AETIOLOGY OF UPPER GASTROINTESTINAL HAEMORRHAGE-AN ENDOSCOPIC STUDY

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ABSTRACT

610 patients of upper gastrointestinal haemorrhage were endoscoped over a period of eleven years from July 1985 to June 1996. Average age of the patients was 39.2 years. 82.6% were males and 17.4% were females. Duodenal ulcer (31.5%), erosive mucosal disease (30.8%), oesophageal varices (31.5%) and gastric ulcer (6.2%) were the major causes. Other causes included Mallory Weiss syndrome (10 patients), gastric polyp (3 patients), stomal ulcer (5 patients) and self-induced bleeding (3 patients). Multiple lesions responsible for bleeding were detectable in 6.6% of patients. Endoscopy was non-contributory in 50 (11.2%) patients. Haemorrhage was the first presentation in 8.5% patients of duodenal ulcer. A known ulcerogenic agent in 21% of duodenal ulcer cases precipitated the bleeding. 77.4% of duodenal ulcer patients responded to conservative management. Erosive gastritis (57.5%) was the commonest finding in the erosive mucosal group. Alcohol and analgesics were the major precipitating factors in these patients. Majority of oesophageal varices were treated by sclerotherapy. Mortality (20%) were highest in the oesophageal varices group.

MJAFI 2000, 56 : 188-191

KEY WORDS : Endoscopy; Upper gastrointestinal haemorrhage.

Introduction

Endoscopy done within the first twenty-four hours of the bleed is the most dependable means of establishing the source of upper gastrointestinal haemorrhage (UGIH). A number of studies have been done in the Western countries to determine the causes of UGIH [1-4]. Few studies have been done in India in both pre and post endoscopic era [5,6]. Duodenal ulcer and oesophageal varices have been the most important causes reported from India. Whereas erosive mucosal disease of the gut has been reported to be important in U.S.A. [7]. We conducted a study to determine the causes and outcome of patients of UGIH reporting to gastroenterology centres of tertiary care hospitals in India.

Material and Methods

This study was carried out over a period of eleven years from July 1985 to June 1996 in three gastroenterology centres Delhi, Lucknow and Pune. The study was cross sectional, done sequentially and not concurrently in these centres. A total of 610 adult patients presenting with UGIH were endoscoped. Patients with occult haemorrhage were excluded. Resuscitation was done prior to endoscopy. Detailed history and clinical examination was recorded in all cases. Special care was taken to obtain history of previous bleeds, use of salicylates, steroids, non-steroidal anti-inflammatory drugs (NSAID) and alcohol. Signs and symptoms of peptic ulcer, cirrhosis of liver and portal hypertension were looked for. After resuscitation and physical examination an UGI endoscopy was performed to detect the cause of the bleeding. Once the cause was detected, investigations and treatment were per-

formed accordingly. Mortality occurring during the same admission was recorded.

Results

A total of 610 cases were studied thus giving an average of 56 patients per year. Out of these 503 (82.6%) were males. The average age was 39.2 years with a range of 9-76 years. Majority (86.2%) presented with a combination of haemetmesis and melaena. 11.5% presented with melaena only, whereas 2.2% had only haemetmesis. 335 (74.5%) patients were endoscoped within 24 hours, in others the endoscopy was delayed for 1 to 4 weeks. The aetiologic spectrum of UGI haemorrhage is shown in Table-1. 192 patients (31.5%) had duodenal ulcer that was bleeding. Characteristics of patients with bleeding duodenal ulcer are depicted in Table-2. Majority of patients in this group belonged to the age group 20-50 years. In 152 (79%) patients no precipitating cause for haemorrhage was detected. History of intake of NSAID prior to onset of haemorrhage was available in 14%. 148 (77.4%) patients were treated conservatively with H2 Blockers given parenterally. 32 (22.6%) patients had to be subjected to emergency surgery in view of continued bleeding. There was no mortality in this group.

100 patients had variceal bleed (Table-3). The age group of patients ranged from 9 to 68 years. In 10% of patients, there was history of prior NSAID intake. 60.8% were cirrhotics, 33.7% non-cirrhotic portal fibrosis (NCPF) and 5.5% cases had extra hepatic portal hypertension (EHPH). 60 patients (81%) of oesophageal varices were treated with endoscopic sclerotherapy using ethoxy sclerol (1.5%). Immediate mortality was 20.2% in this group. Out of the fatal cases four died of uncontrolled haemorrhage, whereas eleven died of liver cell failure.

188 patients had erosive mucosal disease (Table-4). In this group patients of age 12 to 76 years were seen. Erosive gastritis accounted for 52.5% of these cases. Nineteen (10%) patients had

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bile reflux gastritis as a result of prior gastrojejunostomy. NSAID was the major precipitating factor. History of alcohol intake prior to UGI haemorrhage was available in 18 patients. Six patients had history of combined intake of alcohol and NSAID prior to onset of bleeding. In three cases ingestion of sharp foreign bodies was the cause of erosions, whereas in five cases bleed followed heavy physical activity and on endoscopy gastric erosions were detected

TABLE 1

Aetiological pattern of upper gastrointestinal haemorrhage (n = 610)

Disease	No. of patients	Percentage
Duodenal ulcer	192	31.5
Erosive mucosal disease	188	30.8
Oesophageal varices	100	16.4
Gastric ulcer	38	6.2
Miscellaneous	24	3.3
Mallory-Weiss tear	10	
Oesophageal ulcer	3	
Stomal ulcer	5	
Gastric polyp	3	
Self induced	3	
No lesion detected	68	11.2
Multiple lesions	40	6.6

TABLE 2

Characteristics of patients with bleeding duodenal ulcer (n = 610)

Parameter	No. of patients	Percentage
Total number	192	31.5
Males	181	95.0
Females	11	5.0
Asymptomatic bleed	16	8.5
Conservative therapy	148	77.4
Emergency surgery	44	22.6
Precipitating factor	40	21.0
Average age	39.7 years	
Mortality	Nil	

TABLE 3

Characteristics of patients with bleeding oesophageal varices (n = 100)

Parameter	No. of patients	Percentage
Total number	100	16.4
Average age	36 years	
Males	93	93.0
Females	7	7.0
Precipitating factor identified	10	10.0
Treated with		
Sclerotherapy	81	81.0
Conservative therapy	17	17.0
Emergency surgery	2	2.0
Aetiology		
Cirrhosis	61	61.0
NCPF	35	35.0
EHPH	4	4.0
Mortality	20	20.0

to be the cause of haemorrhage. Twenty-four patients had associated illness like septicemia, uraemia, fulminant hepatitis and terminal malignancy. In thirteen patients (9.3%) of erosive mucosal disease, the haemorrhage was spontaneous without history of any of the above factors. Majority of these cases were managed con-

TABLE 4

Characteristics of patients with bleeding erosive mucosal disease (n=188)

Parameter	No. of patients	Percentage
Total number	188	30.8
Average age	40 years	
Males	153	81.2
Females	35	18.8
Precipitating factor present	170	90.7
Conservative therapy	182	96.6
Emergency surgery required	6	3.6
Aetiology		
Erosive gastritis	108	57.5
Duodenitis	40	21.5
Oesophagitis	21	20.0
Post-GJ gastritis	19	10.0
Precipitating factors		
Analgesics	82	48.2
Associated illnesses	31	18.2
Alcohol	24	14.1
Steroids	10	5.7
Alcohol and analgesics	8	4.8
Heavy physical exertion	5	3.0
Unknown	10	6.0

TABLE 5

Characteristics of patients with bleeding gastric ulcers (n = 38)

Parameter	No. of patients	Percentage
Total number	38	6.2
Average age	46.6 years	
Males	36	93.0
Females	2	7.0
Benign	30	78.5
Malignant	8	21.5
Conservative therapy	27	71.4
Emergency surgery	11	28.6
Mortality	3	7.8

TABLE 6

Characteristics of patients with combined lesions (n = 40)

Parameter	No. of patients	Percentage
Total number	40	6.6
Oesophageal varices and gastritis	11	27.5
Gastritis and oesophagitis	9	22.5
Erosive gastritis and duodenitis	8	20.0
Oesophageal varices and oesophagitis	7	17.5
Oesophageal varices and duodenal ulcer	5	12.5

servatively with heavy doses of liquid antacids and H₂ blockers. Five patients were subjected to surgery in view of continued bleeding. Overall mortality in this group was 10.7% and mainly included terminally ill patients.

38 patients (6.2%) had gastric ulcer. Characteristics of these patients are depicted in Table-5. All gastric ulcers were biopsied at the time of initial endoscopy and 78.5% of the lesions were benign. Conservative management with H₂ blockers showed good results in 71.4% patients. 28.6% of patients required surgery.

Table-6 shows frequency and pattern of combined lesions as a cause of UGI haemorrhage. Oesophageal varices along with gastritis or oesophagitis were present in thirteen cases. Four cases of oesophageal varices had associated duodenal ulcer. In the rest of thirteen patients combination of various erosive mucosal disease was present.

Endoscopy was non-contributory in fifty (11.5%) cases. Immediate endoscopy was possible in only ten cases, whereas in 80% it was delayed for 1-4 weeks after the onset of bleeding. Of the ten cases that were bleeding actively and endoscopy was non-contributory, four recovered on conservative therapy whereas six underwent surgery. The diagnosis after the surgery was gastric ulcer (2 patients), gastric erosions (2 patients) and post-bulbar duodenal ulcer (1 patient). In one case no diagnosis could be made after laparotomy.

Discussion

UGI haemorrhage is a major emergency encountered in gastroenterology practice and leads to a lot of morbidity and mortality even in the best of centres. In the Armed Forces it has a special relevance, because of different working conditions and leads to wastage of trained manpower. Moreover, modern diagnostic and therapeutic services may not be available in the far-flung and remote areas of the Armed Forces. It therefore poses special problems.

Endoscopy was possible in 454 patients within first twenty-four hours of the bleed. In 156 patients endoscopy was done after a delay of 1-4 weeks, because they were referred from other hospitals. Only telltale evidence on endoscopy in 75 of these patients identified source of bleeding. Year-wise incidence of UGI haemorrhage was 56 patients per year. Other workers have noted similar yearly incidence [5,7]. Average age of our patients was 39.2 years as compared to 42 years reported by other workers in India [5]. The youngest patient was 9 years old and the oldest was 76 years old. Age reported in western studies is higher. Male to female ratio of our study is 4.7:1 is much higher than reported [5,7]. These differences are due to the younger age and male preponderance of patients reporting to us.

Duodenal ulcer, erosive mucosal diseases and oesophageal varices were the three main causes of UGI haemorrhage accounting for 78.7% of all patients. Similar findings have been reported by a national sur-

vey of 2225 patients of upper gastrointestinal bleeding in USA in 1981 [4]. An Indian study has reported oesophageal varices (45.5%) as the major cause and found erosive mucosal disease in only 8.5% of their patients [6]. Gastric ulcer accounted for only 6.2% of our patients compared to 21.9% reported in U.S.A. [4]. Mallory-Weiss syndrome, oesophageal ulcers and stomal ulcers were the other causes identified in this study. The incidence of Mallory Weiss syndrome is much lower in our study than about 7.2% reported in the west. This may be related to difference in alcohol and analgesic use between the two populations. It is possible that some cases of Mallory Weiss tear, acute erosions and acute ulceration could have been missed due to delay in endoscopy in some of our cases. Three of our patients had self-induced bleed by causing injury to buccal mucosa or drinking red ink.

Combined lesions (6.6%) responsible for bleeding have also been reported by other Indian study [5]. Western studies have described bleeding from multiple sites in much higher percentage of patients [8,9]. We found oesophagitis, gastritis and duodenal ulcer coexisting with oesophageal varices but active bleeding was from varices in all except three patients where it was due to gastritis or duodenal ulcer. In studies from the west, as many as 38-68% of patients are reported to bleed from lesions other than the co-existing varices [10,11]. Endoscopy was non contributory in 11.5% of our patients. 80% of these underwent endoscopy after a delay of 1-4 weeks. It is possible that mucosal lesions were missed in these patients. However in the other 20% endoscopy was performed during the bleed and still no cause could be found.

Bleeding as the first manifestation of duodenal ulcer was seen in 8.5% of our patients as compared to 20% reported in literature [12]. No precipitating cause was identified in majority (79%) of these patients. 22.6% of these patients required emergency surgery and others were managed conservatively. There was no mortality due to bleeding duodenal ulcer in our series. The actual incidence of erosive mucosal diseases may be higher than the 30.8% found by us, because of delay in endoscopic examination in 25.5% of our patients. Erosions are well known to heal quickly. NSAIDs alone, alcohol alone and a combination of these two were the major precipitating causes. In three patients erosions were caused by foreign bodies-fish bone, sewing needle and a screw being the offending agents. Erosive gastritis, duodenitis and oesophagitis in various combinations were seen in seventeen of our patients. Patients with erosive mucosal disease without major underlying illness had good prognosis with con-

servative treatment. Cirrhosis of liver was the major cause of oesophageal varices in our study. The other Indian study found non-cirrhotic portal fibrosis and extrahepatic portal hypertension as the major causes of varices [6]. Majority of our patients were adults in whom these diseases are not common. Immediate mortality was highest in the group with oesophageal varices. Majority (81%) of the patients were treated by endoscopic sclerotherapy. No emergency shunt procedures were done. Two patients who underwent emergency ligation of the varices did not survive.

The most important cause of endoscopy being non-contributory in UGI haemorrhage in our study was delay in performing the endoscopy as this facility is available in few centres only. It takes several days to reach the gastroenterology centre sometimes.

We conclude that upper Gastro-intestinal haemorrhage is an important cause of morbidity in younger age. Majority of the causes are treatable or preventable. Bleeding in patients of duodenal ulcer and erosive mucosal disease can be prevented by careful and properly indicated use of analgesics rather than indiscriminate use. Early endoscopy preferably within the first 24 hours of the bleed is recommended.

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