



CORROSIVE INJURIES OF UPPER GASTROINTESTINAL TRACT- FIVE YEARS EXPERIENCE IN TERTIARY CARE CENTRE IN SOUTH INDIA

Gastroenterology

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ABSTRACT

Introduction: Corrosive ingestion, most commonly acid, is a common form of poisoning in India as it is cheap and easily available. It is associated with dreaded complications.

Aim: To study the endoscopic findings and management in patients with corrosive ingestion in a tertiary referral centre.

Materials & methods: Retrospective, descriptive study of case records of patients with corrosive injury. Endoscopic findings and management were analysed during the study period of 5 years between June 2013 to May 2018.

Results: Out of 130 cases 119 were adults. 123 had endoscopy. Endoscopic findings showed grade 1 corrosive injury in 40.6 %, grade 2a in 46.3% and grade 2b in 13.1% in esophagus. Gastric findings included normal mucosa in 16.3%, grade 1 in 47.1%, grade 2a in 26% and grade 2b and above in 10.8%. Stricture was noted in 14.6 %.

Outcome: Majority were managed conservatively and endoscopic stricture dilatation was required in 10.6% and surgery was done in 4%.

Conclusion: Patients with grade 0, 1 and 2a injuries require observation and can be managed as out-patients, while patients with grade 2b and 3 injuries require hospital admission and are at risk of developing complications.

KEYWORDS

Corrosive ingestion, Esophageal stricture, Antral stricture

INTRODUCTION

Gastrointestinal tract injuries due to ingestion of corrosive acids or alkalis occur either accidentally or with suicidal intention, is a source of considerable mortality and morbidity all over the world. The actual data on the epidemiology of the ingestion are scarce due to poorly reporting system in most countries. In developing countries like ours, the burden is even more because of poorly regulated sale of corrosive substances and easy availability. However due to the substantially enhanced diagnostic and therapeutic approach, the mortality has been significantly reduced from 20% to 5%¹.

AIM: To study the endoscopic findings and management in patients with corrosive ingestion in a tertiary referral centre in South India.

MATERIALS AND METHODS: Retrospective, descriptive analysis of case records of patients with corrosive injury for 5 years between June 2013 and May 2018 was done in Department of Medical Gastroenterology, Government Mohan Kumaramangalam Medical college & Hospital, Salem.. Details of endoscopy were recorded. Grading of corrosive injury was based Zargar classification². Exclusion criteria included patients who reported after 96 hours and those who had signs of perforation. Those patients with failed endotherapy were treated surgically. Details of patients who underwent endoscopic stricture dilatation and surgery were analysed.

RESULTS:

Total number of cases was 130. 119 were adults of which 64 (53.78%) were males and 55 (46.21%) were females and 11 were children. 125 ingested corrosive acid and 5 ingested corrosive alkali. 123 patients underwent endoscopy. Two had hemodynamic instability precluding the study and 5 were not cooperative. Endoscopic findings in 123 cases were recorded. Endoscopy was done within 96 hours of ingestion after getting oral and written consent.

Hyperemia of the oral cavity was seen in all patients. 50 (40.6%) patients had grade 1 corrosive injury, 57 (46.3%) had grade 2a injury and 16 (13.1%) had grade 2b injury of the esophagus. In the stomach, 20 (16.3%) had normal mucosa, 58 (47.1%) patients had grade 1 injury, 32 (26%) patients had grade 2a injury and 13 (10.6%) had grade 2b and above injury. Duodenal injury was observed in 5(4%) of subjects and was more common in children than adult.

All the patients were treated with intravenous fluids and proton pump inhibitors. After endoscopy, oral feeding was started in patients with injury lesser than grade 2a. Stricture was noted in 18 (14.6 %). Endoscopic stricture dilatation was required in 13 (10.6%) patients.

Surgical management in the form of coloplasty with antrectomy was done in 2 patients and antrectomy alone was done in 3 patients

DISCUSSION

Corrosive ingestion, most commonly acid, is a common form of poisoning in India. The most common reason for corrosive ingestion in adults is suicidal and in children is accidental. Corrosive ingestion is more common in males compared to females³. The most common vulnerable age group is between 20–35 years³.

The most serious and extensive injury occurs in the oesophagus and stomach as they are in contact with the corrosive agent for longer period. The severity and the relative extent of the chemical injury/burns from corrosive ingestion depend on the quantity, concentration and physical form of the agent, duration of contact with the mucosa and pH of agent.

Both acids and alkalis cause fibrosis and stricture formation. Alkalis cause liquefaction necrosis, resulting in penetrating injury to the oesophagus till it gets buffered by the tissue fluids. Injury to the stomach mucosa is limited due to neutralization by the acid in stomach. Acids cause coagulation necrosis, leading to cell death and eschar formation, limiting tissue penetration and protecting against deeper injury.

Endoscopy is the most useful diagnostic tool in evaluation of the corrosive injuries. It is preferable to do endoscopy within 96 hours of ingestion⁴. It is better to avoid upper endoscopy between 5 and 15 days after the ingestion because of high risk of perforation. This protocol was followed in our centre. It is observed that patients with injuries of greater than grade 2b in esophagus and stomach at the time of endoscopy developed complications⁵.

Complications of corrosive injury are classified as acute complication which includes airway compromise, gastrointestinal bleed and gastrointestinal perforation, aspiration pneumonia and late complications include esophageal stricture, antral stricture and rarely squamous cell carcinoma esophagus. About two-third of patients with corrosive esophageal injury develop esophageal strictures, mainly in those with grade 2b or 3 injuries⁶. Patients with grade 1 to 2a usually tolerate oral feeds and those with grade 2b,3a will require naso-enteral feeding. Patients with grade 3b lesions require feeding jejunostomy for enteral feeding and may even require total parenteral nutrition.

Management of corrosive injury include hemodynamic stabilisation depending up on severity of injury. Proton pump inhibitors and H2

blockers are routinely recommended. Antibiotics are recommended in grade 3 injury and suspected gastrointestinal perforation but have no prophylactic role. Nutritional rehabilitation is the most important step in these patients as mortality is high in those with under nutrition.

Endoscopic stricture dilatation is done usually 3-4 weeks after the corrosive ingestion as risk of perforation is high, if done early². The desired goal is to dilate the esophageal lumen to about 15 mm and to relieve dysphagia in these patients⁷. Endoscopic stricture dilatation was required in 13 (10.6%) patients.

Surgery is indicated in the patients with long segment strictures more than 3 cm, strictures resistant to dilatation therapy and if the patients develop complications like perforation. Surgical management includes resection of the injured & stricture segment or by-pass. Surgical management in the form of coloplasty with antrectomy was done in 2 patients and antrectomy alone was done in 3 patients. The limitation of our study is a retrospective study with lack of long term follow up.

CONCLUSION

Corrosive ingestion produces severe injury to the gastrointestinal tract. Acid ingestion is more common than alkali ingestion. Early upper GI endoscopy is now regarded to have a very crucial role in both diagnosis and management of the patients with corrosive ingestion. Patients with grade 0, 1 and 2a corrosive injuries require observation and can be managed as out-patients, while patients with grade 2b and 3 injuries will require hospital admission and are at risk of developing complications.

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