

Gold Sparkles But Cyanide Kills

Abstract

Potassium Cyanide was discovered in 1807 by an English Chemist-Humphrey Davey who isolated it from Potash.

Cyanide is one of the most lethal poison's known to man, used in both ancient and modern times as a method of execution, suicide, Holocaust and has been implicated in biochemical warfare.

Statistical evidence shows it's worldwide industrial consumption to be about 1.5million.It is commercially used in mining, electroplating in jewellery and photography.

As emergency department physicians our usual experience of cyanide poisoning is as a result of combustion of products containing carbon and nitrogen (wool, rubber, resins) commonly seen in house fires.

We present the clinical course, management and survival of a patient who had presented to our Emergency Department(ED) after ingesting a Gold Plating solution containing Potassium Cyanide.

Case Presentation

A 54years old male was prioritized into our Resuscitation /Emergency Department after allegedly ingesting gold pen plating solution containing Potassium Cyanide and paroxetine tablets(15 tablets) with alcohol on 18/12/2013.

Patient said he was depressed due to family dispute and had several episodes of vomiting and diarrhoea. No other symptoms manifested.

He was isolated and a full protection protocol was put in place . He had mild tachycardia but normal blood pressure. His systemic examination was normal.

Initial investigations showed a raised lactate-4.9 and a base excess of -8.6

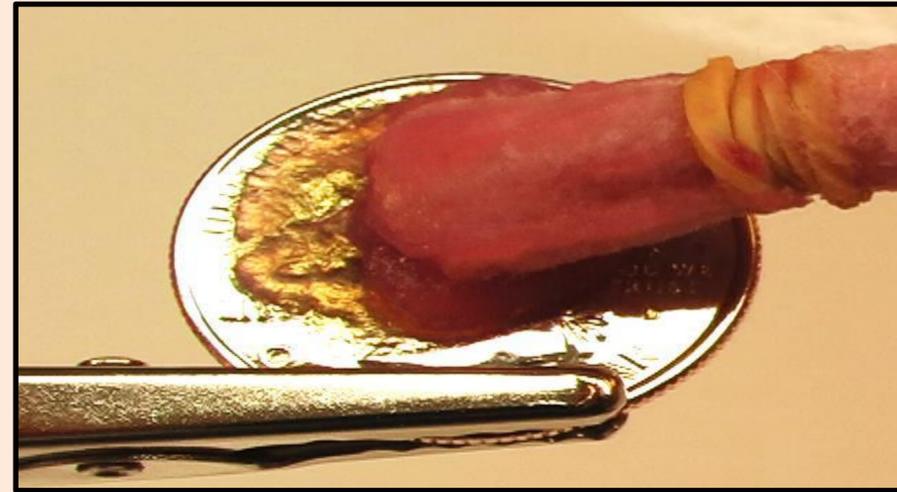
He was managed symptomatically with IV Fluids and anti-emetics .

Meanwhile poison's network/Toxbase were consulted. The poison's consultants were of the opinion that it was a case of mild cyanide poisoning but felt he would need close monitoring therefore he was admitted under the care of the Intensive care unit.

He had an initial rise of his liver enzymes which improved after few days.

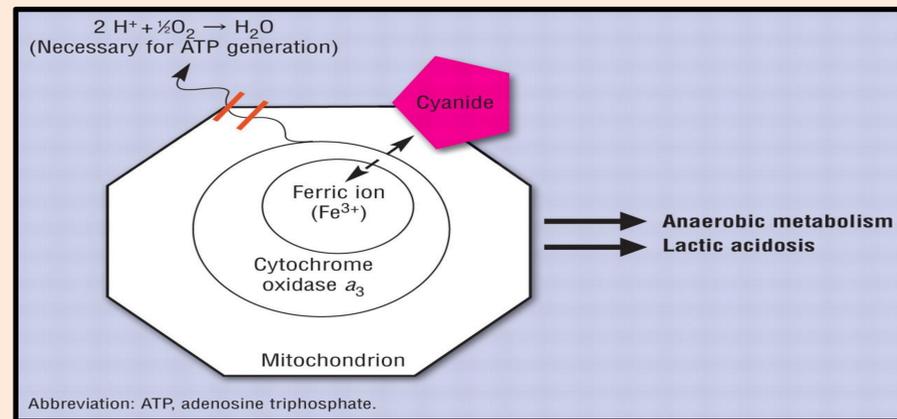
Gastroenterology review was carried out and it was attributed to be an idiosyncratic reaction to paroxetine.

He improved and was discharged after a psychiatry review.



Discussion

Cyanide is a lethal poison, a mitochondrial toxin which causes death from minutes to hours.



The common causes of exposure are fire, mining, electroplating jewelry, photography, plastics and rubber manufacturing.

Worldwide consumption of cyanide is 1.5million tons per year.

It is also present in traces in Bitter Almonds, Apple and Pear seeds.

Once ingested in sufficient quantity symptoms manifest as vomiting, dyspnoea, confusion, seizures, coma and death.

Management of Cyanide Poisoning



The most important modality of treatment is to follow ALS pathways.

Complete isolation of patient is recommended before assessment and then to be treated as per Toxicology advice.

Decontamination and Antidote as per ToxBase guidelines.

Involving intensivists at an early stage is recommended as patients occasionally require Haemodialysis as and Antidote treatment.

Treatment decisions must be made on the basis of clinical history and signs and symptoms of cyanide intoxication. If clinical suspicion of cyanide poisoning is high, Cyanokit should be administered without delay.

Symptoms	Signs
Headache	Altered Mental Status (e.g., confusion, disorientation)
Confusion	Seizures or Coma
Dyspnoea	Mydriasis
Chest Tightness	Tachypnea / Hyperpnea (early)
Nausea	Bradypnea / Apnea (late)
	Hypertension (early) / Hypotension (late)
	Cardiovascular collapse
	Vomiting
	Plasma lactate concentration ≥ 8 mmol/L

Emergency Practitioners must maintain a high index of suspicion of cyanide poisoning in appropriate cases due to it's highly toxic nature and management involves a methodical approach early on in order to prevent a catastrophic outcome.