



ORIGINAL ARTICLE

Hiatal hernia in patients with dyspepsia undergoing esophagogastrosocopy.

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Article Citation: Muaz M, Butt NI, Ashfaq F, Anwar A, Aftab S, Nasim H. Hiatal hernia in patients with dyspepsia undergoing esophagogastrosocopy. Professional Med J 2022; 29(8):1152-1156. https://doi.org/10.29309/TPMJ/2022.29.08.6938

ABSTRACT... Objective: To find out the frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy. **Study Design:** Descriptive, Cross-sectional study. **Setting:** Departments of Medicine and Gastroenterology, Services Hospital Lahore. **Period:** December 2018 to June 2019. **Material & Methods:** A total of 195 patients with dyspepsia aged 20 to 60 years of both sexes were enrolled. Patients with history of gastric or duodenal ulcer, pregnant women, Chronic Renal Failure and Chronic Liver Disease were excluded. After taking informed consent, esophagogastrosocopy was done in each patient and presence or absence of hiatal hernia was noted. **Results:** Out of 195 patients enrolled 104 (53.3%) were male. Mean age was 41.3 ± 8.8 years and mean duration of disease 6.3 ± 2.0 months. Mean BMI was 27.5 ± 3.0 kg/m² and 101 (51.7%) had BMI <27 kg/m². Thirty-seven (19.8%) were smokers while sedentary lifestyle was reported in 93 (47.6%). Hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found in 16 (8.21%) patients. **Conclusion:** We conclude that hiatal hernia was not uncommon in patients with dyspepsia undergoing esophagogastrosocopy. Age and smoking status had a significant association with hiatal hernia while no association with sex, duration of disease, BMI, occupation or lifestyle.

Key words: Dyspepsia, Esophagogastrosocopy, Hiatal Hernia.

INTRODUCTION

Being a common disorder, dyspepsia is seen in up to 40% of population in Great Britain and majority have no detectable reason for it.¹ When investigations are not able to detect an organic cause (like peptic ulcer, esophagitis or malignancy) then dyspepsia is classified as functional dyspepsia.² Functional dyspepsia and gastroesophageal reflux disease are a leading cause of upper gastrointestinal symptoms.³ Rome IV criteria defines functional dyspepsia as recurrent upper gastrointestinal symptoms on average once per week for at least 3 months with symptom onset more than 6 months ago and having no abnormalities on investigation including esophagogastrosocopy.³ It is also postulated that functional dyspepsia consists of 2 subgroups: the postprandial distress syndrome with postprandial fullness and early satiety; and the epigastric pain syndrome with a more constant and less meal-related pain syndrome.²

Hiatal hernia and lower esophageal sphincter both play vital but independent roles in development of gastroesophageal reflux disease, constituting the two-sphincter hypothesis.⁴ The gastroesophageal junction, being an anatomically complex area, acts as an fundamental anti-reflux barrier. However, in patients with hiatal hernia the gastroesophageal junction is incompetent and esophageal acid clearance becomes compromised leading to development of gastroesophageal reflux disease.⁵

In an Indian study, frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found to be 7.5%.⁶ In a study done in Sri Lanka, frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found to be 50.5%.⁷ Another study done in Sri Lanka has shown this frequency of hiatus hernia as 8.1%.⁸ On searching the literature, we have found just the international statistics regarding this issue and no such

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Article received on: 14/12/2021
Accepted for publication: 19/02/2022

study is available for our Pakistani population. Moreover previous studies have shown variable results in different populations which shows that prevalence of hiatal hernia among patients with dyspepsia undergoing esophagogastroscope vary from population to population, so local evaluation of data is required.

We decided to conduct this study to find out the frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastroscope. Then on the basis of these results, some management plans can be opted in these particular patients to lower morbidity and improve quality of life. The objective of the study was to find out the frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastroscope.

MATERIAL & METHODS

This descriptive, cross-sectional study was carried out at Departments of Medicine and Gastroenterology, Services Hospital Lahore from December 2018 to June 2019 after approval from ethical committee. Sample size of 195 cases was calculated with 95% confidence level and 5% margin of error.⁶ Dyspepsia was defined as presence of history of heartburn, nausea, belching, or upper abdominal pain and bitter taste occurring at least 3 times per week for more than 3 months. Hiatus hernia was confirmed when the endoscope was about to enter the stomach or on retrograde view once inside the stomach (gastric folds to the left of the scope shaft extending up into the hernia) and if any doubt remained, the patient was asked to sniff through the nose, which used to cause the diaphragmatic crura to approximate, seen as a pinch, closing the lumen. Smoking was defined as >10 cigarettes per day for at least last 2 years. Simple lifestyle was defined as at least 30 minutes physical exercise daily while sedentary lifestyle as no regular physical exercise. Patients with a history of gastric or duodenal ulcer, pregnant women, with any bleeding disorder like hemophilia, with chronic liver disease and with chronic renal failure were excluded from the study.

Using non-probability consecutive sampling, 195 patients with dyspepsia aged 20 to 60

years of both sexes were enrolled after taking informed consent. After taking demographic information, detailed history and examination, esophagogastroscope was done on each patient and presence or absence of hiatal hernia was noted. Data was analyzed using SPSS 17.0. Mean and standard deviation were calculated for age, height, weight, BMI and duration of disease. Gender, place of living, smoking, lifestyle, occupation and hiatal hernia were presented as percentages. Stratification for outcome was done for age, gender, BMI, duration of disease, smoking, lifestyle and occupation using Chi-Square test keeping p-value ≤ 0.05 as significant.

RESULTS

Out of 195 patients enrolled in this study, 104 (53.3%) were male with male to female ratio 1.2:1. Age range was from 20 to 60 years with mean age of 41.3 ± 8.8 years and 117 (60.0%) patients aged between 20 to 40 years. Mean duration of disease was 6.3 ± 2.0 months with 125 (64.1%) patients having duration more than 6 months. Mean BMI 27.5 ± 3.0 kg/m² and 101 (51.7%) patients had BMI <27 kg/m² whereas BMI ≥ 27 kg/m² was seen in 94 (48.3%) patients. Thirty-seven (19.8%) patients were smokers while sedentary lifestyle was reported in 93 (47.6%).

Hiatal hernia among patients with dyspepsia undergoing esophagogastroscope was found in 16 (8.21%) patients. Stratification of hiatal hernia with respect to demographic variables is shown in Table-I. Age and smoking status had a statistical significant association with hiatal hernia. No association of hiatal hernia was seen with sex, duration of disease, BMI, occupation or lifestyle.

DISCUSSION

Dyspepsia is an indicator of upper gastrointestinal disease and most patients have either an organic or functional disorder of upper gastrointestinal tract. Clinical features of dyspepsia include nausea, lack of appetite, vomiting, bloating, early satiety, epigastric discomfort and pain affecting up to 40% of the population.¹ Esophagogastroscope is useful for initial evaluation in dyspepsia. Hiatal hernia is thought to be related closely with reflux esophagitis, Barrett's esophagus and

esophageal adenocarcinoma; and symptomatic GERD patients have higher rate of hiatal hernia presence as compared to those who do not have reflux symptoms.⁹

Demographic Variables	Hiatal Hernia		P-Value
	Present	Absent	
Age (years):			
20-40	05 (4.3%)	112 (95.7%)	0.001
41-60	11 (14.2%)	67 (85.8%)	
Sex:			
Male	06 (5.8%)	98 (94.2%)	0.185
Female	10 (10.9%)	81 (89.1%)	
Duration of Disease (months):			
Less than 6	08 (6.4%)	117 (93.6%)	0.220
More than 6	08 (11.5%)	62 (88.5%)	
Body Mass Index (kg/m²):			
Less than 27	07 (6.9%)	94 (93.1%)	0.501
More than 27	09 (9.6%)	85 (90.4%)	
Smoking:			
Yes	09 (24.3%)	28 (75.7%)	0.000
No	07 (4.5%)	151 (95.5%)	
Lifestyle:			
Simple	11 (10.7%)	91 (89.3%)	0.169
Sedentary	05 (5.3%)	88 (94.6%)	
Occupation:			
Field	04 (6.7%)	56 (93.3%)	0.856
Office	06 (9.4%)	58 (90.6%)	
Domestic	06 (8.5%)	65 (91.5%)	

Table-I. Stratification of outcome with regards to demographic variables

More than half of patients with reflux esophagitis have hiatal hernia diagnosed by endoscopy or radiography.¹⁰ Moreover hiatal hernia was seen in over 70% patients with Barrett's esophagus¹¹ and the patients with Barrett's esophagus had a larger sized hiatal hernia as compared to patients without Barrett's.¹² Furthermore the presence of hiatal hernia doubles the risk of gastric and esophageal adenocarcinoma and the risk of developing esophageal adenocarcinoma may increase 8-fold in presence of combination of both hiatal hernia and reflux symptoms.¹³

Ethnic, genetic and lifestyle differences may affect the prevalence of hiatal hernia, reflux symptoms and risk of malignancy. Kang et al.¹⁴ reported presence of hiatal hernia in dyspepsia patients in Singapore to be 4% as opposed to 23% in England

showing that the differences in predisposing factors between European and Asian populations might be responsible for variability in prevalence of hiatus hernia. The prevalence of hiatus hernia in Asian populations was reported to vary from as low as 2.2%¹⁵ in Taiwan, 2.9%¹⁶ in Singapore and 4.1%¹⁷ in Korea to as high as 17.5%¹⁸ in Japan. While geographical variation in prevalence of hiatus hernia is often seen, it remains uncertain whether these differences are caused by lifestyle or genetic differences or whether they merely depict variability in diagnostic criteria and patient selection. We conducted the present study to find out the frequency of hiatal hernia in patients with dyspepsia undergoing esophagogastrosocopy in our Pakistani population. Out of 195 patients enrolled in our study, 104 (53.3%) were male with male to female ratio 1.2:1. Hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found in 16 (8.21%) patients. The result of our study are similar to the study by Krithika et al.⁶ in which frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found to be 7.50%. In the study by Umakanth et al.⁷ frequency of hiatal hernia among patients with dyspepsia undergoing esophagogastrosocopy was found to be 50.5%. Another study done in Sri Lanka has shown this frequency as 8.1%.⁸

Obesity is commonly thought to be a risk factor for developing reflux symptoms and weight loss and lifestyle modifications form a part of therapy in GERD patients. However it is not clear if obesity itself raises the risk of reflux or if the type of food eaten by obese people increase reflux risk or if a combined link with hiatus hernia is responsible.¹⁹ Wilson et al.²⁰ showed obesity to be a risk factor for reflux oesophagitis and hiatal hernia. Barak et al.²¹ reported body mass index to be an independent risk factor for developing both hiatus hernia and reflux oesophagitis. In our study, mean BMI 27.5 ± 3.0 kg/m² and 101 (51.7%) patients had BMI <27 kg/m² whereas BMI ≥ 27 kg/m² was seen in 94 (48.3%) patients. Hiatal hernia in patients with BMI >27kg/m² was seen in 9 out of 85 (10.58%) whereas 7 out of 94 (7.44%) having BMI <27kg/m² had hiatal hernia, however there was no statistically significant association.

The prevalence of hiatus hernia and oesophagitis rises with increasing age.^{22,23} However no definite sex differences have been reported.^{22,23,24} In our study, age range was from 20 to 60 years with mean age of 41.3±8.8 years and 117 (60.0%) patients aged between 20 to 40 years. Mean duration of disease was 6.3±2.0 months with 125 (64.1%) patients having duration more than 6 months. Thirty-seven (19.8%) patients were smokers while sedentary lifestyle was reported in 93 (47.6%). On stratification it was seen that age and smoking status had a statistical significant association with hiatal hernia whereas no association of hiatal hernia was seen with sex, duration of disease, BMI, occupation or lifestyle in our study. Loffeld et al.²⁶ reported the incidence of hiatus hernia over a study period of up to 8 years showing 19.9% developed a hiatus hernia per annum and patients with older age, female sex and reflux symptoms were more likely to develop hiatus hernia. It should be noted that prevalence of hiatal hernia in asymptomatic healthy individuals is of valuable interest but reliable data is not available because majority of the studies have been conducted on symptomatic patients undergoing investigation rather than asymptomatic community individuals. A study demonstrated 33% asymptomatic individuals having hiatal hernia diagnosed on radiography.²⁷ In Korea, hiatus hernia was reported to be present in 11% of asymptomatic participants in whom endoscopy was done as part of routine medical check-up.²⁸ However these participants may represent a self-selected group that may not be comparable to the general population.

CONCLUSION

We conclude that hiatal hernia was not uncommon in patients with dyspepsia undergoing esophagogastrosocopy. Age and smoking status had a significant association with hiatal hernia while no association with sex, duration of disease, BMI, occupation or lifestyle.

Timely screening for hiatal hernia should be done in dyspepsia patients so that preventive medical and lifestyle measures may be taken to reduce morbidity and improve quality of life.






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2	Nauman Ismat Butt	Literature review, Data analysis, Manuscript writing.	
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5	Sabeen Aftab	Conception design correction and review.	
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