ORIGINAL ARTICLE

Frequency of Clincopathological Presentations of Stomach in Patients with Corrosive Intake

NASIR NASEEM AKHTAR[1], HAFIZ MUHAMMAD ASIF MAQBOOL[2], MUHAMMAD FAHEEM[3], *ASAD[4]*
[1,2]Assistant Prof. Surgery, K. E. Medical University/Mayo Hospital, Lahore.
[3,4]PGR Surgery, Mayo Hospital, Lahore
Correspondence to Dr. Nasir Naseem Akhtar, Email: updatecomposing@gmail.com Cell: 0333-6885628

ABSTRACT

Background: Corrosive are substances that causes tissue injury when comes in contact which some tissue by a chemical reaction. Gastrointestinal tract (GIT), respiratory system and eyes and most commonly effected. Corrosive agents are a leading toxicological source of injury. In every house various types of cleaning agents are present and mostly they are associated with large number of accidental and intentional corrosive poisonings.
Aim: To find out the frequency of clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital.
Duration of study: Six months from 25-07-2015 to 24-01-2016.
Study design: Cross sectional survey.
Methodology: The data was collected from the patients admitted on surgical floor of Mayo Hospital, Lahore through outpatient department, emergency, referred by other hospitals of Lahore City, with diagnosis of corrosive intake fulfilling the inclusion criteria. Informed written consent was taken after explaining the procedure to the patient. Patient's age, sex, clinical presentation (normal finding, hyperemia and edema, stenosis of antrum, corpus and pylorus, stenosis of antrum and corpus and stenosis of pylorus) was noted on upper GI endoscopy was performed by same consultant. A pre-designed proforma was used to record all relevant data.
Results: In our study, 93(42.82%) were between 15-35 years of age while 58.18% of the cases were between 36-50 years of age, mean±SD was calculated as 35.26±7.17 years, males were 103(46.36%) and females were 119(53.64%). Frequency of patients with corrosive intake presenting in a tertiary care hospital was recorded as 81(36.825) had normal findings, 58(26.36%) had hyperemia and edema, 29(13.18%) had stenosis of antrum, 43(19.55%) had corpus and pylorus while 9(4.09%) had stenosis of antrum and corpus.
Conclusion: We concluded that hyperemia and edemia are the most common clinical presentations of stomach in patients with corrosive intake followed by Corpus and pylorus and stenosis of antrum.
Keywords: Corrosive intake, gastrointestinal tract, respiratory system

INTRODUCTION

Many chemicals are used cleaning purposes and many household purposes[1]. These chemicals are some-times misused in developing countries, mostly adults ingest these chemicals with the intension of suicide[2].

The problem of corrosive ingestion is more serious in adults because suicidal attempts are made with these chemicals rather than accidental. Mortality rates with these corrosive ingestion varies between 10-15% but most often when ingestion is for suicidal purpose mortality rate can rise upto 78% even[3].

Corrosive ingestion can cause damage to the oropharyngeal and gastric mucosa of varying intensity that ranges from minor burns to full thickness injury and even necrosis[3].

Various studies conducted in the past have shown that an on endoscopic examination and X-ray of the patient with acute corrosive poisoning have normal findings in 16(43.2%), edema and hyperemia in 11(29.7%) and stenosis of whole stomach in 7(18.9%). Stenosis of antrum and corpus in 2(5.4%) and 1(2.7%) patient shown stenosis of lower end of stomach (pyloris).

The rationale of the study is that the previous study was conducted on a small sample size and locally no data is available on this issue, this study will generate the primary data which will be helpful for creating awareness regarding pathological presentation of stomach in patients with corrosive intake.

The objective of the study was to find out the frequency of clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital.

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MATERIAL AND METHODS

Cross sectional survey was conducted in East surgical ward, Mayo Hospital, Lahore for a period of six months from: 25-07-2015 to 24-01-2016. 222 cases were included in the study who were presenting in the Surgical Department, Mayo Hospital, Lahore. Non probability consecutive sampling technique was used. Permission was sought from the Ethical Committee of Mayo Hospital, Lahore.

Inclusion Criteria

- All patients with diagnosis of corrosive intake presented in surgical emergency (as per operational definition)
- Age between 15-50 years
- Gender: Male/Female

Exclusion Criteria

- All patients with the history of hyperemia and edema, stenosis of antrum, corpus and pylorus, stenosis of antrum and corpus and stenosis of pylorus like disease

- Acid peptic disease
- Carcinoma of stomach

Data collection procedure: The data was collected from the patients admitted on surgical floor of Mayo hospital Lahore through outpatient department, emergency, referred by other hospitals of Lahore City, with diagnosis of corrosive intake fulfilling the inclusion criteria and exclusion criteria [1]. Informed consent was taken after explaining data collection procedure to the patient and was taken into the confidence. Age, sex, clinical presentation (normal finding, hyperemia and edema, stenosis of antrum, corpus and pylorus, stenosis of antrum and corpus and stenosis of pylorus) was noted on. Upper GI endoscopy was performed by same consultant. A pre-designed Proforma was used to record all relevant data.

Data analysis: With the help of SPSS version 13 data was tabulated and analyzed. For (age) quantitative variables, standard deviation and mean was calculated. All qualitative variables (normal finding, gender, hyperemia, edema, stenosis of antrum, corpus and pylorus, stenosis of antrum and corpus) percentages, frequencies and proportions were calculated. Data was stratified for age, gender, type of corrosive (alkali, acid, chlorine bleach), amount of corrosive (10 ml to 250 ml)[1]. Chi-square test was applied post stratification with P-value ≤0.05 considered as considered as significant.

RESULTS

After fulfilling the exclusion and inclusion criteria 222 cases were enrolled for the determination of the frequency of clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital. Patients were distributed according to age of the patients, it shows 92(41.82%) were between 15-35 years of age while 58.18% of the cases were between 36-50 years of age, Mean±SD was 35.26±7.17 years (Table 1).

Among all female are 118(53.69%) and males were 46.36 (4.102%) (Table 2).

Frequency of clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital was recorded as 81(36.82%) had normal findings, 58(26.36%) had hyperemia and edema, 29(13.18%) had stenosis of antrum, 43(19.55%) had corpus and pylorus while 9(4.09%) had stenosis of antrum and corpus (Table 3).

The data was stratified for age, gender, type of corrosive (alkali, acid, chlorine bleach), amount of corrosive (10ml to 250ml) (Table 4).

Table 1: Distribution of patients by age (n=222)

Age (in years)	n	%age
15-35	93	41.82
36-50	129	58.18
Total	222	100%
Mean±SD	35.26±7.17	

Table 2: Gender distribution by criteria (n=222)

Gender	n	%age
Female	120	53.64
Male	102	46.36
Total	222	100

Table 3: Clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital by frequency (n=222)

Clinical Presentation	n	%
Normal Finding	81	36.82
Hyperemia and edema	58	26.36
Stenosis of antrum	30	13.18
Corpus and pylorus	43	19.55
Stenosis of antrum and corpus	10	4.09
Total	222	100

Table 4: Stratification for frequency of clinical presentations of stomach in patients with corrosive intake with regards to age

Clinical Presentation	Age (in Years)	
	15-30	31-50
Normal Finding	24	58
Hyperemia and edema	20	38
Stenosis of antrum	04	26
Corpus and pylorus	15	28
Stenosis of antrum and corpus	04	05
Total	67	155

P value: 0.121

DISCUSSION

Corrosives are the chemicals agents that causes tissue injury when comes in contact with a tissue by a chemical reaction. They commonly affect gastrointestinal tract (GIT), respiratory system and eyes. Corrosive agent's exposure continues to be a leading toxicological source of injury. A large number and varieties of chemical agents are available in all homes for cleaning purposes and these are usually responsible for accidental and intentional poisoning

This study was planned with the view that the previous studies are conducted on a small sample size and locally no data is available on this issue, however, this study may generate the primary data which will be helpful for creating awareness regarding pathological presentation of stomach in patients with corrosive intake.

In our study, 92(41.82%) were between 15-35 years of age while 58.18% of the cases were between 36-50 years of age, mean+SD was calculated as 35.26+7.17 years, 102(46.36%) were male and 119(53.64%) were females. Frequency of clinical presentations of stomach in patients with corrosive intake presenting in a tertiary care hospital was recorded as 81(36.82%) had normal findings, 58(26.36%) had hyperemia and edema, 13.180/0 (n-29) had stenosis of antrum, 43(19.55%) had corpus and pylorus while 9(4.09%) had stenosis of antrum and corpus.

Previous data recorded that patients with acute corrosive poisoning, on X-ray and endoscopic examination of the stomach revealed normal finding in 17(43.2%) of the patients, edema and hyperemia in 11(29.7%), stenosis of pylorus, corpus and antrum in 8(18.9%), stenosis of corpus and antrum in 2(5.4%) and stenosis of pylorus in 1(2.7%) patients,' our findings are in agreement with the above study.

Coexistent gastric injury in the literature ranges from 20% to as high as 62.5%, extending from 20% to 62.5% ranging from simple hyperemia & erosions to diffuse transmural necrosis.48'5° Delayed gastric emptying with consequent accumulation of food in the stomach due to (mostly stenosis of the antropyloric region) Causes mostly

associated with acute corrosive gastric burn is abdominal pain, vomiting, and hematemesis. Sometimes, gastric perforation, which tends to present a few days after cor ingestion. Gastric perforation, early or delayed, carries a significant mortality, and is more rarely reported in children. Clinical examination and computed tomography (CT) scan are useful than endoscopy in assessing threatened or existing perforation. Bleeding following corrosive ingestion is usually self-limiting: though massive hemorrhage from the stomach or duodenum has been reported a short time after corrosive ingestion, severe bleeding typically occurs at 2 week after ingestion.

The hydrochloric acid (more than 50%), is easily accessible as a sanitary cleansing agent in our setup. So most commonly abused in countries like Pakistan, India and Taiwan as compared to the USA & other developing countries where its abuse is less than 5%. Gastric stenosis is more common with HCL and in few cases of esophageal stenosis have been described also. In addition to hydrochloric acid, with sodium hypochlorite has also been absorbed ($NaCI_4$,), so is used in combination with hydrochloric acid for cleaning sanitary facilities etc. It rarely causes severe injuries of the upper gastrointestinal tract. Rarely observed are also severe injuries with acidic acid.

We found very limited data showing the complications included in our study, however, different studies recorded different type of injuries. However, our data is primary in our setup and we some other studies should be carried out to record these complications so that research based awareness in patients and health care professionals as well may be created which will be helpful to manage these complications and to avoid ingestion of corrosive agents.

CONCLUSION

We concluded that Hyperemia and edemia are the most common clinical presentations of stomach in patients with corrosive intake followed by Corpus and pylorus and stenosis of antrum.

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