ENDOSCOPIC FINDINGS IN PATIENTS PRESENTING WITH DYSPEPSIA AND ASSOCIATION OF AGE AND GENDER WITH ORGANIC DYSPEPSIA

Safia Batool, Muhammad Usman Sajid, Jamal Waris, Shahzeb Ahmed Satti*, Fayyaz Hassan, Faisal Aziz**

Combined Military Hospital Jhelum/National University of Medical Sciences (NUMS) Pakistan, *Combined Military Hospital Quetta/National University of Medical Sciences (NUMS) Pakistan, **Combined Military Hospital/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Objective: To determine frequency of general and specific endoscopic findings in patients diagnosed with dyspepsia and to determine association of age and gender with organic dyspepsia.

Study Design: Cross sectional study.

Place and Duration of Study: Gastroenterology department, Combined Military Hospital, Kharian, from Jul to Dec 2018.

Methodology: A total of 180 patients participated in the study after being selected through non probability consecutive sampling. Age, gender and history of dysphagia, weight loss, gastrointestinal bleeding, and smoking were recorded. All underwent standard electronic video upper gastrointestinal endoscopy. Abnormal findings of inflammation, narrowing, strictures, furrowing, erosions, ulcers, atrophy, nodularity, polyps, masses and malignancy were recorded. The abnormal findings were presented as frequency and percentages. On the basis of endoscopic findings the sample was divided into two groups of functional (normal endoscopy) and organic dyspepsia. Chi-square test was selected to compare the frequencies of organic and functional dyspepsia with age and gender.

Results: Majority 99 (55%) of the patients with dyspepsia had a normal endoscopic finding while in organic dyspepsia, reflux esophagitis 41 (22.8%) was the most common finding followed by gastritis 16 (8.9%), duodenal ulcer 12 (6.7%) and gastric ulcer 9 (5%). Three patients with organic dyspepsia had malignancy. Most common specific findings were non erosive esophagitis 25(30.8%). Age above 40 years and male gender was found to be statistically significantly associated with organic dyspepsia (p<0.01).

Conclusion: Majority of the patients with dyspepsia have a normal endoscopic finding. There is a higher incidence of organic dyspepsia in males and in patients above 40 years of age.

Keywords: Dyspepsia, Endoscopy, Functional, Organic.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Dyspepsia is a common disorder affecting 23-45% population, globally[1]. Dyspepsia presents with several clinical dilemmas. Clinically Dyspepsia is defined as one or more clinical symptoms of burning, early satiation, epigastric pain and postprandial fullness[2]. Several studies refereed it to upper abdominal discomfort that specifically arises from upper gastrointestinal tract (GIT). In latest literature, bloating and nausea also coexist with dyspepsia, however, heart burn is excluded from dyspepsia diagnostic criteria due to primary initiation from esophagus leading towards gastro esophageal reflux disease (GERD)[3].

Dyspepsia is a common concern and divided in to two main classes; organic and functional dyspepsia. Common causes of organic dyspepsia are gastro esophageal reflux disease, pancreatic or biliary disorder, peptic ulcer, esophageal or gastric cancer, infection or systemic diseases and intolerance to food or drugs[4]. Functional dyspepsia is due to impaired gastric accommodation to meal, duodenal sensitivity to lipids or acids, gastric electrical rhythm, hypersensitivity to gastric distention, autonomic nervous system/entral nervous system dysregulation and unsuppressed postprandial phasic contractility (with in proximal stomach)[5]. Literature reported that dyspepsia is assumed to be organic in nature in developing countries and functional in developed countries. Functional dyspepsia usually originates from gastro duodenal region (in absence of metabolic, organic and systemic diseases) for minimum duration of 3 months[6]. Prevalence of uninvestigated dyspepsia is 7-34.2%, worldwide[7]. However, lower prevalence is seen in South East Asia 8% and Singapore 7%[8].

Several risk factors for dyspepsia are identified including *Helicobacter pylori* infection, behavioral characteristics and psychiatric disorders. Dyspepsia diagnostic evaluation is associated with upper gastrointestinal endoscopy, gastric emptying test, abdominal ultrasonography, and gastric accommodation evaluation. Endoscopy is an absolute indication for patients with alarming features of dyspepsia. Endoscopy is associated with diagnosis of structural disorders. Negative

Correspondence: Dr Safia Batool, Village Ghura Jattan Post Office Nathwala, The Dina Distt, Jhelum Pakistan

Received: 29 Jul 2020; revised received: 04 Sep 2020; accepted: 16 Sep 2020

endoscopy had a significant advantage of reducing anxiety and increasing patient satisfaction in dyspeptic patients[9].

Endoscopy can be used as dyspepsia initial strategy; however, several studies did not report it as practical approach due to high cost on health care system[10]. Present study aims to determine frequency of general and specific endoscopic findings in patients diagnosed with dyspepsia the endoscopy helps to improve the quality of life and decrease the unnecessary expenditure on impirical therapy and it may help the clinician in making guidelines to manage dyspepsia due to different causes and help in early diagnosis and management of such patients which may not only improve the patient compliance to treatment but also help them to achieve long term cure.

METHODOLOGY

A cross sectional study was conducted at department of gastroenterology, Combined Military Hospital, Kharian, from July to December 2018. A sample size of 171 patients was calculated to estimate the proportion of general and specific endoscopic findings in patients with dyspepsia with a 95% confidence level and with ±5% margin of error of population proportion value *p*=0.90 using the formula n=z21-@/s 1-P/E2 P with the help of WHO calculator[11]. Patients were selected using non probability consecutive sampling. Study was approved by the institutional review board of the hospital (ERC certificate no1129/04/Estb/2018). Patients with age >18 years, both genders, epigastralgia/epigastric burning that last for minimum 3 months and occurrence of symptoms at least 6 months before were included in study. Exclusion criteria included patients with GERD, patients using Non steroidal anti-inflammatory drugs (NSAIDs) at least 1-week before study, chronic decompensated liver disease, decompensated chronic heart failure, other predominant dysmotility symptoms, presence of major psychiatric disorders and symptoms outside the epigastrium.

A written informed consent taken from all participants. All patients were systematically evaluated before endoscopy by taking history about the alarm symptoms like weight loss (5% of original body weight in last 3 months) bleeding dysphagia and presence of any mass. Symptoms intensity was determined by Leeds Dyspepsia questionnaire[12]. All patients had fasting of 06 hours. Endoscopy (upper digestive) was carried out by standard electronic video endoscope. (PENTAX) under sedation with single dose of Inj Midazolam 5mg iv 5minutes before the procedure and local anesthesia with lignocaine oral spray, with the patient lying in left lateral decubitus position with neck flexed forward keeping in view the age, BMI and comorbids like chronic liver disease, chronic renal failure. After intubating the lumen the mucosa was visualized on LCD screen and examined and recorded for inflammation, reflux, narrowing, strictures, furrowing, erosions, ulcers, polyps and masses. Biopsies were taken from the suspicious and mass lesions and sent for histopathological examination. All the patients were sent back after 15 minutes of observation.

Data was analyzed using SPSS-24. Descriptive statistics and normality tests were calculated for age and gender. Counts and percentages were calculated to summarize the data of each categorical variable. Pearson Chi-square test was selected to compare the frequencies of organic dyspepsia with age and gender. The *p*-value of ≤0.05 was considered significant.

RESULTS

One Hundred Eighty patients participated in the study. Among them there were 110 (61%) males and 70 (39%) were females. The median (IQR) age of the patients was 40 (9). There were 59 (33%) patients in age group 18-40 years and 121 (67%) in age group >40 years. Duration of symptoms was 6-11 months in 72 (40%) patients and >11 months in 108 (60%) patients. Among all the patients 91 (50.6%) had epigastraglia and 89 (49.4%) had post prandial fullness. Intensity of symptoms was mild in 83 (46.1%), moderate in 70 (38.9%) and severe in 27 (15%) patients. Among the patients with organic dyspepsia alarming symptoms were weight loss 43 (53%), bleeding in 34 (41.9%) and dysphagia in 04 (4.9%).

Table-I: Frequency of general endoscopic findings (n=180).

General Endoscopic Findings	n=180 (%)
Functional dyspepsia	
Normal examination	99 (55)
Organic dyspepsia	
Reflux esophagitis	41 (22.8)
Gastritis	16 (8.9)
Gastric ulcer	09 (5)
Duodenal ulcer	12 (6.7)
Gastric adenocarcinoma	02 (1.1)
Gastric lymphoma	01 (0.6)

Normal endoscopic examination was the most common findings 99 (55%) among general endoscopic findings out of all the 180 patients and in the remaining 81 (45%) patients with organic dyspepsia the general endoscopic findings are shown in table-I. The

most common specific endoscopic findings were non erosive esophagitis (30.8%) in patients with organic dyspepsia and other specific endoscopic findings are depicted in table-II.

Males had a higher association with the occurrence of organic dyspepsia as compare to females (p<0.01) as shown in table-III. Age above 40 yrs was significantly associated with a higher incidence of organic dyspepsia (p<0.01) as shown in table-IV.

Table II: Frequency distribution of specific endoscopic findings (n=81).

Specific Endoscopic Findings	n (%)
Esophagus	
Non erosive esophagitis	25 (30.8)
Erosive esophagitis	10 (12.3)
Barret	05 (6.1)
Stomach	
Gastritis	
Enanthematous	05 (6.1)
Erosive	04 (4.9)
Nodular	02 (2.4)
Atrophic	02 (2.4)
Ulcer	
Fundus, Body, Antrum	06 (7.4)
Prepyloric	03 (3.7)
Malignancy	
Gastric adenocarcinoma	02 (2.4)
Gastric lymphoma	01 (1.2)
Duodenum	
Duodenitis	04 (4.9)
Duodenal ulcer	12 (14.8)

Table-III: Association between gender and organic dyspepsia (n=180).

Dyspepsia	Gender		*p*-value
	Male (n=110)	Female (n=70)	
Functional dyspepsia	45 (25%)	54 (30%)	<0.01
Organic dyspepsia	65 (36.1%)	16 (8.8%)	

Table-IV: Association between age and organic dyspepsia (n=180).

Dyspepsia	Age		*p*-value
	<40 yrs (n=59)	>40 yrs (n=121)	
Functional dyspepsia	54 (30%)	45 (25%)	<0.01
Organic dyspepsia	05 (2.7%)	76 (42.2%)	

DISCUSSION

Dyspepsia is a common presentation for many patients in gastroenterology clinics[13]. Dyspepsia prevalence is very high in both developing and developed world[14]. Dyspepsia is responsible for huge economic burden on health care system and accounts 8.3% of all primary care physicians visits[15].

In present study, total 180 patients were included in study. Symptoms onset was 6-11 months in 72 (40%) patients and >11 months in 108 (60%). Kashif *et al* reported the mean duration of symptoms was 8.71 ± 2.34 months[16]. In present study, 50.6% patients had epigastralgia and 49.4% had post prandial fullness as most common symptoms. However, Abdeljawad *et al* reported that 76.6% patients with dyspepsia had epigastric pain and nausea as the most common symptom[17].

In present study, majority of patients had mild intensity of symptoms following moderate and severe intensity (46.1%, 38.9% and 15% respectively). Rodrigues *et al* reported that intensity of pain in functional dyspepsia ranges from moderate (25%) to severe (40%)[18]. In present study, majority of patients with dyspepsia had typical pain, however, Santos *et al* reported contradictory findings with severe and intense pain in functional dyspepsia[19]. In our study, most common alarming situation for endoscopy was weight loss. Neri G Picardio reported that haematemesis /malena (18%), anemia (7.6%) and dysphagia (3.8%) are most common alarming symptoms for endoscopy[20].

In present study, most common endoscopic finding in functional dyspepsia was normal examination (55%) while in organic dyspepsia reflux esophagitis (22.8%) following gastritis,duodenal ulcer and gastric ulcer were most common findings while Santosh *et al* reported that peptic ulcer (25.9%) and gastroduodenitis (23.9%) are the most common findings[21]. Another similar study reported that gastritis and esophageal carcinoma are most prevalent endoscopic findings in dyspepsia patients[22].

In present study, most common specific findings were non erosive esophagitis (13.9%) following peptic ulcers (11.6%), erosive esophagitis (5.6%). Milosavljevic *et al* reported that erythematous gastritis (37%) was most common finding of stomach, adenocarinoma (20%) (malignancy) and erythematous duodenitis (12%) was most common finding of duodenum[23].

LIMITATION OF STUDY

Small sample size and conduction of study at single center limits generalizability of study.

CONCLUSION

Endoscopic findings of organic and functional dyspepsia showed predominance of functional diseases. Organic dyspepsia is significantly associated with

age and gender. Early detection and management of dyspepsia leads to better prognosis.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Jones RH, Lydeard SE, Hobbs FD, Kenkre JE, Williams EI, Jones SJ. Dyspepsia in england and scotland. Gut 2013; 31(2): 401-05.
2. Talley NJ, Zinsmeister AR, Schleck CD, Melton LJ. Dyspepsia and dyspepsia subgroups: a population-based study. Gastroenterol 2014; 102(3): 1259–68.
3. Penston JG, Pounder RE. A survey of dyspepsia in Great Britain. Aliment Pharmacol Ther 2013; 10(3): 83–89.
4. Hungin AP, Rubin GP. Management of dyspepsia across the primary-secondary healthcare interface. Dig Dis 2011; 19(4): 219–24.
5. Sobieraj DM, Coleman SM, Coleman CI. US prevalence of upper gastrointestinal symptoms: a systematic literature review. Am J Manag Care 2011; 17(4): 449–58.
6. de Oliveira SS, Santos IS, Silva JFP, Machado EC. Prevalence of dyspepsia and associated sociodemographic factors. Rev Saude Publica 2016; 40(3): 420–27.
7. Sander GB, Mazzoleni LE, Francesconi CF, Balbinotto G, Mazzoleni F, Wortmann AC, et al. Influence of organic and functional Dyspepsia on work productivity: the HEROES-DIP study. Value Health 2011; 14(Suppl-1): S126–29.
8. Tack J, Talley NJ, Camilleri M, Holtmann G, Hu P, Malagelada JR, et al. Functional gastroduodenal disorders. Gastroenterology 2016; 130(5): 1466–79.
9. Hsu YC, Yang TH, Liou JM, Hsu WL, Lin HJ, Wu HT, et al. Can clinical features stratify use of endoscopy for dyspeptic patients with high background prevalence of upper gastrointestinal cancer? Dig Liver Dis 2012; 44(3): 218–23.
10. Bytzer P, Hansen JM, Schaffalitzky de Muckadell OB. Empirical H2-blocker therapy or prompt endoscopy in management of dyspepsia. Lancet 1994; 343(34): 811–16.
11. Barkun A, Crott R, Fallone C, Kennedy W, Lachaine J, Levinton C, et al. A one-year economic evaluation of six alternative strategies in the management of uninvestigated upper gastrointestinal symptoms in Canadian primary care. Can J Gastroenterol 2010; 24(2): 489–98.
12. Moyayyedi P, Duffett S, Braunholtz D, Mason S, Richard ID, Dowell AC, et al. The leeds dyspepsia questionnaire: a valid tool for measuring the severity of dyspepsia. Aliment Pharmacol Ther 2016; 12(3): 1257-62.
13. Emara MH, Salama RI, Salem AA. Demographic, endoscopic and histopathological features among stool H pylori positive and stool H pylori negative patients with dyspepsia. Gastroenterol Res 2017; 10(5): 305-10.
14. Ghoshal UC, Singh R, Chang FY, Hou X, Wong BC, Kachintorn U. Epidemiology of uninvestigated and functional dyspepsia in Asia: facts and fiction. J Neurogastroenterol Moti 2011; 17(3): 235-44.
15. Talley NJ, Vakil NB, Moayyedi P. American gastroenterological association technical review on the evaluation of dyspepsia. Gastroenterology 2015; 129(3): 1756–80.
16. Kashif M, Farooka I, Malik T, Anser A, Mehmood A. Endoscopic findings among patients presenting with dyspepsia in tertiary care hospital. J Fatima Jinnah Med Univ 2016; 10(1): 15-18.
17. Abdeljawad K, Wehbah A, Qayed E. Low prevalence of clinically significant endoscopic findings in outpatients with dyspepsia. Gastroenterol Res Pract 2017; 2017(2): 1-7.
18. Rodrigues MN, Queiroz DM, Rodrigues RT, Rocha AM, Braga Neto MB, Braga LL. Helicobacter pylori infection in adults from a poor urban community in northeastern Brazil: demographic, lifestyle and environmental factors. Braz J Infect Dis 2015; 9(2): 405–10.
19. Santos IS, Boccio J, Santos AS, Valle NC, Halal CS, Bachilli MC, et al. Prevalence of Helicobacter pylori infection and associated factors among adults in Southern Brazil: a population-based cross-sectional study. BMC Public Health 2015; 5(2): 118.
20. Picardo NG, Ajayi NA. Indications of endoscopy in patients with symptoms of upper gastrointestinal disease in tertiary hospital in South Eastern Nigeria. Afr J Med Health Sci 2015; 14(2): 96-100.
21. Desaia SB, Mahantab BN. A study of clinico endoscopic profile of patients presenting with dyspepsia. Clin Epidemiol and Glob Health 2018; 6(1): 34-38.
22. Moayyedi P, Duffett S, Braunholtz D, Mason S, Richards ID, Dowell AC, et al. The leeds dyspepsia questionnaire: a valid tool for measuring the presence and severity of dyspepsia. Aliment Pharmacol Ther 2016; 12(3): 1257–62.
23. Milosavljevic T, Kostić-Milosavljević M, Jovanović I. Complications of peptic ulcer disease. Dig Dis 2011; 29(2): 491–93.