

ECG Assessment in Acute Overdoses

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Background: Cardiotoxicity from xenobiotics involved in overdose is a major cause of poisoning morbidity and mortality. Screening and clinical vigilance can identify early warning signs of cardiovascular decompensation.

Research Question: To investigate the proportion of drug overdose patients who receive EKGs within 60 min of arrival to the emergency department (ED).

Methods: Data was collected as part of the Centers for Medicare and Medicaid Services (CMS) approved ToxIC Qualified Clinical Data Registry (QCDR), a component of the ACMT ToxIC Registry. Participants were asked to report on whether an ECG had been obtained as part of the toxicological evaluation. The ECG could have been ordered by any of the patient's health care providers including the triage nurse, EM physician, or medical toxicologist. The denominator was all intentional pharmaceutical overdoses of any age who present to the emergency department, and the numerator was patients who have an ECG within 60 minutes of arrival to the ED. Exclusions include patients who present in cardiac arrest, exploratory pediatric ingestions with non-cardiotoxic drugs, and patients transferred from another hospital.

Results: During the first 6 months of data collection, data was submitted by 29 providers at 9 ToxIC sites. Then, 294 patients met the denominator. Seven of these had incomplete data or denominator exclusions. Further, 130 had an ECG within 60 min. The performance rate who met the metric was 45.9%.

Conclusion: More than 50% of all intentional pharmaceutical overdoses do not receive an ECG within 60 min after presentation to the ED. These data underscore the importance of medical toxicologists working with their institutions' emergency departments to assure that ECGs are done in a timely fashion on patients known or suspected to have had an intentional pharmaceutical overdose.