

Approach to poisoned patients with high anion gap metabolic acidosis in the emergency department – a case series

Reem Khalid Ali^{1*}, Ebtesam Safi¹, Tibah Ahmad Al Abbasi¹,
Salma Abdullah Khamis Rajaby¹



1. United Arab Emirates, Dubai, Dubai Health - Department of Emergency Medicine, Rashid Hospital

Correspondence to: Reem Khalid Ali

* United Arab Emirates, Dubai, Dubai Health - Department of Emergency Medicine, Rashid Hospital

Email: reem.k277@gmail.com

DOI: 10.24911/SJEMed.72-1709877293

Toxicology cases are frequent presentations in the emergency department (ED) and often their presentation can vary from a straightforward manner to a complex manner. In this case series we will discuss three cases that presented to the emergency department with a known, suspected, and unknown toxicological substance ingestion with the common denominator being high anion gap metabolic acidosis (HAGMA). High Anion Gap Metabolic acidosis is a subcategory of metabolic acidosis. Categorizing metabolic acidosis as high anion gap aids in identifying the underlying disease process and subsequently initiating appropriate treatment. There have been many broadly inclusive mnemonics used to list the common causes of High anion gap acidosis such as CAT MUDPILES which correspond to Carbon monoxide, Cyanide, Congenital heart disease, Aminoglycosides, Theophylline, Toluene, Methanol, Uremia, Diabetic ketoacidosis, Alcoholic ketoacidosis, Starvation, Acetaminophen, Phenformin, Paraldehyde, Iron, Isoniazid, Inborn errors of metabolism, Lactic acidosis, Ethanol, Ethylene glycol and Salicylates respectively. It is not uncommon to be faced with patients with an unclear clinical picture and a lack of clear toxicological ingestion. In such circumstances, the presence of a high anion gap acidosis is an important clue that should prompt investigating for uncommon toxicological causes not listed in the forementioned mnemonics, such as metformin, beta blockers and calcium channel blockers.

Keywords:

Metformin, Calcium Channel Blocker (CCB), Methanol, High Anion Gap Metabolic Acidosis (HAGMA), Toxicology, Poisoning