

# Ultrasound and Upper GI Endoscopy in Patients with Common Upper GI Complaints and its Risk Factors: A Observational Study

Bhanusagar Gajula<sup>1</sup>, P M S Chandana Priyanka<sup>2</sup>, M S Harika Kapu<sup>2</sup>, M Tarun Chowdary<sup>1</sup>

<sup>1</sup>Final Year Post Graduate, Department of General Surgery, Siddhartha Medical College, Vijayawada, Andhra Pradesh, India, <sup>2</sup>Assitant Professor, Department of General Surgery, Siddhartha Medical College, Vijayawada, Andhra Pradesh, India

## Abstract

**Introduction:** Upper gastrointestinal symptoms are one of the most common complaints presenting to our outpatient services on a day-to-day basis. These range from simple epigastric pain to hematemesis, which are associated with many known risk factors such as smoking alcohol and others. However, these symptoms are same to some serious underlying pathology such as gastritis, gastroesophageal reflux disease, occult portal hypertension, and other gastric pathologies even gastric cancer; hence, a flexible upper gastrointestinal (GI) endoscopy with or without biopsy with helps us to evaluate these patients and detection of any serious pathology early and reduce the overall morbidity by early intervention if any necessary.

**Materials and Methods:** A study conducted at Siddhartha Medical College with 100 patients from convenient sampling with chronic upper GI symptoms and risk factors, it is an observational study.

**Results:** The sensitivity of ultrasound and endoscopy is comparable in setting of normal mucosa and gastritis, but endoscopy has better sensitivity in diagnosing gastric carcinoma and peptic ulcer disease as well as picking up varices in the lower esophagus and pathologies of duodenum.

**Conclusion:** Early endoscopic testing is required when patients have chronic upper GI symptoms and associated risk factors and with addition advantage of evaluating esophageal and duodenal pathologies.

**Key words:** GERD, LFT, NSAIDS, Ultrasound abdomen, Upper gastrointestinal endoscopy

## INTRODUCTION

The phrase “upper gastrointestinal (GI) symptoms” is commonly used to describe a wide range of complaints including dyspeptic and gastroesophageal symptoms, as well as peptic ulcer disease.<sup>[1-4]</sup> Such symptoms are a common cause of healthcare utilization, resulting in increased direct medical costs<sup>[5]</sup> as well as costs to individuals and society due to lost work time and productivity (indirect costs), disrupted social life, and lowered quality of life (intangible costs).<sup>[5-7]</sup>

GI symptoms such as heartburn, indigestion/dyspepsia, bloating, and constipation are common in the community. However, these symptoms may be misinterpreted and their impact and significance misunderstood both by health-care providers and patients.<sup>[8]</sup>

These are the common complaints affecting 25–40% of the general population during their lifetime.<sup>[9-11]</sup> In a systematic review, Heading<sup>[12]</sup> reported that prevalence of upper abdominal pain or discomfort ranged from 8 to 54%, while that of heart-burn ranged from 10 to 48%, for regurgitation from 9 to 45% and for both/either 21–59%. The prevalence of the upper GI symptoms varies with definition used, population involved (national vs. regional, Asian vs. Western), recall period, sex, and age.<sup>[13]</sup> Upper GI symptoms are a common cause of healthcare utilization and substantially affect the quality of life and psychological well-being of those affected.<sup>[7,14-16]</sup>

### Access this article online



www.ijss-sn.com

Month of Submission : 02-2023

Month of Peer Review : 03-2023

Month of Acceptance : 04-2023

Month of Publishing : 04-2023

**Corresponding Author:** Dr. P M S Chandana Priyanka, Department of General Surgery, Siddhartha Medical College, Vijayawada, Andhra Pradesh, India.

Due to the recent increased interest in health and the National Cancer Screening Project, the demand for upper and lower GI endoscopy procedures is rapidly increasing. Although this applies to a training course in any field, mastering endoscopy basics is very important because when the process is imprecise or incorrectly performed, it can cause severe complications, endangering the patient's health or life.<sup>[17-19]</sup>

Insertion of the endoscope through the oral cavity and pharynx into the esophagus is the most difficult part of the process for trainee doctors. Incorrect technique can cause serious complications. Once the endoscope is inserted, detailed observation without blind spots is essential for a perfect procedure. Quality control in endoscopy procedures has recently come under heavy discussion; as such, the storage of endoscopy data, and photo images in particular, is very important. Specifically, when a patient is transferred for the treatment of a discovered lesion, photo images can be a very useful tool for exchanging opinions between doctors. Photo images are also useful in observing lesion changes during follow-up endoscopy, in educating trainee doctors, or in securing evidence in preparation for the remote possibility of a medical claim.<sup>[20-23]</sup>

### Aim

The general aim of the study was to study the various endoscopic findings and its usefulness in patients with the upper GI tract (GIT) symptoms with or without alarm symptoms.

### Objectives

The aims of this study were as follows:

1. To observe the causes and risk factor of the upper GIT symptoms
2. To observe the endoscopic presentation of the upper GIT symptoms
3. To observe the usefulness of endoscope and ultrasound (USG) in the diagnosis of the upper GIT symptoms.

## MATERIALS AND METHODS

### Study Setting

Study was done at Siddhartha Medical College and General Hospital, Vijayawada.

### Study Design

It was a observational study conducted at Surgery Department of Siddhartha Medical College and General Hospital, Vijayawada.

### Study Subject

Study has been included all clinically suspected patients

with the upper GI symptoms and admitted in surgery department of Siddhartha Medical College and General Hospital, Vijayawada.

### Inclusion Criteria

The following criteria were included in the study:

- Patients with age >18 years, showing symptoms of the upper GI for 4 or more than 4 weeks
- Patients with symptoms like
- Upper abdominal pain, vomiting's, hematemesis/melena, dysphagia, lump in abdomen, anorexia/weight loss, sensation of fullness after meals, weakness and tiredness, and retrosternal burning with regurgitation
- Patients with signs like
- Epigastric tenderness, supraclavicular lymph nodes, lump in the upper abdomen, visible upper abdominal peristalsis, and jaundice.

### Exclusion Criteria

The following criteria were excluded from the study:

- Pregnant and lactating women, patients who are known cases of chronic pancreatitis and liver disease, and unwilling or unfit patients for endoscopy.

### Sampling Technique

This study was convenient sampling.

### Sampling Size

This study was 100.

### Study Period

This study was November 2021–December 2022.

### Data Collection Method

The data were collected from the patients using a semi-structured questionnaire. The sociodemographic factors will be taken by direct interview.

### Investigations

The following investigations were routinely done before endoscopic examination:

- Screening for viral's, hemoglobin, stool for occult blood, LFT if jaundice is present.

## RESULTS

**Table 1: Age distribution of study participants (n=100)**

Age (in years)	Number (%)
10–35	(19)
35–50	(40)
50–65	(29)
>65	(12)
Mean age±SD	50.3±6.4

**Table 2: Gender distribution of study participants (n=100)**

Gender	Number (%)
Male	(68)
Female	(32)

**Table 3: Risk factor distribution of study participants (n=100)**

Risk factor	Number (%)
Alcohol	(23)
Tobacco chewing	(18)
Smoking	(16)
NSAIDs	(4)
Aspirin	(2)
None	(37)

**Table 4: Distribution of symptoms among study participants (n=100)**

Symptoms	Number (%)
Blood in vomitus	9
Black colored stools	6
Abdominal distension	14
Epigastric pain	48
Dysphagia	16
Odynophagia	8
Change in voice	13
Retrosternal pain	35
Reflux	23

**Table 5: Endoscopic finding among study participants (n=100)**

Disease	Number (%)
Gastritis	(47)
Gastroesophageal reflux disease	(6)
Esophageal cancer	(2)
Esophagitis	(4)
Gastric ulcer	(10)
Gastric cancer	(2)
Esophageal varices	(5)
Duodenitis	(6)
Normal	(18)

**Table 6: USG finding among study participants (n=100)**

Disease	Number (%)
Gastric cancer	1
Portal HTN	4
Gastritis	47
Normal	48

**Table 7: Sensitivity USG to predict upper gastrointestinal symptoms in study population (n=100)**

Disease	Endoscopic findings	Detected right by USG	Sensitivity of USG (%)
Gastric cancer	2	1	50
Esophageal varices	5	4	80
Gastritis	47	47	100.0

## CONCLUSION

The study titled an observational study “A observational study into findings of USG and upper GI endoscopy in patients with common upper GI complaints and its risk factors” was carried out in the period from November 2021 to December 2022 among 100 patients.

1. Highest number of participants (2/5<sup>th</sup>) belonged to age group of 35–50 years. Mean age was 50.3 years
2. Male: female ratio was 2.1:1. Male participants were almost double than female
3. Alcohol was the commonest risk factor observed among participants followed by tobacco chewing and smoking
4. Diabetes was the most common comorbidity observed among participants followed by fatty liver psychological stress. Almost 2/5<sup>th</sup> participants have more than equal to three comorbidities
5. Epigastric pain and retrosternal pain were commonest symptoms observed among participants
6. According to endoscopic finding, gastritis was found among almost half of the patients. Normal endoscopy
7. According to USG finding, gastric cancer was found among 1% of the patients. Normal USG was observed among 48 participants
8. Sensitivity of USG to diagnose to gastric cancer was very low but more than 80.0% sensitivity was found for USG in diagnosis of portal HTN.

## SUMMARY

The present study was conducted with the aim to study the various endoscopic findings and its usefulness in patients with chronic upper GIT symptoms with or without alarming symptoms. In our observational study done among 100 clinically suspected patients with the upper GI symptoms and admitted in surgery department of Siddhartha Medical College and General Hospital, Vijayawada, during November 2021–December 2022, we found that endoscopy is far more relevant/reliable tool for diagnosing pathologies related to upper GIT with added advantage of finding esophageal pathologies and duodenal

pathologies. Since the symptoms and signs are less reliable indicators of the disease progression, and with added advantage of biopsy and intervention from endoscopy, it is always helpful to deliver the utmost and appropriate treatment to the patients suffering from chronic upper GI symptoms with risk factors.

## REFERENCES

1. Talley NJ; American Gastroenterological Association. American Gastroenterological Association medical position statement: Evaluation of dyspepsia. *Gastroenterology* 2005;129:1753-5.
2. Kahrilas PJ, Shaheen NJ, Vaezi MF, Hiltz SW, Black E, Modlin IM, *et al.* American Gastroenterological Association Medical Position Statement on the management of gastroesophageal reflux disease. *Gastroenterology* 2008;135:1383-91.
3. Barkun AN, Bardou M, Kuipers EJ, Sung J, Hunt RH, Martel M, *et al.* International consensus recommendations on the management of patients with nonvariceal upper gastrointestinal bleeding. *Ann Intern Med* 2010;152:101-13.
4. Westbrook JJ, McIntosh JH, Talley NJ. The impact of dyspepsia definition on prevalence estimates: Considerations for future research. *Scand J Gastroenterol* 2000;35:227-33.
5. Haycox A, Einarson T, Eggleston A. The health economic impact of upper gastrointestinal symptoms in the general population: Results from the Domestic/International Gastroenterology Surveillance Study (DIGEST). *Scand J Gastroenterol Suppl* 1999;231:38-47.
6. Enck P, Dubois D, Marquis P. Quality of life in patients with upper gastrointestinal symptoms: Results from the Domestic/International Gastroenterology Surveillance Study (DIGEST). *Scand J Gastroenterol Suppl* 1999;231:48-54.
7. Locke GR 3<sup>rd</sup>, Talley NJ, Fett SL, Zinsmeister AR, Melton LJ 3<sup>rd</sup>. Prevalence and clinical spectrum of gastroesophageal reflux: A population-based study in Olmsted County, Minnesota. *Gastroenterology* 1997;112:1448-56.
8. Common GI symptoms. *Advancing Gastroenterology, Improving Patients Care*. United States: American College of Gastroenterology; 2019. Available from: <https://gi.org/topics/common-gi-symptoms> [Last accessed on 2019 Mar 20].
9. Mahadeva S, Goh KL. Epidemiology of functional dyspepsia: A global perspective. *World J Gastroenterol* 2006;12:2661-6.
10. 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 Motil* 2011;17:235-44.
11. El-Serag HB, Talley NJ. Systematic review: The prevalence and clinical course of functional dyspepsia. *Aliment Pharmacol Ther* 2004;19:643-54.
12. Heading RC. Prevalence of upper gastrointestinal symptoms in the general population: A systematic review. *Scand J Gastroenterol Suppl* 1999;231:3-8.
13. Sobieraj DM, Coleman SM, Coleman CI. US prevalence of upper gastrointestinal symptom: A systematic literature review. *Am J Manag Care* 2011;17:e449-58.
14. Hycox A, Einarson T, Eggleston A. The health economic impact of upper gastrointestinal symptoms in the general population: Results from Domestic/International Gastroenterology Surveillance Study (DIGEST). *Scand J Gastroenterol Suppl* 1999;231:38-47.
15. Talley NJ, Boyce P, Jones M. Dyspepsia and health care seeking in a community: How important are psychological factors? *Dig Dis Sci* 1998;43:1016-22.
16. Talley NJ. Quality of life in functional dyspepsia. *Scand J Gastroenterol Suppl* 1996;221:21-2.
17. Cappell MS. Safe "hands-on" teaching of endoscopy to beginning gastroenterology fellows. *Gastrointest Endosc* 2011;73:847.
18. Northup PG, Argo CK, Muir AJ, Decross AJ, Coyle WJ, Oxentenko AS. Procedural competency of gastroenterology trainees: From apprenticeship to milestones. *Gastroenterology* 2013;144:677-80.
19. Multisociety Task Force on GI Training. Report of the multisociety task force on GI training. *Am J Gastroenterol* 2009;104:2659-63.
20. Cha JM. Quality improvement of gastrointestinal endoscopy in Korea: Past, present, and future. *Korean J Gastroenterol* 2014;64:320-32.
21. Kwon KA, Choi IJ, Kim EY, Dong SH, Hahm KB. Highlights of the 48<sup>th</sup> seminar of Korean Society of Gastrointestinal Endoscopy. *Clin Endosc* 2013;46:203-11.
22. Lee YK, Park JB. Steps of reprocessing and equipments. *Clin Endosc* 2013;46:274-9.
23. Park JM. Quality control for upper gastrointestinal endoscopy. *Korean J Gastrointest Endosc* 2010;40:343-6.

**How to cite this article:** Gajula B, Priyanka PMSC, Kapu MSH, Chowdary MT. Ultrasound and Upper GI Endoscopy in Patients with Common Upper GI Complaints and its Risk Factors: A Observational Study. *Int J Sci Stud* 2023;11(1):18-21.

**Source of Support:** Nil, **Conflicts of Interest:** None declared.