-month period, care of poisoned patients was rarely affected by shortage. Shortages predominantly involved physostigmine and calcium disodium edetate, and were

mitigated with multiple strategies including substitution, compounding, and inter- institutional sharing. Eleven shortages (58%) adversely impacted patients, however no mortality or permanent morbidity resulted.