

HARPIC POISONING: A REPORT ON ACUTE AND DELAY MANIFESTATIONS OF TWO CASES

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ABSTRACT

Aim: Harpic poisoning is a life threatening condition where it requires proper assessment for long term manifestations. **Objective:** The main Objective of the study is to explain acute and chronic manifestations in harpic poisoning patients. **Method:** we performed a pilot study with a sample size of two. **Results:** Here two patients ingested harpic as suicidal ingestion and are presented with grade 0 and grade 3b which is differentiated according to the Zargar's classification based on the clinical presentation and laboratory details. **Conclusion:** Though the symptoms were subsided, some complications are seen during the period which has to be treated with utmost care and follow-up is required to improve the patient quality of life.

Keywords: Zargar's classification, harpic poisoning, perforations.

INTRODUCTION

Acute poisoning is a global problem which has steadily increased over the past few years in developing countries and has become as one of the major causes of mortality and morbidity in many countries [2]. Corrosives are a group of chemicals that can cause tissue damage on contact by a chemical reaction. The modern technology has developed many chemical substances which are used in therapy and also as toilet bowl detergents [5].

According to the report of American Association of Poison control, there are about 2, 00,000 caustic poisonings annually, most frequently with acid and alkaline agents that are used as cleansing substances in the households [6].

Acids and alkalis are the two primary types of agents most responsible for caustic exposures. These corrosives can cause chemical inflammation of the surface of the internal tissue; necrosis and gastric perforation [5]. Acids affect the stomach more commonly than alkalis [1]. Corrosive agents with a pH level <2 or >12 rapidly penetrate layers of the esophagus resulting in necrosis induced Escher formation in the mucosa that limits deep tissue penetration [3]. The extent of tissue destruction depends on physical form, type, and concentration of the corrosive agent, pre-morbid state of the tissue, contact duration and amount of substance ingested [3].

Table 1: indicates most commonly used corrosives in poisonings [4]

Caustic substance	Type	Commercially available form
Acids	Sulphuric	Batteries., Industrial cleaning agent
	Oxalic	Paint thinners, metal cleaners, strippers
	Hydrochloric	Antirust agents, metal cleaners, solvents
Bases	Phosphoric	Toilet cleaners
	Sodium hydroxide	Drain cleaners, home soap manufacturing
	Potassium hydroxide	Oven cleaner, washing powders
	Sodium Carbonate	Soap manufacturing, fruit drying farms

The most common abused acid is Hydrochloric acid (more than 50% cases) which is easily accessible as a sanitary cleaning

agent. In cleansing products, it contains 10% - 50% of concentrated hydrochloric acid based on the product it varies concentration. Hydrochloric acid causes coagulation necrosis. In this process, hydrogen (H⁺) ions desiccate epithelial cells produce an Escher (slough or piece of dead tissue from the surface of the skin). This process leads to edema, erythema, mucosal sloughing, ulceration, and necrosis of tissues. Clinical presentation includes burning pain in lips, mouth, throat, and stomach, hoarseness of voice, esophagitis, gastric tissue perforation, etc. The severity of the injury is classified by Zargar's classification [6].

Grade	Description
0	Normal mucosa
1	Erythema
2a	Superficial ulcer/erosion/hemorrhage
2b	All findings in 2a/circumferential ulcers
3a	Scattered necrosis
3b	Extensive/circumferential necrosis of the mucosa

Treatment includes symptomatic therapy and general management but no specific antidote for this poisoning. Activated charcoal was inactive in this condition. Neutralization of acid and prevention of further damage are the main therapeutic goals [6]. Neutralization of the acids can be done by providing the milk to the patient by ryles tube.

CASE REPORT

Patient 1: A 24-year-old male adult was admitted in general medicine department on tertiary care hospital with history of consumption of harpic (toilet cleaner) of about 20-50ml with chief complaints of 4 episodes of vomiting's, 1 episode of hematemesis, 4 episodes of black colored stools (Malena) and patient was known case of epilepsy on treatment. He had admitted in emergency department given intravenous fluids, proton pump inhibitors, antiemetics, anti-epileptic, topical anesthetic and an empirical antibiotic. On examination his blood pressure was 110/80mmHg, pulse rate was 84 beats/min, respiratory rate was 32 beats/min and respiratory system examination revealed that decreased breath sounds on left infra scapular area and crepts were heard, on eye examination revealed that both eyes underwent primary optic atrophy and gastrointestinal examination showed abdomen is soft but abdominal pain were observed.

All laboratory tests were found to be normal, but hemoglobin was slightly decreased. On 2nd day of admission patient was semiconscious, cold, clammy limbs with low blood pressure and pulse rate. The condition was stabilized after 3 hours. On day 5th

patient experienced odynophagia (painful swallowing), and symptoms were relieved. Finally, he was discharged on the 15th day of admission. On the day of discharge, patient vitals were normal, and systems examination was clear.

Patient 2: Another case of the 26-year-old male patient had been admitted in general surgery department for consumption of Harpic and treated in local hospital symptomatically. After 20 days he had experienced the excessive vomiting's, bleeding in stools, abdominal pain, and odynophagia. Therapy provided was antibiotics, proton pump inhibitors, analgesics. On examination his blood pressure was 110/70mmHg, pulse rate was 86 beats/min, and on system examination, all were clear except gastrointestinal system which showed abdominal distension, pain, and tenderness in the patient after the general examination. Laboratory tests were normal, but endoscopy revealed that emetic esophagitis and corrosive stricture in the pyloric region.

DISCUSSION

Corrosive poisoning is common in underdeveloped countries. Symptomatic treatment is only preferred to manage the initial symptoms of the patient which could prolong the damage because of no appropriate therapy. Acid corrosives cause coagulation necrosis in which hydrogen ions desiccate the epithelial cells producing an eschar. This process leads to edema, erythema, mucosal sloughing, ulceration, and necrosis of tissues. However, in the reported two cases, the first patient developed initial symptoms (like vomiting's, hematemesis, Malena etc.) after immediate admission whereas in the second patient the symptoms were observed after 20 days, he had been suffered from symptoms like odynophagia, excessive vomiting's, bleeding in stools, abdominal distension, abdominal pain and also severe emetic esophagitis, corrosive stricture pyloric region.

According to the Zargar's modified endoscopic classification of burns due to corrosive ingestion first patient had grade 0 with no damage in the mucosal layer where as in the second patient along with the common symptoms, emetic esophagitis and corrosive stricture pyloric region are observed, it belongs to grade 3b. Initial management of acid poisoning was not clear but diluting of acid is major goal. Nasogastric intubation should not be preferred because it may further damage the mucosa then leads

to bleeding and erosions. Activated charcoal is also not recommended in this condition. First aid measures include administration of intravenous fluids and subsequently endoscopy, and physical examination have to be done to estimate the damage of the organs. Surgery should be preferred for stricture and corrosive part of gastrointestinal tract.

Conclusion

Harpic is majorly used toilet cleaner in household and it is major cause of many intentional deaths in developing countries. By the ingestion of these compounds if the patient is not expired then lifelong medical dependency is required in some cases and also life-threatening complications will be observed. In this poisoning, initial management is crucial. Though the symptoms were subsided, some complications are seen during the period which has to be treated with utmost care and follow up is required to improve the patient quality of life.

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