Original article

A study of clinico-endoscopic profile of patient presenting with dyspepsia

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ABSTRACT

Introduction: Dyspepsia is a common clinical symptom with prevalence of 5–20% of Outpatient (OPD) consultation at tertiary care hospital. The cause is not detectable in more than half of the patients. The common organic causes include peptic ulcer, esophagitis, and malignancy.

Aim: To study the clinical profile of patient presenting with dyspepsia in a tertiary care hospital of Assam, and correlate with endoscopic findings.

Materials: This is a hospital based observational study conducted over an year. Adult patient with dyspepsia was included after informed consent. Clinical data and endoscopic findings of patients with dyspepsia were collected with the help of a structured questionnaire.

Results: 158 patients with dyspepsia were assessed by Upper gastrointestinal (UGI) Endoscopy. Mean age of patient was 40.04 ± 14.3 . 70.8% patients were males. 15.19% had history of smoking, 50.06% had history of tobacco consumption, 38.61% were alcoholic and history of NSAID consumption was seen in 9.49%. Alarm symptoms such as weight loss, anemia, UGI bleed were observed in 18.35% patients. Endoscopy revealed normal findings in 43.67% patients. Significant endoscopic findings were diagnosed in 56.32% patients. These included Peptic Ulcer in 25.95%, esophagitis in 4.43%, and UGI malignancy in 3.16%. Other significant lesions constituted less than 2%. Incidence of UGI malignancy was higher in patients more than 50 years. On comparing the endoscopic findings in patients of dyspepsia with alarm symptoms to those of dyspepsia without alarm symptoms, a statistical significance was observed with a p value of 0.013.

Conclusion: In patients with dyspepsia presence of alarm symptoms is more significantly associated with organic lesion on endoscopy. Though the incidence of malignancy was low, endoscopy in patients more than 50 years may help in early diagnosis and reduced morbidity of these patients.

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1. Introduction

Dyspepsia is chronic or recurrent pain or discomfort centred in the upper abdomen.¹ Dyspepsia is derived from the Greek words 'dys' and 'pepsis' and literally means "difficult digestion." The Rome III criteria defined symptoms of dyspepsia as one or more of the following symptoms – Postprandial fullness, early satiety, epigastric pain or burning and no evidence of structural disease that is likely to explain the symptoms [Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis].^{2,3}

Dyspepsia accounts for 4–5% of general practitioner consultation and 20–40% of gastroenterological consultation.⁴ In studies of Asia, dyspepsia is more common in younger age group. A study from urban Mumbai, India found that dyspepsia was more prevalent in adults >40 years.⁵ The data regarding clinical profile of dyspepsia in North east India where there is a significant consumption of tobacco and smoking is lacking.

Patients with 'alarm' symptoms,⁶ younger patients unresponsive to empirical treatment⁶ and those over 55 years old with new onset dyspepsia,⁶ require prompt investigation to exclude serious gastrointestinal disease. Alarm features include weight loss, anaemia, vomiting, haematemesis, melaena and dysphasia. Endoscopy can help in early diagnosis and treatment of dyspepsia as well as early detection of malignancy in patients with dyspepsia and thus reducing the morbidity and a better outcome.

This study was intended with the following aim and objective:

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- To study the clinical profile of patient presenting with dyspepsia in a tertiary care hospital of Assam, and correlate with endoscopic findings.
- To determine whether alarm features are adequate to predict the need for endoscopy.

2. Methodology

The study was undertaken in Department of Medicine, Assam Medical College and Hospital, Dibrugarh during the period from July 2014 to June 2015. It is a Hospital based observational study. Patients of dyspepsia with or without alarm symptoms were screened. Out of the 426 patients, 158 were found eligible and gave consent to be included in the study. Upper Gastrointestinal (UGI) endoscopy was done in the 158 patients. Endoscopic biopsy and histopathological examination were performed in 8 patients with suspicion of malignancy.

2.1. Inclusion criteria

Patients age >18 years presenting with dyspeptic symptoms (for more than 3 months with symptom onset more than 6 months before diagnosis) and with valid consent.

2.2. Exclusion criteria

Individuals who had known causes for dyspepsia and those patients who are unfit for endoscopy (shock, acute perforation, acute myocardial infarction, etc) were excluded.

2.3. Statistical analysis

Results were analysed using Graphpad software ©. Chi-square test, Fisher's exact test were used wherever applicable. Data were described in percentages, means, and standard deviations. A p value of less than 0.05 was considered significant.

2.4. Primary outcome

Organic lesions on endoscopy were found in 82.75% patients of dyspepsia with alarm symptoms in comparison to 50.38% in patients of dyspepsia without alarm symptoms.

2.5. Secondary outcome

A association of tobacco consumption with dyspepsia was observed with significant p value of 0.04.

3. Results

Of the 158 patients included in the study 112 (70.8%) were male and 46 (29.2%) were female. Male to female ratio was 2.43: 1 [Fig. 1].

The most common age group in the study was found to be between 30–39 years (30.38%) followed by 20–29 years (22.15%). The minimum age was 18 years and maximum age was 81 years. Mean age of patient in our study group was 40.04 ± 14.34 years.

Symptom of early satiety was observed in 67 patients (42.41%), epigastric pain in 114 patients (72.15%), and postprandial fullness in 82 patients (51.90%). The combination of early satiety, epigastric pain and postprandial fullness was seen in 20 patients (12.6%), early satiety with epigastric pain was seen in 40 patients (25.31%), epigastric pain with postprandial fullness in 44 (27.8%) patients and early satiety with postprandial fullness in 41 patients (25.94%). Only early satiety at presentation was seen in 6 patients (3.80%), only epigastric pain and postprandial fullness was seen in 50 (31.64%) and 17 (10.7%) patients respectively.

In the study smoking was seen in 24 patients (15.19%), tobacco consumption was seen in 80 patients (50.63%), alcohol consumption in 61 patients (38.61%), NSAID consumption in 15 patients (9.49%) and herbal medication in 5 patient (3.16%) [Table 1].

Out of 158 patients, Combination of alcohol, smoking and tobacco consumption was observed in 6 patients (3.79%), combination of alcohol and tobacco consumption was observed in 28 patients (17.7%), combination of smoking and tobacco consumption was observed in 4 patients (2.53%), combination of smoking and alcohol in 6 patients (3.79%).

Endoscopic finding was Normal in 69 patients (43.67%), followed by Peptic Ulcer in 41 patients (25.92%), Erosive gastro-duodenitis in 37 patients (23.42%), Oesophagitis in 7 patients (4.43%), UGI Malignancy in 5 patients (3.16%), oesophageal candidiasis in 2 patients (1.27%). Other lesion included hiatus hernia, gastric polyp and Dieulafoy's lesion in 2 (1.27%), 1 (0.63%) and 1 (0.63%) patient respectively.

In the two groups, of patient of dyspepsia without alarm symptom and with alarm symptoms, benign lesion were found in 62 and 22 patients respectively, malignant lesions in 3 and 2 patients respectively. This was statistically significant with p value of 0.014. On comparing the percentage distribution in patients of dyspepsia without alarm symptoms and dyspepsia with alarm symptoms: normal study (49.61%) was most common finding in patients of dyspepsia without alarm symptom followed by erosive gastroduodenitis (24.80%) followed by peptic ulcer (18.6%) respectively. In patients of alarm symptom most common finding was peptic ulcer (58.6%), followed by erosive and normal study (17.2%) [Table 2] [Fig. 2].

Fig. 1. Sex Distribution.

Table 1
Distribution of Risk Factors in Patient With Alarm and Without Alarm Symptoms.

	Number (%) With alarm (n = 29)	Number (%) Without Alarm (n = 129)	p value (Fishers exact test)
Alcohol			
● Yes	18 (62.06%)	43 (33.33%)	0.0078
● No	11 (37.93%)	86 (66.66%)	
Smoking			
● Yes	2 (6.89%)	22 (17.05%)	0.258
● No	27 (93.10%)	107 (82.9%)	
Tobacco			
● Yes	20 (68.96%)	60 (46.51%)	0.0477
● No	9 (31.03%)	69 (53.48%)	
NSAIDs			
● Yes	2 (6.89%)	13 (10.07%)	0.8591
● No	27 (93.10%)	116 (89.92%)	

In age group of >50 years, UGI malignancy was seen in 12.12% and in <50 years was seen in 0.8%. The result was statistically significant ($p=0.01$) [Table 3].

When dyspepsia was associated with alarm symptoms the likelihood of getting more abnormality on endoscopy was high [Table 4], which was statistically significant (p value = 0.013).

4. Discussion

In our study male to female ratio was 2.43:1. Gado A et al.⁷ reported a incidence 51% in males and 49% in females. Thomson A. B.R et al.⁸ reported a male to female ratio of 1:1. In India Sumathi B

et al.⁹ reported a male to female ratio of 1.5:1 and Sunil Kumar et al.¹⁰ reported a ratio of 1.05:1.

Our observation shows a male preponderance most probably attributed to the increased consumption of alcohol, smoking and tobacco which play a key role in pathogenesis of dyspepsia. It may also be attributed to the fact that in our society women's health problems are not given priority and fewer symptomatic women than men present to health facilities.

Gado A et al.⁷ reported 450 (32.14%), 22 (1.57%), 388 (27.71%) patients who had history of smoking, alcohol consumption and NSAID ingestion respectively. The difference was statistically significant in patients who smoked and consumed alcohol but not in patients who only consumed alcohol. Sumathi et al.⁹

Table 2
Comparison of Endoscopic Findings in Patient of Dyspepsia With Alarm and Without Alarm Symptoms.

Endoscopic Findings	Dyspepsai Without Alarm Symptoms		Dyspepsia With Alarm Symptoms		p value (Fishers exact test)
	n = 129	%	n = 29	%	
Normal Study	64	49.61	5	17.20	0.0016
Erosive Gastroduodenitis	32	24.80	5	17.20	0.4727
Peptic Ulcer	24	18.60	17	58.60	<0.0001
Oesophagitis	6	4.60	1	3.40	1.0000
UGI Malignancy	3	2.30	2	6.80	0.2485
Oesophageal Candidiasis	1	0.77	1	3.40	0.334
Others	4	3.10	0	0.00	–
TOTAL	129	100.00	29	100.00

Fig. 2. Comparison of Endoscopic Findings in Patient of Dyspepsia with Alarm and Without Alarm Symptoms.

Table 3
Incidence of UGI Malignancy in Relation to Age Group.

UGI Malignancy	≤50 Years		>50 Years		p value
	n = 125	%	n = 33	%	
Present	1	0.8	4	12.12	0.0070
Absent	124	99.2	29	87.87	

reported Alcohol consumption, smoking, and NSAID use in 80 (2.9%), 259 (9.4%), 150 (5.4%) respectively in patients with alarm symptoms and 21 (3.1%), 68 (10.2%), 26 (3.9%) respectively in patient without alarm symptoms.

However in our study dyspepsia was significantly associated with alcohol and tobacco consumption. However the association was not significant in patients with NSAID intake and smokers. This discrepancy may be due to the wide social difference and dietary habits. It may also be due to the inherent alcohol drinking and tobacco consumption habits in this region,¹² genetic composition and the life style of this region. This may also be a beta error attributed to the small sample size of the study.

Sumathi B et al.⁹ reported a normal study in 1453 patients (42.3%), and 44.3% in patients with dyspepsia without alarm symptoms and 34.7% in patients with dyspepsia with alarm symptom. Gado A et al.⁷ reported normal findings in 65% patients presenting with dyspepsia and 82% of patients younger than 30 years. Manes et al.¹¹ reported a total of 168 patients with appropriate upper gastrointestinal endoscopy to have normal endoscopic findings. Our study is almost in concordance with other studies. The slight variation in the study may be due to the geographical and social differences and short duration of study.

In our study the results also showed that epigastric pain was the most common presentation of patients. Among the benign lesions, most common was peptic ulcer disease (25.95%) followed by erosive gastroduodenitis (23.42%). Also peptic ulcer disease was more common in patients with alarm symptoms. Manes et al.,¹¹ Sumathi et al.,⁹ Sunil Kumar et al.¹⁰ reported duodenal ulcer in 31.01%, 10.9%, 18.6% respectively and gastric ulcer in 6.37%, 5.3%, 6.1% respectively. Our study showed duodenal ulcer in 21.5%, gastric ulcer in 4.43% respectively.

The higher percentage of peptic ulcer disease among the alarm group may be due to obvious alarm symptoms like haematemesis and melaena, hence immediate presentation of the patients to the hospital.

In our study we found 7 patients (4.43%) to have Oesophagitis. Out of the 7 Patients, 1 had dyspepsia with alarm symptom and 6 had dyspepsia without alarm symptom. Among the 7 patients, 3 (42.86%) were classified as Los Angeles grade A and 4 (57.14%) were classified as Los Angeles grade B. Manes et al.,¹¹ Gado et al.,⁷ Sunil Kumar et al.,¹⁰ reported Oesophagitis in 11.6%, 0–23.0%, 15.6% respectively.

The discrepancy in the studies can be attributed to the significant overlap of the symptoms of Dyspepsia and Gastro-oesophageal reflux disease leading to a selection bias of sample and the lack of proper defining landmark for differentiating heartburn and epigastric pain or burning.

In the present study, we observed UGI Malignancy in 5 (3.16%) patients of dyspepsia. Among the 129 patients of dyspepsia without alarm symptoms 3 (2.3%) were diagnosed to have UGI malignancy and among the 29 patients of dyspepsia with alarm symptoms 2 (6.8%) were diagnosed to be UGI malignancy. Malignant lesions were diagnosed in patients of duration of more than 6 months.

Gado A et al.⁷ reported 16 (1%) patients with UGI malignancy among patients with dyspepsia. Ages ranged from 37 to 75 years. UGI malignancy was diagnosed in 1% of patients aged 30–50 years and 2% of patients more than 50 years ($P=0.003$). UGI malignancy was not found in dyspeptic patients younger than 30 years old. Sumathi B et al.⁹ reported a total of 282 patients (8.27%) of UGI malignancy, among these 125 (4.5%) were reported in patients of dyspepsia without alarm symptoms and 48 (21.6%) were reported in patients of dyspepsia with alarm symptoms. Sunil Kumar et al.¹⁰ reported gastric cancer in 2.8% patients and Manes et al.¹¹ reported 6 (0.86%) patients of gastric cancer out of 706 patients studied. Thomson A.B.R et al.⁸ reported malignancy in less than 2% of the patients.

The results in our study may be attributed to the inherent geographical variation, unusual clustering of cases at the tertiary care hospital, short duration of the study and unknown etiological factors like genetic and dietary differences as well as the small sample size of the study.

In addition, white light endoscopy was used during the study. Use of narrow band imaging or other chromoendoscopic techniques may help in early detection of malignant lesions and thereby early intervention may be possible.

In the present study biopsy was done in 8 patients with suspicious lesions to confirm the endoscopic findings. Out of the 8 patients with suspicious lesions, 2 were found to have gastric ulcer, low grade dysplasia in 1 patient, squamous cell carcinoma of oesophagus was found in 2 patients, adenocarcinoma of oesophagus in 2 patient and adenocarcinoma of stomach in 1 patient.

The age group of the patient with UGI malignancy was between 45–65 years. The mean age was 56.7±7.8. UGI malignancy increased in age group more than 50 years. The p value was statistically significant ($p=0.0070$) for UGI malignancy in 2 groups, age group ≤50 years and >50 years.

5. Conclusion

Dyspepsia is a relatively common entity in day to day practice.

The presence of alarm symptom is statistically associated with more organic lesions on endoscopy.

Dyspepsia in age above 50 years is commonly associated with underlying organic lesions or malignancy.

UGI endoscopy is simple procedure that can be undertaken for early diagnosis of benign as well as malignant lesions in patient presenting with dyspepsia.

Conflict of interest

The authors have none to declare.

Table 4
Outcome of Endoscopy in Patient of Dyspepsia With and Without Alarm Symptoms.

groups	Endoscopic Findings			Total	p value
	Normal Study	Benign Lesions	Malignant Lesions		
Dyspepsia without Alarm symptoms	64	62	3	129	0.01357
Dyspepsia with Alarm Symptoms	5	22	2	29	

Ethical clearance

Taken From Institutional Ethics Committee (IEC), Assam Medical college, Dibrugarh.

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