



PP05

Swift Diagnosis and Sodium Bicarbonate Rescue in Severe TCA Toxicity-Induced Cardiac Arrest: A Case Report

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Introduction:

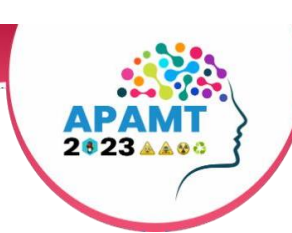
In recent years, rising antidepressant prescriptions have elevated the risk of tricyclic antidepressant (TCA) toxicity, challenging healthcare providers. TCA overdose often leads to life-threatening cardiac arrhythmias and cardiac arrest, necessitating swift and effective intervention. We present a case of a young female in cardiac arrest due to severe TCA toxicity. This report illustrates how rapid recognition and targeted intervention can reverse a dire clinical course, offering crucial insights into TCA toxicity-induced cardiac arrest management.

Case description:

A 29-year-old female was brought to the ED in cardiac arrest. Found unresponsive by her family, her medical history included untreated thyroid disease and medication for headaches and sleep disturbances.

Upon arrival, CPR was initiated and, after five cycles, ROSC was achieved. Post-ROSC, her vital signs included a HR of 140/min, BP 100/60 mmHg, prolonged capillary refill, 99% Spo₂ with bag-mask ventilation, and GCS E1V1M1. She was intubated, ventilated, and given IV fluids. Serial ECGs revealed multifocal atrial tachycardia, PR prolongation, rightward axis deviation, QRS widening >100 ms, terminal R wave > 3mm in lead avR, and a Brugada pattern in lead V2, raising suspicion of tricyclic antidepressant

(TCA) poisoning. She received 8.4% sodium bicarbonate (100 mEq) and started on sodium bicarbonate infusion. Later, her family provided empty tablet strips of amitriptyline (90 tablets) and diazepam (20



tablets) found at home, confirming the diagnosis. A nasogastric tube was inserted followed by 50 g activated charcoal administration to reduce further drug absorption. Sodium bicarbonate therapy was continued in the ICU until ECG normalized and pH stabilized. She regained consciousness, was extubated on day 3, and discharged on day 5 with psychiatric follow-up. This case highlights the importance of early TCA toxicity recognition through ECG findings and the rapid initiation of sodium bicarbonate therapy, saving the patient from life-threatening arrhythmias, and facilitating her physical and mental recovery.

Discussion:

The role of electrocardiogram (ECG) findings in promptly diagnosing TCA toxicity within the confines of the emergency department is of paramount importance and has earned it the colloquial title of the “poor man’s tox screen.” The findings such as QRS widening and the Brugada pattern acted as red flags, enabling immediate intervention. Recognition of these abnormalities expedited the initiation of life-saving sodium bicarbonate therapy, effectively countering the toxic effects. Timely treatment hinged on this rapid diagnosis. In resource-constrained settings, ECG serves as a vital ally for physicians, enabling prompt diagnosis and treatment of TCA toxicity, ultimately leading to the patient’s successful recovery and discharge.