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16. Use of Multidose Activated Charcoal in the ToxIC Registry

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Background: A position paper from AACT and EAPCCT in 1999 provides an evidence-based review of the literature and guidelines on the use of multidose-activated charcoal (MDAC) for acute poisonings. The ACMT Toxicology Investigators Consortium (ToxIC) registry is a robust data source that offers important epidemiological insight poisoning trends and practices.

Hypothesis: Do current MDAC treatment practices by toxicologists involved in the Toxicologic Investigators Consortium align with published guidelines?

Methods: We reviewed the ToxIC Case Registry in its entirety (2010–present) for cases involving MDAC treatment. Descriptive statistics were used for analysis.

Results: Out of nearly 25,000 case entries, the Registry contained 66 patients treated with MDAC for an acute poisoning. Two (3 %) were between 7 and 12 years old, 20 (30%) were between 13 and 18 years old, 41 (62 %) were 19–65 years old, and 3 (5 %) were older than 65. Fortyfour (66 %) were women, and one was pregnant. Salicylates were involved in 29 of 66 cases (44 %), 18 (27 %) of which they were the sole toxin. Valproic acid was second most common in 12 cases (18 %; five polydrug). Eight (12 %) were phenytoin ingestions (one polydrug). Seven (11 %) involved acetaminophen (six polydrug). Four (6 %) involved carbamazepine, three (5 %) involved theophylline, two (3 %) involved cyclobenzaprine (one polydrug), two (3 %) involved amitriptyline (one polydrug), two involved ibuprofen (one polydrug), three involved phenobarbital (three polydrug), and several drugs/toxins were involved in a single poisoning: lamotrigine, cyclopeptide-containing mushrooms, colchicine, XR diltiazem, propoxyphene, atenolol, and quetiapine. Secondary agents involved in more than one of the ingestions included diphenhydramine (three), caffeine (three), and benzodiazepines (three).

Discussion: Previously published practice guidelines suggest MDAC should be considered in life-threatening poisonings involving carbamezapine, dapsone, phenobarbital, quinine, or theophylline. While some of these ingestions are not common, carbamezapine, phenobarbital, and theophylline were among the ingestions treated with MDAC in the ToxIC Registry. The most common drug ingestion, however, in which MDAC was used in the Registry were salicylates despite consensus guideline specifically not recommending MDAC be used for salicylates (although this recommendation remains controversial).

Conclusions:MDAC is infrequently used to facilitate drug elimination in ToxIC cases and practice contrasts somewhat from published guidelines. An update on MDAC use is warranted.