

## Significance of Endoscopic Findings in Patients with Dyspepsia in Diyala Province - Iraq Hospital Based Study

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### Abstract

**Background:** Dyspepsia is a common gastrointestinal problem that poses a diagnostic and therapeutic challenge to the clinician because of the non-specific nature of the symptoms. Dyspepsia could be organic when a cause is found or functional (non-ulcer) when no cause is identified. Endoscopy is the gold standard in evaluating dyspeptic patients and various guidelines have been drawn to make the use of upper GI endoscopy more rational as the establishment of this procedure for every dyspeptic patient may not be practical.

**Objective:** To evaluate the endoscopic findings in dyspeptic patients and to assess whether the major guidelines are applicable in our community.

**Patients and Methods:** A prospective study, carried out in the upper gastro-intestinal endoscopy unit (using Pentax® 2015 endoscopy) at Baquba Teaching Hospital – Diyala-Iraq, from February 2017 to October 2017 in which 120 dyspeptic patients (47 male and 73 female) with age range 16-75 years were included. The patients were selected according to the guidelines. A standardized data collection form was completed for each patient.

**Results:** One hundred and twenty patients enrolled in this study, 60.83% patients were female and 39.17% of patients were male, with female to male ratio of 1.55:1. Normal endoscopic finding was found in 40% of dyspeptic patients while clinically significant endoscopic findings were found in 60% of patients. Clinically significant endoscopic findings were more prevalent in older patients. The most common pathologic finding was duodenal ulcer in 18.33% of patients followed by gastritis in 14.17% of patients and esophagitis in 10.33% of patients. Gastric cancer was proved by histopathology in 1.67% and esophageal cancer in one patient 0.83%.

**Conclusion:** Dyspeptic symptoms are more common in female. Normal finding was found in 40% of dyspeptic patients (functional dyspepsia) while clinically significant endoscopic findings (organic causes) were found in 60% of the dyspeptic patients and most prevalent in elderly patients, with duodenal ulcer being the most common finding followed by gastritis and esophagitis. Gastric cancer was present in 1.67% and esophageal cancer in 0.83%.

**Keywords:** Dyspepsia, upper gastroendoscopy diagnosis, Diyala province.

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## Introduction

Dyspepsia is a common gastrointestinal problem with over 80% of the population is affected by dyspepsia at some time in their life [1]. The prevalence of dyspepsia is 10-20% in the Asia –Pacific region [2] while in the Western population range from 19 up to 41 % [3, 4, 5].

Dyspepsia poses a diagnostic and therapeutic challenge to the clinician [6], because dyspepsia is not a diagnosis, but merely a cluster of relapsing and remitting symptoms [3,7] with numerous underlying causes [8] believed to be referable to the upper gastrointestinal tract [3], thus the problem and its management remains a considerable socio-economic burden [2,3,7,9,10], although only 20 – 25% of persons with dyspepsia seek medical care, the problem is responsible for 2-5 % of visit to primary care physicians [5,11-14]. Because of the non-specific nature of the symptoms [9], the definitions of dyspepsia have evolved considerably over the last decades [15] and dyspepsia subclassifications, based on dominant symptoms, are of limited value in predicting the presence and nature of clinically significant upper gastrointestinal findings in adult dyspeptic patients [12] and the current standard for the diagnosis is Rome III criteria [9,16], symptoms must be chronic, occurring for three months within the initial 6 months of symptoms onset [9] and the patient must have one or more of the following 3 symptoms: sensation of pain or burning in the epigastrium, early satiety (inability to finish a normal sized meal), fullness during or after a meal [16].

An organic cause is found in 40% of patients with dyspeptic symptoms [4, 11, 17, 18]. In others, no cause is identified and the dyspepsia is considered to be functional or non-ulcer dyspepsia [11,19,21]. Clinical impression, demographics, risk factors, patient history and symptoms are non specific for differentiating between structural from functional dyspepsia [9, 13, 22].

Options for evaluating dyspeptic patients include therapeutic trials, testing and eradication for *H. pylori*, upper GI radiography and endoscopy [4, 9, 18]. Dyspeptic symptoms are the most frequent reason for requesting for an upper endoscopy [6] and endoscopy is the gold standard in evaluating dyspeptic patients [1,23] because of its ease, reliability, diagnostic superiority and the ability to perform biopsies and /or therapeutic interventions [23]. A negative endoscopy may have a significant reassuring effect and may result in a decreased use of medication, in a fewer medical consultations [3], reduction in anxiety and an increase in patient satisfaction [9] however, it is associated with a certain degree of discomfort, inconvenience, cost and low availability in some areas [8]. Guidelines have been drawn by various associations to make the use of upper gastro-intestinal endoscopy more rational [6] as the establishment of this procedure for every dyspeptic patient may not be a practical approach because it has burdensome expenses on health system [1]. Major guidelines recommend that endoscopy should be initially used for patients with

alarm symptoms (family history of upper gastro-intestinal malignancy in a first degree relative , unintended weight loss, gastro-intestinal bleeding , dysphagia, odynophagia, persistent vomiting and abnormal imaging suggesting organic disease) [5,8,9] or patients over a certain threshold age which is 55 years in the Western countries since the prevalence of upper GI malignancies is low under this age [8] while in some Asian developing countries with high prevalence of gastric cancer this age cutoff may not be appropriate [2,6, 8].

### Patients and Methods

A prospective study, carried out in the upper gastro-intestinal endoscopy unit (using Pentax® 2015 endoscopy) at Baquba Teaching Hospital – Diyala- Iraq, from February 2017 to October 2017 in which 120 dyspeptic patients (47 male and 73 female) with age range 16-75 years were included. Patients were selected according the guidelines (dyspeptic patients older than 55 years or younger patients with alarming symptoms i.e weight loss, anaemia, vomiting, haematemesis, melena or dysphagia) while those with relative or absolute contraindications for upper gastro-intestinal endoscopy e.g. hemodynamic instability or those whose procedures were not completed were excluded. Informed consent was obtained from the patients and the procedure was performed under local lidocaine spray anesthesia and biopsy was done at the discretion of the endoscopist.

A standardized data collection form (sheet) was completed for each patient. Recorded

informations included demographic data (age and gender), previous medical and surgical history and endoscopic findings and histopathology results.

### Statistical analysis

Data were collected on a specific questionnaire and an Excel Microsoft 2010 program used for data analysis.

### Results

One hundred and twenty patients enrolled in this study, 73 patients were female (60.83%) and 47 patients were male (39.17%) with female to male ratio of 1.55:1, patients age range from 16-75 years ( 20 patients (16.67%) were older than 55 years and 100 patients(83.33%) were younger than 55 years with alarm symptoms). Normal endoscopic finding was found in 48/120 patients (40%), in those with normal finding, 6 patients were older than 55 years and 42 patients were younger than 55 years. Clinically significant endoscopic findings were found in 72/120 patients (60%), in those with clinically significant endoscopic findings 14 patients were older than 55 years and 58 patients were younger than 55 years with alarm symptoms. Thus, in patients younger than 55 years with alarm symptoms normal finding was present in 42/100 patients (42%) and clinically significant endoscopic findings was present in 58/100 patients (58%) while in patients older than 55 years, normal finding was present in 6/20 patients (30%) and clinically significant endoscopic findings was present in 14/20 patients (70%). As Table (1) shows.

**Table (1):** Endoscopic findings according to patients' ages

Patient's age	Total no.	Endoscopic findings	
		Normal	Clinically significant findings
Patients <55 years	100	42/100(42%)	58/100 (58%)
Patients >55years	20	6/20 (30%)	14/20 (70%)

Regarding sex distribution of the findings, in male patients normal endoscopic finding was present in 17/47 patients (36.17%) while clinically significant endoscopic findings was seen in 30/47male patients (63.83%). In

female patients, normal endoscopic finding was present in 31/73 patients (42.47%) while clinically significant endoscopic findings was seen in 42/73 female patients (57.53%).As Table(2) shows.

**Table (2):** Endoscopic findings according to patients' sex

Patient's sex	Total no.	Endoscopic findings	
		Normal	Clinically significant findings
Male	47/120(39.17%)	17/47(36.17%)	30/47(63.83%)
Female	73/120(60.83%)	31/73 (42.47%)	42/73 (57.53%)

The most common pathologic finding was duodenal ulcer in 22 patients (18.33%) followed by gastritis in 17 patients (14.17%) and esophagitis in 13 patients (10.33%).Gastric cancer was proved by

histopathology in 2 patients (1.67%) and esophageal cancer in one patient (0.83%).Table (3) shows the endoscopic findings in this study.

**Table (3):** The endoscopic findings in the patients

Endoscopic Finding	No. of Patients	Percentage
Normal	48	40 %
Duodenal ulcer	22	18.33 %
Gastritis	17	14.17 %
Esophagitis	13	10.33 %
Hiatus hernia	8	6.66 %
Duodenitis	5	4.17 %
Gastric ulcer	4	3.33 %
Gastric cancer	2	1.67 %
Esophageal cancer	1	0.83 %

## Discussion

This study showed that 60.83% of patients with dyspepsia were female while 39.17% were male with female to male ratio of 1.55:1 these results approximate that reported by

AB Thomson etal [12] and Ma'an Midhat et al [20], while in the study of Sumathi B et al [6] the male to female ratio was 1.5:1, Saba Fakhrieh et al [3] and Salkic et al [8] showed

the same prevalence in both male and female. In this study 16.67% of patients were older than 55 years 83.33% patients were younger than 55 years with alarm symptoms. One reason for the low number of elderly patients compared to younger age could be the decline in many abdominal symptoms with age [29,30].

In our study normal endoscopy (functional dyspepsia) was seen in 40% of dyspeptic patients, while clinically significant endoscopic findings (organic dyspepsia) were found in 60% of the patients. This is not surprising as the prevalence of non-ulcer dyspepsia has been reported to be high [31], these results near to the reported rates of Ghamar Chehren et al [1] who reported normal finding in 35% of dyspeptic patients and clinically significant endoscopic findings in 65% of patients, Sumathi B et al [6], Vakil N et al [24] with normal finding in 42.3% and 41% respectively and AB Thomson [12] who reported clinically significant endoscopic findings in 58% of patients while Lopez LH et al [14] reported normal endoscopy in 86.14% of dyspeptic patients, Wallace MB et al [25] and Sanjiv M et al [26] found normal endoscopy in 21% and 26.4% respectively.

In this study normal endoscopy was more common in dyspeptic patients younger than 55 years with alarm symptoms compared to patients older than 55 years (42% vs 30%) while clinically significant endoscopic findings were more common in patients older than 55 years (70% vs 58%). These findings are consistent with previous studies of Saba Fakhrieh et al [3], AB Thomson et al [12],

Ahmed Gado et al [18], Lopez LH et al [14] and Sanjiv M et al [26] while Wallace MB et al [25] reported that age and sex were significant but weak independent predictors of endoscopic findings.

Regarding sex distribution, normal endoscopic finding was more common in female patients (42.47% vs 36.17%) while clinically significant endoscopic findings found more in male patients (63.83% vs 57.53%), these results go with studies of Jung HK et al [22] and Sanjiv M et al [26] revealed that male gender increased the risk for having endoscopic abnormality. Wallace MB et al [25] reported that age and sex were significant but weak independent predictors of endoscopic findings.

The most common clinically significant endoscopic findings in this study were duodenal ulcer in 18.33% of patients followed by gastritis in 14.17% and esophagitis in 10.33%. Ahmed Gado et al [18] revealed that duodenal ulcer was the most common finding in 15% of patients followed by esophagitis in 14% then gastritis in 4%. Sumathi B et al [6] showed that duodenal ulcer was the most common finding in 10.9% followed by esophagitis in 5.1%. In the study of Piatek –Guziewicz A et al [27] gastritis was the most common endoscopic lesion followed by esophagitis then peptic ulcer. Vasilliou C [28] showed that chronic gastritis followed by hiatus hernia were most prevalent. AB Thomson et al [12] showed that esophagitis was the most common finding in 43.4% while Ghamar Chehren et al [1]

revealed that the most common finding was gastritis.

In this study 3 dyspeptic patients (2.5%) had malignancy, all were older than 55 years and two of them did not have alarm symptoms, suggesting that older patients are less likely to present with alarm symptoms and this is why major guidelines recommend that dyspeptic patients above certain age cutoff should be referred for endoscopy regardless of whether alarm features are present (8) or not. Two patients with malignancy had gastric cancer (1.67%) and one patient had esophageal cancer (0.83%), the lower incidence of esophageal cancer may be explained by the fact that most patients with esophageal cancer initially present with dysphagia, odynophagia or weight loss rather than dyspepsia alone [32]. In the study of Alexander C et al [15] (0.4%) of dyspeptic patient had gastric cancer while Ghamar Chehreh et al [1] showed that the prevalence of gastric cancer was (5%) and esophageal cancer (2.5%). Sumathi B [6], Salkic et al [8], Hye-Kyung Jung [12] and Ahmed Gado et al [18] revealed that the overall malignancy rates were 3.5%, 1.86%, 1.3% and 1% respectively. The high prevalence of gastric cancer in some studies is due to the fact that the prevalence of gastric cancer is high in some populations as in Southeast Asia [32].

### Conclusions

Dyspeptic symptoms are more common in female. Normal finding was found in 40% of dyspeptic patients (functional dyspepsia) while clinically significant endoscopic

findings (organic causes) were found in 60% of the dyspeptic patients and most prevalent in elderly patients, with duodenal ulcer being the most common finding followed by gastritis and esophagitis. Gastric cancer was present in 1.67% and esophageal cancer in 0.83%.

### Recommendations

Any dyspeptic patients older than 55 years or younger patients with alarming symptoms i.e family history of upper gastro-intestinal malignancy in a first degree relative, unintended weight loss, unexplained anaemia, gastro-intestinal bleeding, dysphagia, odynophagia, persistent vomiting and abnormal imaging suggesting organic disease should be referred to endoscopic evaluation.

### References

- [1]Ghamar Chehreh ME, Shahverdi E, Khedmat H et al. Endoscopic Findings in Patients with Dyspepsia in Iran. International Journal of Digestive Diseases 2016; 2: 1-5.
- [2]Hye-Kyung Jung. Systemic Review with Metaanalysis: Prompt Endoscopy as the Initial Management Strategy for Uninvestigated Dyspepsia in Asia. JNM 2015; 21(3):443-44.
- [3]Saba Fakhrieh, Mohammad Javad Ehsani Ardakani, Hamid M Shalmani. Endoscopic evaluation of patients with dyspepsia: result from the large endoscopic data. Gastroenterology and Hepatology from bed to bench 2008; 1(1):25-31.
- [4]Keller J, Layer P. Chronic upper abdominal pain: Diagnostic and therapeutic

- algorithm (Article in German). *Dtsch Med Wochenschr* 2015; 140 (10):718-22.
- [5] Schmidt VM, Bytzer P. Dyspepsia. Investigation and treatment (Article in Danish). *Ugeskr Laeger* 2011; 163 (37):4990-4.
- [6] Sumathi B, Navaneethan U, Jayanthi V. Appropriateness of indications for diagnostic upper gastrointestinal endoscopy in India. *Singapore Med J* 2008; 49(12):970-76.
- [7] Nicholas J Tally and Alexander C Ford. Functional Dyspepsia. *N Engl J med* 2015; 373:1853-63.
- [8] Nermin N Salkic, Muharem Zildzic, Enver Zerem et al. Simple uninvestigated dyspepsia: age threshold for early endoscopy in Bosnia and Herzegovina. *European Journal of Gastroenterology and Hepatology* 2009; 21:39-44.
- [9] Aasma Shaukat, Amy Wang, Ruben D Acosta et al. ASGE Guidelines The role of endoscopy in dyspepsia. *Gastrointestinal Endoscopy* 2015; 82(2):227- 232.
- [10] Altan E, Masaoka T, Farre R et al. acotiamide , anovel gastroprokinetic for the treatment of patients with functional dyspepsia: postprandial distress syndrome. *Expert Rev Gastroenterol hepatol* 2012 6(5):533-44.
- [11] Robert S Fisher and Henry P parkman. Management of nonulcer dyspepsia. *The New England Journal of Medicine* 1998; 11:1376-1381.
- [12] Thomson AB, Barkun AN, Armstrong D et al. The prevalence of clinically significant endoscopic findings in primary care patients with uninvestigated dyspepsia: the Canadian Adult Dyspepsia Empiric Treatment-Prompt Endoscopy (CADET-PE) study. *Aliment Pharmacol Ther* 2003; 17(12):1481-91.
- [13] Helgi Kolk. Evaluation of Symptoms Presentation in Dyspeptic Patient Referred for Upper Gastrointestinal Endoscopy in Estonia. *Croatian Medical Journal* 2004; 45(5):592-98.
- [14] Lopez LH, Dibildox M, Ramirez Barba E et al. Is endoscopy necessary to initiate medical treatment in primary level medical care patients with not investigated dyspepsia? *Rev Gastroenterol Mex* 2003; 68(2):100-6
- [15] Alexander C Ford, Avantika Marwaha, Allen Lim and Paul Moayyed. What is The Prevalence of Clinically Significant Endoscopic Findings in Subjects with Dyspepsia? Systemic Review and Metaanalysis. *Clinical Gastroenterology and Hepatology* 2010; 8:830-37.
- [16] Talk J, Talley NJ, Camilleri M et al. Functional gasroduodenal disorders. *Gastroenterology* 2006; 130:1466-79.
- [17] Richter JE. Dyspepsia: organic causes and differential characteristics from functional dyspepsia. *Scand J Gastroenterol Suppl* 1991; 182:11-6.
- [18] Ahmed Gado, Basel Ebeid, Aida Abdelmohsen, Anthony Axon. Endoscopic evaluation of patients with dyspepsia in a secondary referral hospital in Egypt. *Alexandria Journal of Medicine* 2015; 51:179-184.
- [19] Johannessen T, Petersen H, Klevell PM et al. The predictive value of history in dyspepsia. *Scand J Gastroenterol Suppl* 1990; 25:689-97.

- [20] Maad Midhat, Falih Al-Obaidi, Basam A Gazala, Maithem Hatam. Management of non organic dyspepsia. *IJGE* 2002; 2(1):7-13.
- [21] Tack J, Talley NJ. Functional dyspepsia – symptoms, definitions and validity of Rome III criteria. *Nat Rev Gastroenterol Hepatol* 2013; 10(3):134-41.
- [22] Jung HK, Kim SE, Shim KN, Jund SA. Association between dyspepsia and upper endoscopic findings (Article in Korean). *Korean J Gasroenterol* 2012; 59(4):275-81.
- [23] Glenn M E, Jason A D, Douglas O F et al. ASGE Guidelines the role of endoscopy in dyspepsia. *Gastrointestinal Endoscopy* 2001; 54(6):815-17.
- [24] Vakil N, Halling K, Ohlsson, Wernersson B. Symptom overlap between postprandial distress and epigastric pain syndromes of the Rome III dyspepsia classification. *AmJ Gastroenterol* 2013; 108(5):767-74.
- [25] Wallace MB, Durkalski VL, Vaughan J, et al. Age and alarm symptoms do not predict endoscopic findings among patients with dyspepsia: a mukticentre database study. *Gut* 2001; 49 (1):29-34.
- [26] Sanjiv Mahadeva and Khean –Lee Goh. Clinically Significant Endoscopic Findings in a Multi-Ethnic Population with Uninvestigated dyspepsia. *Dig Dis Sci* 2012; 57(12):3205-3212.
- [27] Piatek-Guziewicz A, Przybylska Felus M, Dynowski W et al. Endoscopic and histopathological findings of the upper gastrointestinal tract in patients with functional and organic dyspepsia (Article in Polish). *Przegl Lek* 2014; 71(4): 204-9.
- [28] Vasilliou C, Xiromeritou V, Kafiri G et al. Endoscopic and histological findings and Helicobacter pylori status in patients with reflux and /or dyspeptic symptoms: a recent Greek study. *Gastroenterol Nurs* 2014; 37(6):431-8.
- [29] Jones RH, Lydeard SE, Hobbs FD et al. Dyspepsia in England and Scotland. *Gut* 1990; 31:401-5.
- [30] Tibblin G, Bengtsson C, Furunes B, Lapidus L. Symptoms by age and sex .The population studies of men and women in Gothenburg, Sweden. *Scand J Prim Health Care* 1990; 8:9-17.
- [31] Ayuo PO, Some FF and Kiplagat J. Upper gastrointestinal endoscopy findings in patients referred with upper gastrointestinal symptoms in Eldoret, Kenya: A retrospective review .*East African Medical Journal* 2014; 91 (8):267-73.
- [32] Erichsen R, Robertson D, Farkads DK, Pedersen L. Erosive reflux disease increases risk for esophageal adenocarcinoma , compared to with nonerosive reflux. *Clin Gastroenterol Hepatol* 2012; 10:475-80.
- [32] Erichsen R, Robertson D, Farkads DK, Pedersen L. Erosive reflux disease increases risk for esophageal adenocarcinoma , compared to with nonerosive reflux. *Clin Gastroenterol Hepatol* 2012; 10:475-80.