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Prospective analysis of 500 cases of upper gi endoscopy at Tata Main Hospital

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Abstract:
Introduction*: Flexible endoscopy is most commonly used & sensitive technique for early diagnosis of patients presenting with upper GI (gastrointestinal) symptoms & has got therapeutic potentials also.*
Aim of the study*: Prospective analysis of 500 cases of upper GI endoscopy done at Tata main hospital to know about its diagnostic efficacy and prevalence of H. (helicobacter) pylori in upper GI diseases.*
Materials & methods*: a prospective study was conducted in the department of surgery at Tata main hospital from Aug07 to Aug09. All patients presenting with various upper GI symptoms such as dyspepsia, dysphagia, haematemesis, malaena, recurrent vomiting & features of gastric outlet obstruction underwent endoscopy on OPD basis & data analysed.*
Results*: Among the 500 cases,53.2% had duodenitis,48.2% had gastritis,18.6% had duodenal ulcer,6.6% had gastric ulcer,21.4% had erosive duodenitis & gastritis,15.6% had esophagitis,8.4% had esophageal varices,1.2% had duodenal polyps,2.2% had ca esophagus,2.8% had ca stomach & 1.4% had hiatus hernia. Among the 322 cases sent for crush smear for H.pylori 67.4% were positive and 2.4% of the H. pylori positive cases had failure of the triple regimen therapy.*
Conclusion*: In our series the most frequently detected upper GI lesions were duodenitis & gastritis and the incidence of H.pylori positive cases were comparable to those of international studies.*
Key words*: Efficasy, endoscopy, helicobacter pylori, prevalence, prospective.*

I. Introduction:

Upper gastrointestinal endoscopy is now a routine procedure which has superseded the barium meal as the primary diagnostic tool and the evidence is clear that endoscopy is superior to barium X-ray & ultrasound to study the organs of the upper abdomen as they do not allow for a direct viewing of the esophagus, stomach & duodenum. Duodenoscopy allows direct cannulation of the papilla of vater for cholangiography & pancreatography (ERCP). The whole colon can be examined & methods are available for small intestinal endoscopy. Tissue specimens can be removed from all of these areas under direct vision using biopsy forceps, cytology brushes & snare loops. Several therapeutic endoscopic techniques have been developed that allow endoscopists to treat bleeding lesions and , in some centres , relieve esophageal obstruction caused by cancer by means of laser phototherapy and dilatation of esophageal strictures . endoscopic placement of gastric feeding tube i,e percutaneous endoscopic gastrostomy (PEG) has largely replaced surgical gastrostomy[1]. Upper gastrointestinal endoscopy is now commonly done in many centres by general surgeons and our team in the surgical unit of Tata Main Hospital, is doing about 1000 cases (including therapeutic procedures) of endoscopy for various reasons in a year.

II. Historical Background:

Gastrointestinal endoscopy has been attempted for over 200 years, but the introduction of semirigid gastroscopes in the middle of the twentieth century marked the dawn of the modern endoscopic era[2].

The first approach to gastrointestinal tortuosity was an instrument with articulated lenses and prisms proposed by Hoffmann in 1911.The real breakthrough was the discovery that images could be transmitted using flexible quartz fibres. Although this was first described in the late 1920's it was not until 1954 that Hopkins built a model of a flexible fibre imaging device. The availability of highly transparent optical quality glass led to the development in 1958 of the first fibreoptic gastroscopy by Larry Curtiss, a graduate student in physics and Basil Hirschowitz, a trainee in gastroenterology[3].

III. Objective:

The aim of the study was the evaluation of upper GI endoscopy in terms of indication, diagnostic efficacy and diseases diagnosed. Our aim was also to detect and correlate the prevalence of helicobacter pylori with upper GI diseases and to compare the rate of identification of helicobacter pylori in endoscopically normal gastric mucosa with that in peptic ulcer disease or gastric malignancy.

IV. Materials & Methods:

A prospective analysis of five hundred cases of upper GI endoscopy was done at the endoscopy unit , department of General Surgery, Tata Main Hospital, Jamshedpur. Endoscopies were performed with the OLYMPUS CV70 and there were no separate instrument for the paediatric patients. Both indoor and outdoor patients of age more than 10 years irrespective of their sex and residence were considered for the study. Patients coming to the OPD or getting admitted with various upper GI symptoms were interviewed, examined and investigated when required before proceeding for upper GI endoscopy. All suspicious lesions on endoscopy were subjected to rapid urease test for helicobacter pylori detection. To see the urease activity a solution was prepared by adding 1-2 drops of freshly prepared 2 gm% urea into a solution 3.12 gm% of monosodium dihydrogen phosphate (1 in 20 dilution) and 3.56 gm% of disodium monohydrogen phosphate (1 in 20 dilution). The exclusion criterias were: (i) Age less than or equal to 10 years (ii) uncooperative / unfit patients for endoscopy (iii) patients having diseases like recent MI, severe asthma, disturbed sensorium.

V. Statistical Analysis:

Data was analysed by doing z test to see for the difference between two means and proportion test to test the significance between two variables. The mean and standard deviation were calculated using the standard statistical formulas. $P<0.05$ was considered significant.

VI. Figures & tables:

Table 1: age & sex distribution of the patients:

Age in years	Total no. of patients		No. of male		No. of Female	
	No. of patients	Percentage	No. of male	Percentage	No. of Female	Percentage
10 – 20 years	15	3%	7	2.72%	8	3.29%
20 – 30 years	49	9.8%	20	7.78%	29	11.93%
30 – 40 years	76	15.2%	42	8.4%	34	13.99%
40 – 50 years	123	24.6%	68	13.6%	55	22.63%
50 – 60 years	128	25.6%	60	12%	68	27.98%
60 – 70 years	68	13.6%	37	14.40%	31	12.76%
70 – 80 years	35	7%	19	7.39%	16	6.58%
80 – 90 years	5	1%	3	1.17%	2	0.82%
90– 100 years	1	0.2%	1	0.39%	0	0%

Table 2: The clinical profile of the patients

Symptoms Seen	No. of patients	Percentage
Epigastric pain	179	35.8%
Esoplageal reflux symptoms	33	6.6%
Dyspepsia	38	7.6%
Vomiting	37	7.4%
Dysphagia	33	6.6%
Upper G.I. Bleeding	51	10.2%
Unexplained anaemia	24	4.8%
Post gastric,gallbladder or colonic surgery	28	5.6%
Dyspepsia,anorexia,wt.loss	8	1.6%
Rest	69	13.8%

Table 3: The incidence of helicobacter pylori positivity against different diagnosis

Diagnosis	Total no of cases (%age)	No. of positive HP cases	No. of negative HP Cases	Percentage
Duodenal Ulcer	93 (18.6)	76	17	81.72%
Erosive Gastritis	52 (10.4)	41	11	78.85%
Erosive Duodenitis	55 (11)	40	15	72.73%
Duodenitis	266 (53.2)	182	84	68.42%
Gastritis	241 (48.2)	168	73	69.71%
Gastric Ulcer	33 (6.6)	20	13	60.61%
Reflux esophagitis	78 (15.6)	44	34	56.41%
Gastric Cancer	14 (2.8)	8	6	57.1%
Normal UGIE	66 (13.2)	17	49	25.76%

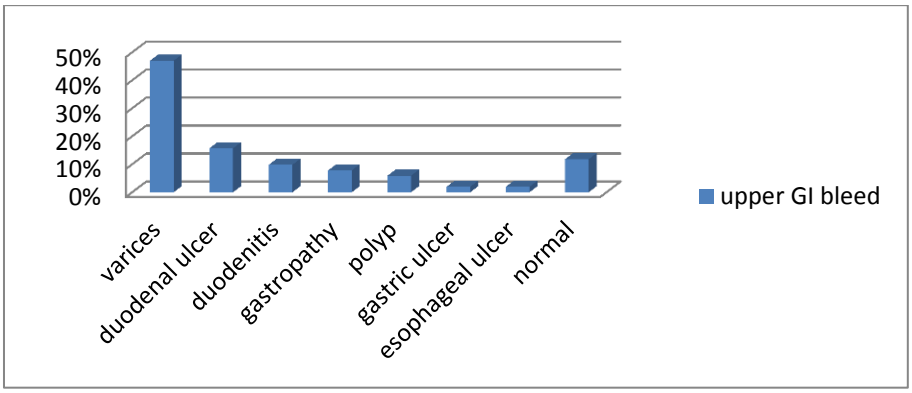

Figure 1: showing the prevalence of upper GI bleed

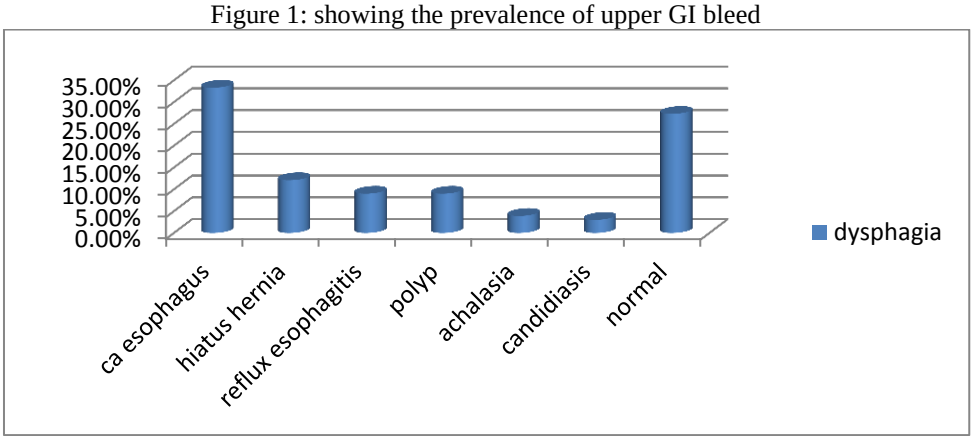

Figure2: showing the prevalence of dysphagia

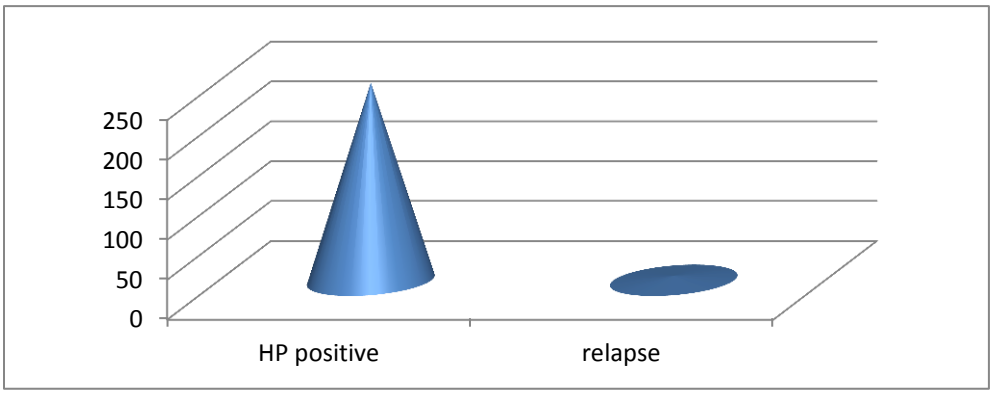

Figure 3: showing the triple regimen failure cases

VII. Results:

500 patients with different upper GI symptoms were studied and analysed during the period from August 2007 to August 2009. Out of these patients majority (n=251) belong to the age group of 40 –60 years while only 6 patients were more than 80 years of age & only 15 patients were below the age of 20 years. There was only slight male preponderance. There were 257 males in the study in comparison to 243 female patients. The mean age of the males was 48.03 ± 15.18 and females 47.23 ± 15.05 years as in table1.

In a collective review of the cases reported during the study , out of all the symptoms, epigastric pain was the most common symptom seen in 35.8% (n=179) of the patients. Other symptoms in the decreasing order of frequency were esophageal reflux symptoms 6.6% (n=33), dyspepsia 7.6% (n=38), vomiting 7.4% (n=37), dysphagia 6.6% (n=33) , upper GI bleeding 10.2% (n=51), unexplained anaemia 4.8% (n=24), post gastric, gallbladder or colonic surgery 5.6 % (n=28), dyspepsia+anorexia+wt.loss 1.6% (n=8) as in table2.

Duodenitis (53.2%) , gastritis (48.2%) , duodenal ulcer (18.6%) , reflux esophagitis (15.6%) were the commonest diagnoses found in our study. Out of the patients subjected for endoscopy 86.8% of the cases had

one or more organic lesions detected while 13.2% were normal . Among the 500 cases mucosal specimen taken from the antrum in 366 (73.2%) patients and were subjected to rapid urease test & 247 cases (67.4%) came out to be positive for helicobacter pylori & were subsequently prescribed triple regimen eradication therapy for one week. The overall prevalence of helicobacter pylori infection in duodenal ulcer was 81.7%, in erosive gastritis 78.8%, in erosive duodenitis 72.7%, in gastritis 69.7%, in duodenitis 68.4%, in gastric ulcer 60.6%, in gastric cancer 57.1%, in reflux esophagitis 56.4% and 25.7% in patients with normal upper GI endoscopy. There was statistically significant difference ($p<0.05$) on the basis of h. pylori prevalence in different cases shown in table3.

Among the 51 (10.2%) patients with upper gastrointestinal bleed the most commonly detected lesion is esophageal varices i,e 24 cases (47%) followed by others lesions like duodenal ulcer (n=8, 15.7%), duodenitis (n=5, 9.8%), congestive gastropathy (n=4, 7.8%), polyp (n=3, 5.9%), gastric ulcer (n=1, 1.96%), esophageal ulcer (n=1, 1.96%) as shown in fig1. In 6 cases (11.8%) of upper GI bleed no cause could be found out.

Among the 33 cases (6.6%) of dysphagia shown in fig2, the most commonly detected lesion was carcinoma esophagus (n=11, 33.3%) followed by other lesions like hiatus hernia (n=4, 12.1%), reflux esophagitis (n=3, 9%), polyp (n=3, 9%), achalasia (n=2, 3.9%), esophageal candidiasis (n=1, 3%). In 9 cases (27.3%) of dysphagia no significant cause could be found out and were lebelled as functional dysphagia.

Among the 247 positive cases of helicobacter pylori infection only 7 cases (2.8%) presented with persistent upper gastrointestinal symptoms and 6 cases (2.4%) were found out to be positive for helicobacter pylori again and were considered failure of the triple regimen as shown in fig3.

VIII. Conclusion:

Upper GI endoscopy is an effective procedure with epigastric pain evaluation is the commonest indication in our study. The diagnostic yield of the endoscopy is undoubtedly very high if the patient selection is done in a meticulous way. The normal endoscopy rate is unduly high and needs to be reduced by rigorous screening of the patients. Helicobacter pylori infection is significantly correlated with peptic ulcer disease and there is high cure rate of the infection following triple regimen therapy.

IX. Discussion:

Rand study on the use & misuse of upper gastrointestinal endoscopy proclaims that one of six upper gastrointestinal endoscopies is inappropriate[7]. In our study the percentage of negative endoscopies in outdoor patients also suggests the same (i,e almost one in five patients) . In our series the most common indication for endoscopy was epigastric pain (35.8%) which is comparable to the study performed at the Lahey clinic endoscopy unit[10]. The dominance of nonspecific mucosal disease i,e duodenitis (53.2%) and gastritis (48.2%) over mucosal ulceration (gastric ulcer 7.6% and duodenal ulcer 18.6%) which prevails in our study is comparable to the results of the endoscopy done in 52 of the 200 consecutive patients in the Lahey clinic endoscopic unit. Oesophageal varices (47%) were the commonest cause of upper gastrointestinal bleeding detected in our series. Other important causes were duodenal ulcer (15.7%) , duodenitis (9.8%) , congestive gastropathy (7.8%) & polyp (5.9%), gastric ulcer (1.96%), esophageal ulcer (1.96%). Reports from the western countries indicate that even though duodenal ulcer is a leading cause of upper gastrointestinal haemorrhage , it is rivaled by other causes like gastric ulcer , gastritis and oesophageal varices. In 33 patients evaluated for dysphagia, 24 patients had organic lesion and no anatomical lesion was found in the remaining 9 of these patients. Among organic lesions , oesophageal carcinoma was the most common lesion (n=11, 33.3%) and other lesions were sliding hernia (4), oesophageal polyp or submucosal lesion (3), oesophagitis (3) and achalasia (2) and lastly oesophageal candidiasis (1). In our study, the prevalence of the helicobacter pylori infection in patients with endoscopic diagnosis of gastritis, duodenal ulcer, gastric ulcer and normal mucosa was 69.7%, 81.7%, 60.6% & 25.8% respectively which is in comparison to the study by Hashemi etal (2006) published in world journal of gastroenterology[18]. On the contrary the prevalence is less in comparison to the western literature according to which it is now believed that 90% of duodenal ulcers and roughly 75% of gastric ulcers are associated with helicobacter pylori infection[19].

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