

Evaluation of upper gastro-intestinal endoscopic findings in patients with gallstone disease

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Abstract

Background: Gallstone disease is one of the most common problems affecting the digestive tract. Incidence of asymptomatic gallstones has been understood recently, largely due to application of USG scanning of people for other reasons. Most of the gall stones are silent / asymptomatic with only 1 – 4 % lifetime risk of becoming symptomatic

Methods: Patients with USG proven gall-stones presenting with dyspepsia attending OPD or admitted in surgery department were taken for the study. Details of cases were recorded including history and clinical examination and investigations as per the pretested proforma. Upper GI endoscopy was performed to look for significant lesions.

Results: Gall Stone Disease with atypical presentation was found to be more common in female patients of the age group between 30-60 years. Forty six patients (73.02%) had significant EGD findings and 17 patients (26.98%) had normal EGD study. Pain abdomen was the most common dyspeptic symptom, accounting for 77.77%, followed by post-prandial fullness which accounted for 63.49%. In patients having clinically significant EGD findings, gastritis/gastric ulcer (57.14%) accounted for the most common finding, followed by hiatal hernia (36.51%).

Conclusions: Patients presenting with dyspepsia and gall-stones, having significant EGD findings, should be treated initially by medical management and surgery to be considered in case of non-resolution of symptoms. Pre-operative EGD will not only reveal presence of concomitant upper digestive tract diseases but also significantly alters the management of gall stones by reducing the number of inadvertent cholecystectomies. It is also cost effective

Keywords: cholelithiasis, upper gi findings, dyspepsia.

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I. Introduction

Gallstone disease is one of the most common problems affecting the digestive tract.¹ Autopsy reports have shown a prevalence of gallstones from 11 to 36%.¹ A few autopsy studies and clinical reports in the 1960s indicated that gallstones were prevalent in Northern India.² Approximately 15% of subjects with dyspepsia in Sikkim and North Bengal area have gallstones.²

There has also been a marked rise in the incidence of gall stones in South India over the past decade, the likely causes being the changes in lifestyle and also the advances in imaging techniques now available with us to diagnose them.

Silent gallstones are diagnosed as incidental findings most commonly by abdominal ultrasound done for various unrelated disorders. The previous controversy regarding the management of silent gall stones has been resolved by various prospective studies which have shown that the vast majority of silent gall stones will not cause symptoms or complication during later life.

The symptomatology of gall stone disease is varied, often non-specific. The symptoms may be acute or chronic. Chronic symptoms are usually dyspeptic classically referred to as flatulent dyspepsia. In these patients with chronic symptoms, it is important to stress that demonstration of gall stones does not exclude other disorders which may be responsible for the symptoms.

This study focuses on the yield of pre – op upper gastrointestinal endoscopy as an investigative modality to find out such other associated disorders of upper gastrointestinal tract in the patients with ultra-

sonogram proven gall stones presenting with dyspeptic symptoms.

II. Materials And Methods

STUDY SITE:

The study was conducted in the department of General surgery St. Teresa's general hospital, Sanathnagar, Hyderabad

STUDY POPULATION :

Sixty three patients attending OPD or getting admitted in Department of General Surgery were included in the study, considering the inclusion and exclusion criteria.

STUDY DESIGN:

This is a Prospective Observational study.

STUDY DURATION:

The study was carried out within a period of 2 Years from September 2014 to August 2016.

METHOD OF COLLECTION OF DATA:

- Patients with USG proved gall-stones attending OPD or admitted in surgery department were taken for the study.
- Details of cases were recorded including history and clinical examination and investigations as per the pretested proforma.
- Upper GI endoscopy was performed to look for significant lesions.

INCLUSION CRITERIA:

1. Patients of age > 18 years of age.
2. Patients who have either single or multiple stones in gall bladder only as shown in ultrasound.
3. Patients presenting with any one or more of the following symptoms
 - A. discomfort in upper abdomen
 - B. nausea or vomiting
 - C. bloating or fullness of abdomen
4. Patients who are consenting to participate in the study.

EXCLUSION CRITERIA:

1. Patients less than 18 years of age.
2. Patients with acute abdomen and / or biliary colicky pain.
3. Patients whose general condition is not stable.
4. Patients not consenting for the study.
5. Patients with haemolytic anemia.
6. Patients who have undergone cholecystectomy.
7. Patients with complicated gallstone disease: choledocholithiasis, obstructive jaundice, cholangitis, gallstone pancreatitis, cholecystoenteric fistula, gallbladder neoplasm, previous biliary/pancreatic surgery, previous gastric surgery.
8. Patients who were lost for follow-up.

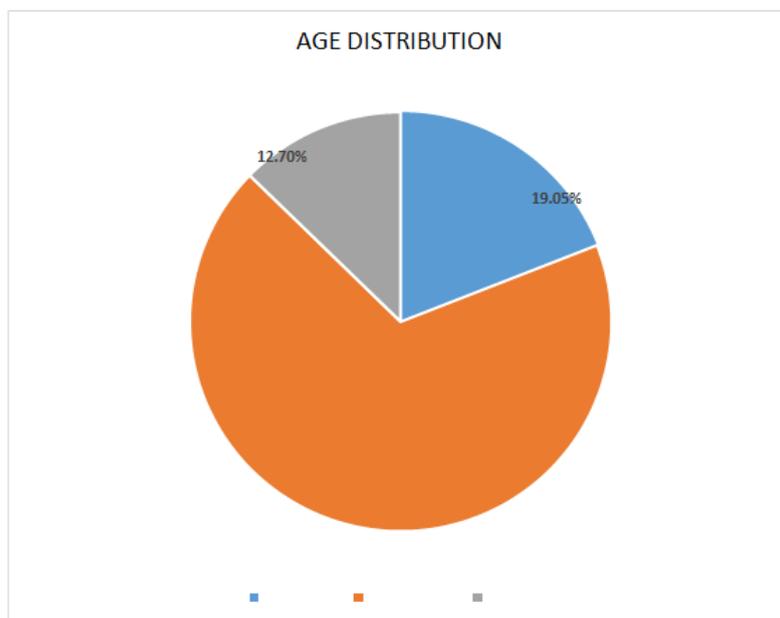
SAMPLING:

Patients fulfilling the inclusion and exclusion criteria have been taken up for the study. Findings will be analyzed using graphs

III. Results

AGE DISTRIBUTION

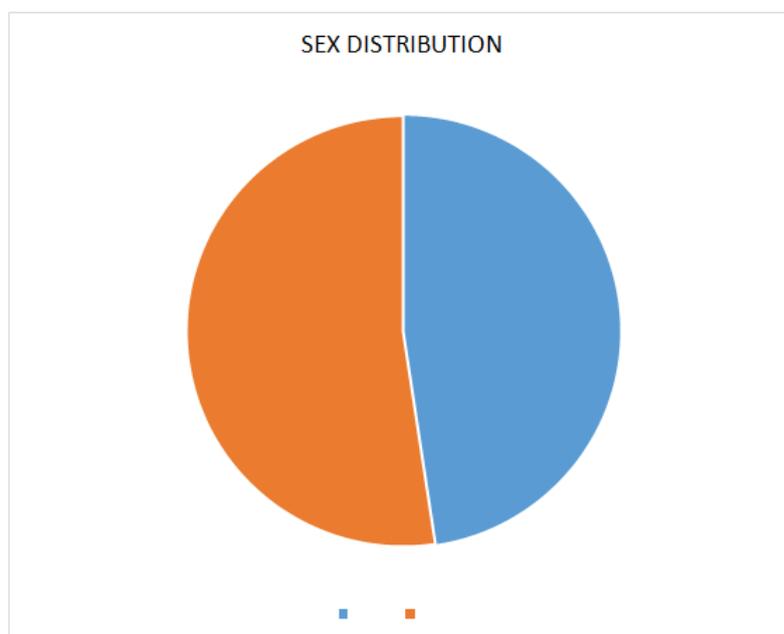
AGE	NO. OF CASES	PRESENT SERIES (%)
<30 YEARS	12	19.05%
30-60 YEARS	43	68.25%
>60 YEARS	8	12.70%



In the present study, the most common age group presenting with cholelithiasis and dyspepsia was between 30 to 60 years, accounting for 68.25%, followed by less than 30 years age group with 19.05%.

SEX DISTRIBUTION

SEX	NO. OF CASES	PRESENT SERIES (%)
MALE	30	47.62%
FEMALE	33	52.38%

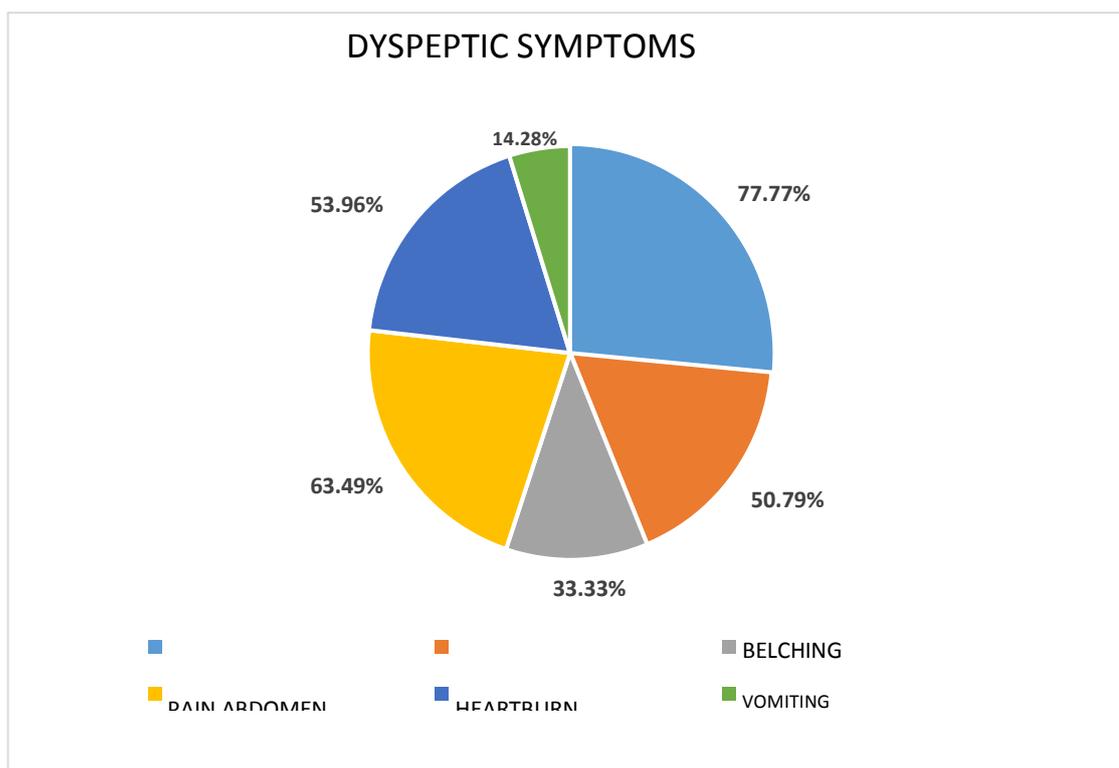


In the present study, cholelithiasis with dyspepsia was more common in females, constituting 52.38% of the study group.

DYSPEPTIC SYMPTOMS

SYMPTOMS	NO. OF CASES	PRESENT SERIES (%)
PAIN ABDOMEN	49	77.77%

HEARTBURN	32	50.79%
BELCHING	21	33.33%
POST-PRANDIAL FULLNESS	40	63.49%
NAUSEA	34	53.96%
VOMITING	9	14.28%



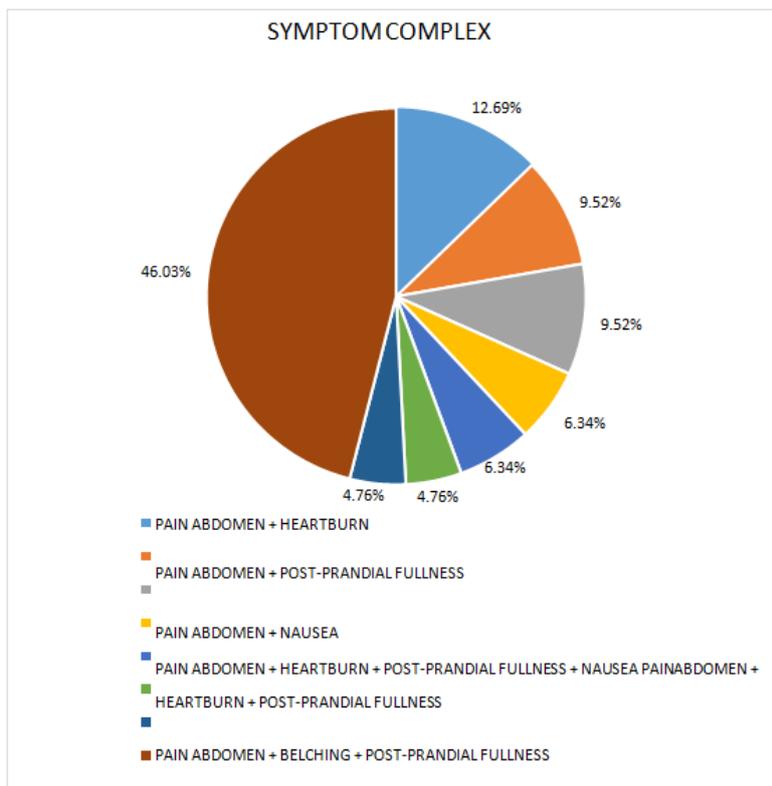
In the present study, pain abdomen was the most common dyspeptic symptom, accounting for 77.77%, followed by post-prandial fullness which accounted for 63.49%. Other symptoms included nausea (53.96%), heartburn (50.79%), belching (33.33%) and vomiting (14.28%).

SYMPTOM COMPLEX

SYMPTOM COMPLEX	NO. OF CASES	PRESENT STUDY (%)
PAIN ABDOMEN +HEARTBURN	8	12.69%
PAIN ABDOMEN +POST-PRANDIAL FULLNESS	6	9.52%
PAIN ABDOMEN + POST-PRANDIAL FULLNESS + NAUSEA	6	9.52%
PAIN ABDOMEN +NAUSEA	4	6.34%
PAIN ABDOMEN + HEARTBURN + POST- PRANDIAL FULLNESS + NAUSEA	4	6.34%
PAIN ABDOMEN + HEARTBURN + BELCHING + POST-PRANDIAL FULLNESS	3	4.76%
PAIN ABDOMEN + BELCHING + POST- PRANDIAL FULLNESS	3	4.76%
OTHERS:		

Evaluation of upper gastro-intestinal endoscopic findings in patients with gallstone disease

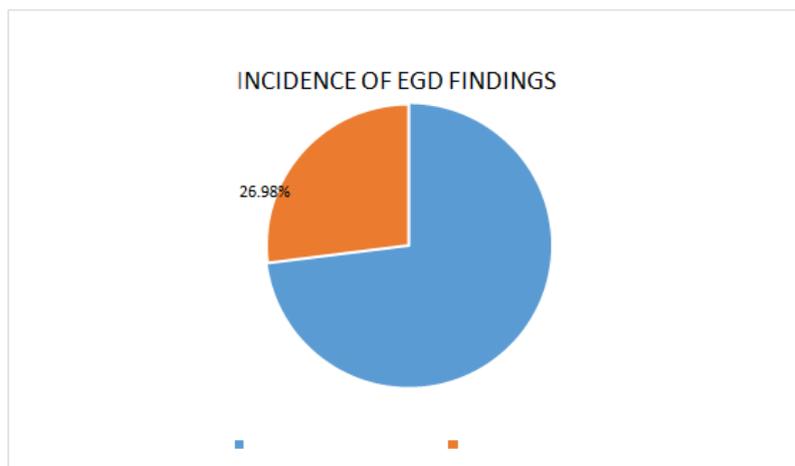
PAIN ABDOMEN + HEARTBURN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA AND VOMITING	2	3.17%
HEART BURN + BELCHING + NAUSEA	2	3.17%
POST PRANDIAL FULLNESS	2	3.17%
POST PRANDIAL FULLNESS + NAUSEA	2	3.17%
PAIN + HEART BURN + NAUSEA	2	3.17%
PAIN + HEART BURN + VOMITING	2	3.17%
BELCHING + POST PRANDIAL FULLNESS	1	1.59%
BELCHING + POST PRANDIAL FULLNESS + NAUSEA	1	1.59%
HEART BURN + BELCHING + POST PRANDIAL FULLNESS	1	1.59%
HEART BURN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA	1	1.59%
HEART BURN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA + VOMITING	1	1.59%
HEART BURN + NAUSEA	1	1.59%
HEART BURN + POSTPRANDIAL FULLNESS	1	1.59%
HEART BURN + POST PRANDIAL FULLNESS + NAUSEA	1	1.59%
PAIN + BELCHING	1	1.59%
PAIN + BELCHING + NAUSEA	1	1.59%
PAIN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA	1	1.59%
PAIN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA + VOMITING	1	1.59%
PAIN + HEART BURN + BELCHING + NAUSEA	1	1.59%
PAIN + HEART BURN + BELCHING + POST PRANDIAL FULLNESS + NAUSEA	1	1.59%
PAIN + HEART BURN + NAUSEA + VOMITING	1	1.59%
PAIN + POST PRANDIAL FULLNESS + NAUSEA + VOMITING	1	1.59%
PAIN + POST PRANDIAL FULLNESS + NAUSEA + VOMITING + FEVER	1	1.59%



In our study, pain abdomen + heartburn (12.69%) was the most common symptom complex, followed by, pain abdomen + post-prandial fullness (9.52%) and pain abdomen + post-prandial fullness + nausea (9.52%).

INCIDENCE OF EGD FINDINGS

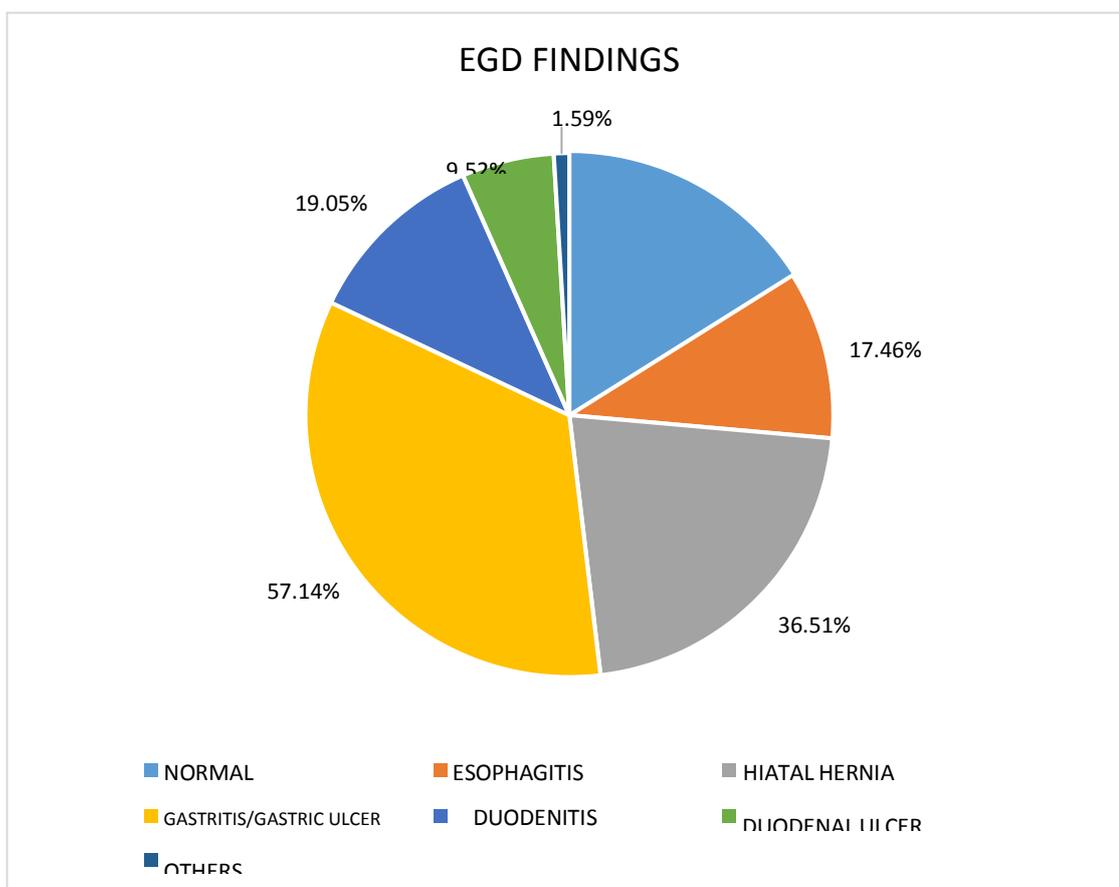
INCIDENCE	NO. OF CASES	PRESENT SERIES%
EGD findings	46	73.02%
No EGD findings	17	26.98%



In the present study, out of 63 patients with GSD who were subjected to EGD, 46 patients (73.02%) had positive upper GI findings and 17 patients (26.98%) had negative EGD.

EGD FINDINGS

EGD FINDINGS	NO. OF CASES	PRESENT SERIES (%)
NORMAL	17	26.98%
ESOPHAGITIS	11	17.46%
HIATAL HERNIA	23	36.51%
GASTRITIS/GASTRIC ULCER	36	57.14%
DUODENITIS	12	19.05%
DUODENAL ULCER	6	9.52%
OTHERS	1	1.59%

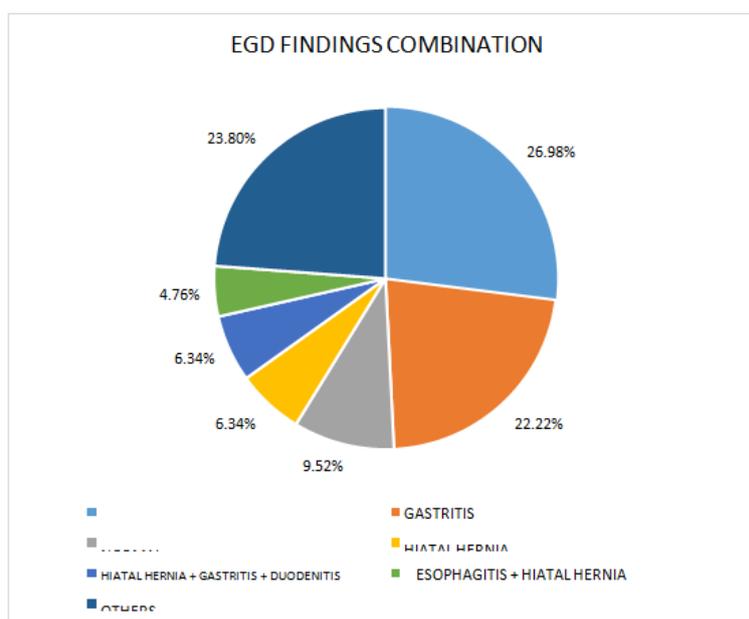


In the present series, 26.98% of the study group had normal study. In patients having clinically significant EGD findings, gastritis/gastric ulcer (57.14%) accounted for the most common finding, followed by hiatal hernia (36.51%). No EGD related complications were seen during the study.

EGD FINDINGS COMBINATION

EGD FINDINGS COMPLEX	NO. OF PATIENTS	PRESENT SERIES (%)
NORMAL	17	26.98%
GASTRITIS	14	22.22%
HIATUS HERNIA + GASTRITIS	6	9.52%
HIATAL HERNIA	4	6.34%
HIATUS HERNIA + GASTRITIS + DUODENITIS	4	6.34%
ESOPHAGITIS + HIATAL HERNIA	3	4.76%

	OTHERS	
ESOPHAGITIS + HIATAL HERNIA+ GASTRITIS	2	3.17%
GASTRITIS +DUODENITIS	2	3.17%
DUODENITIS	1	1.59%
DUODENITIS + DUODENAL ULCER	1	1.59%
ESOPHAGITIS	1	1.59%
ESOPHAGITIS +GASTRITIS	1	1.59%
ESOPHAGITIS + GASTRITIS + DUODENITIS + DUODENAL ULCER	1	1.59%
ESOPHAGITIS + HIATAL HERNIA+ GASTRITIS + DUODENITIS +	1	1.59%
ESOPHAGITIS + HIATAL HERNIA+ GASTRITIS + DUODENITIS + DUODENAL ULCER	1	1.59%
ESOPHAGITIS + HIATAL HERNIA+ GASTRITIS + DUODENAL ULCER	1	1.59%
GASTRITIS + ESOPHAGEALVARICES	1	1.59%
GASTRIC ULCER +DUODENITIS + DUODENAL ULCER	1	1.59%
HIATAL HERNIA+ GASTRITIS + DUODENITIS + DUODENAL ULCER	1	1.59%



In the present study, only gastritis was the most common finding, seen in 22.22% of the cases, followed by hiatus hernia + gastritis (9.52%) and hiatus hernia alone (6.34%) and hiatal hernia + gastritis + duodenitis (6.34%).

IV. Discussion

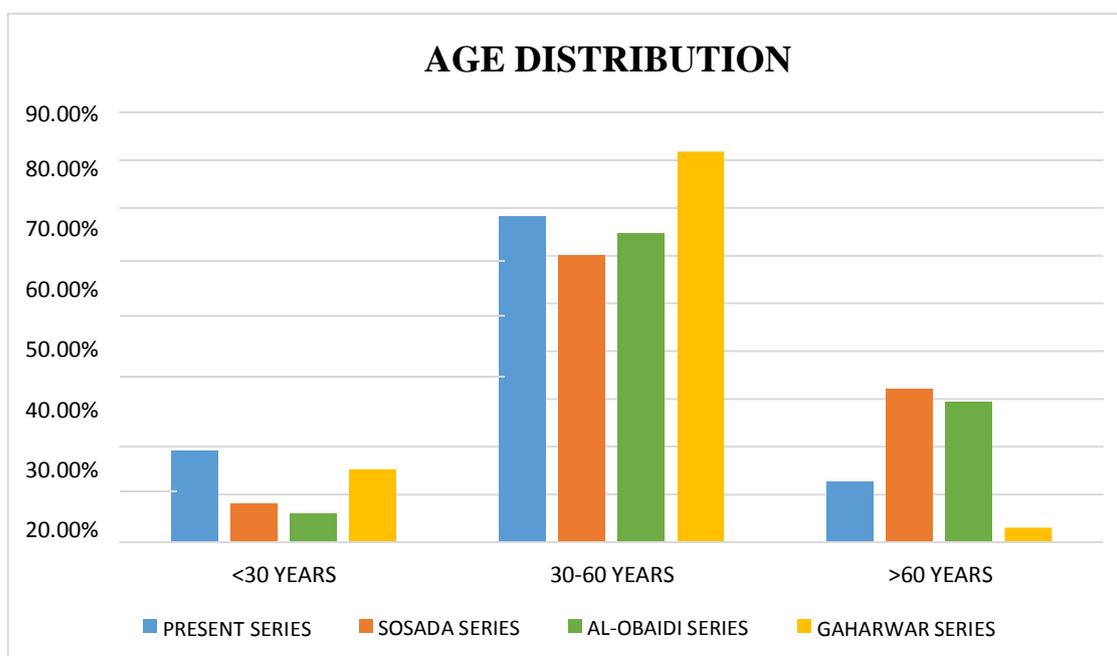
In the present study, a brief history of gallstones, anatomy of the biliary system, stomach and duodenum, physiology of bile secretion was discussed. Patho-physiology of formation of gallstone and its natural history was discussed. Various clinical features, investigative modalities and medical and surgical management of gallstone disease were discussed. This was followed by discussion on definition and presentation of dyspepsia.

Co-relation between gallstones and dyspepsia was explained. This was followed by discussion on use of EGD. Various endoscopic findings in upper GI diseases causing dyspepsia were shown.

Patients admitted/attending OPD of the department of General Surgery at Yashoda Hospital, Malakpet, Hyderabad were considered for the study, considering the exclusion and inclusion criteria. A detailed workup was made according to proforma and based on the observations given in the previous tables and graphs, the following conclusions were made.

AGE DISTRIBUTION:

AGE	PRESENT SERIES (%)	SOSADA ⁵⁵ SERIES (%)	AL-OBAIDI ⁵⁶ SERIES (%)	GAHARWAR ⁵⁷ SERIES (%)
<30 YEARS	19.05%	8%	5.88%	15.16%
30-60 YEARS	68.25%	60%	64.71%	81.81%
>60 YEARS	12.70%	32%	29.41%	3.03%



In the present study, the most common age group presenting with cholelithiasis and dyspepsia was between 30 to 60 years, accounting for 68.25%, followed by 18 to 30 years age group with 19.05%.

Similar findings were found in Sosada⁵⁵ series with 30 to 60 years age group accounting for 60%, age group of more than 60 years accounting for 32% and age group of less than 30 years accounting for 8%.

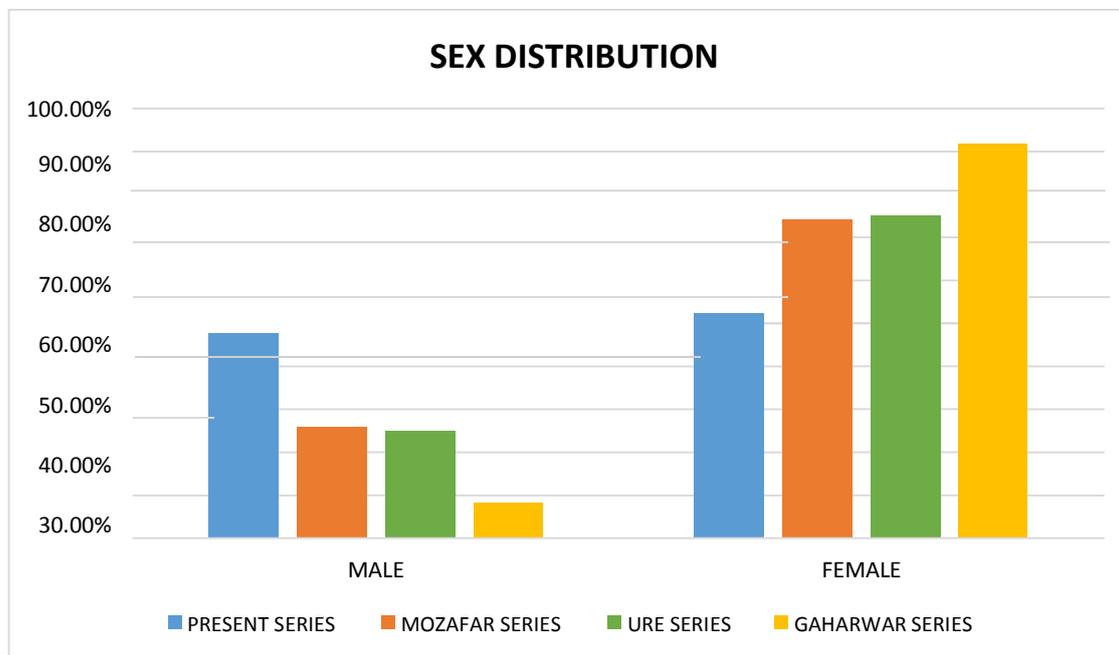
Findings in Al-Obaidi⁵⁶ series were as follows: age group between 30-60 years accounted for 64.71%, age more than 60 years for 29.41% and age less than 30 accounted for 5.88%.

In Gaharwar⁵⁷ series, the age group between 30-60 years accounted for 81.81%, age more than 60 years for 3.03% and age less than 30 years accounted to 15.16%.

Since both gallstones and dyspepsia are common in middle-ages, this finding is consistent with the general population.

SEX DISTRIBUTION:

SEX	PRESENT SERIES (%)	MOZAFAR ⁴⁶ SERIES (%)	URE ⁵⁸ SERIES (%)	GAHARWAR ⁵⁷ SERIES (%)
MALE	47.62%	25.87%	25%	8.33%
FEMALE	52.38%	74.15%	75%	91.66%

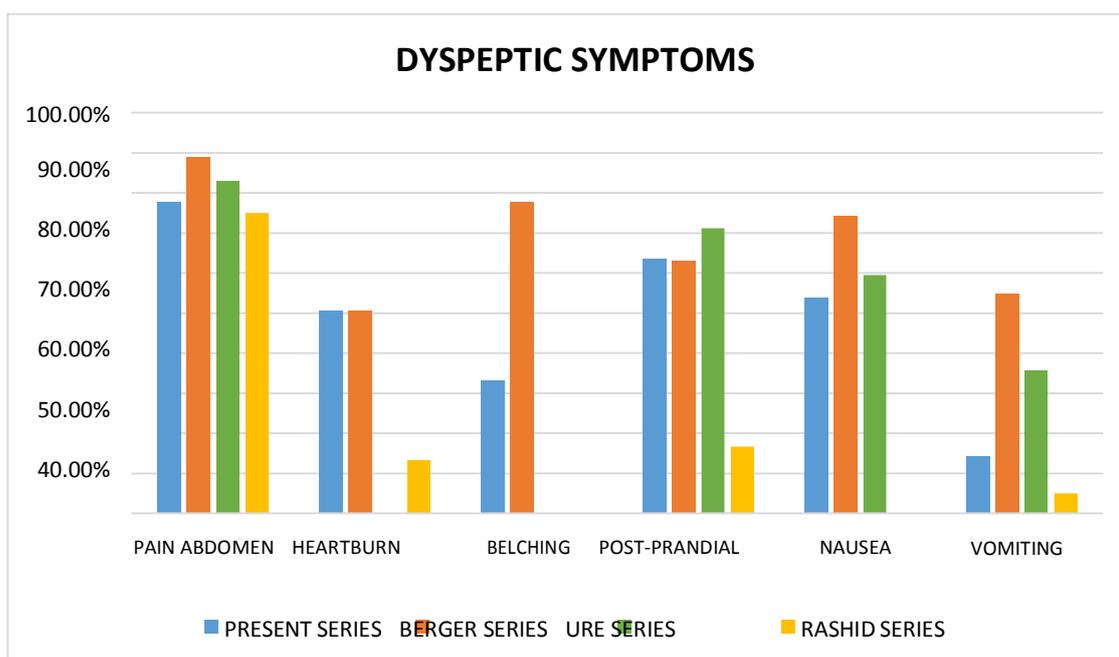


In the present study, cholelithiasis with dyspepsia was more common in females, constituting 52.38% of the study group. Similar findings were noted in Mozafar⁴⁶ series, in which, females accounted for 74.15% of the study group, followed by Ure⁵⁸ series with 75% and Gaharwar⁵⁷ series with 91.66%.

Although the prevalence is more common in females in both the studies, the difference between male and female prevalence is less in the present study compared to Mozafar⁴⁶ series. The difference could be explained by the fact that our study population had higher intake of spicy food intake along with smoking and tobacco chewing which could have led to higher prevalence in males.

DYSPEPTIC SYMPTOMS:

SYMPTOMS	PRESENT SERIES (%)	BERGER ⁵⁹ SERIES (%)	URE ⁵⁸ SERIES (%)	RASHID ⁶⁰ SERIES (%)
PAIN ABDOMEN	77.77%	89.04%	82.9%	75%
HEARTBURN	50.79%	50.68%	-	13.33%
BELCHING	33.33%	77.77%	-	-
POST- PRANDIAL FULLNESS	63.49%	63.01%	71.2%	16.67%
NAUSEA	53.96%	74.28%	59.5%	-
VOMITING	14.28%	54.92%	35.8%	5%



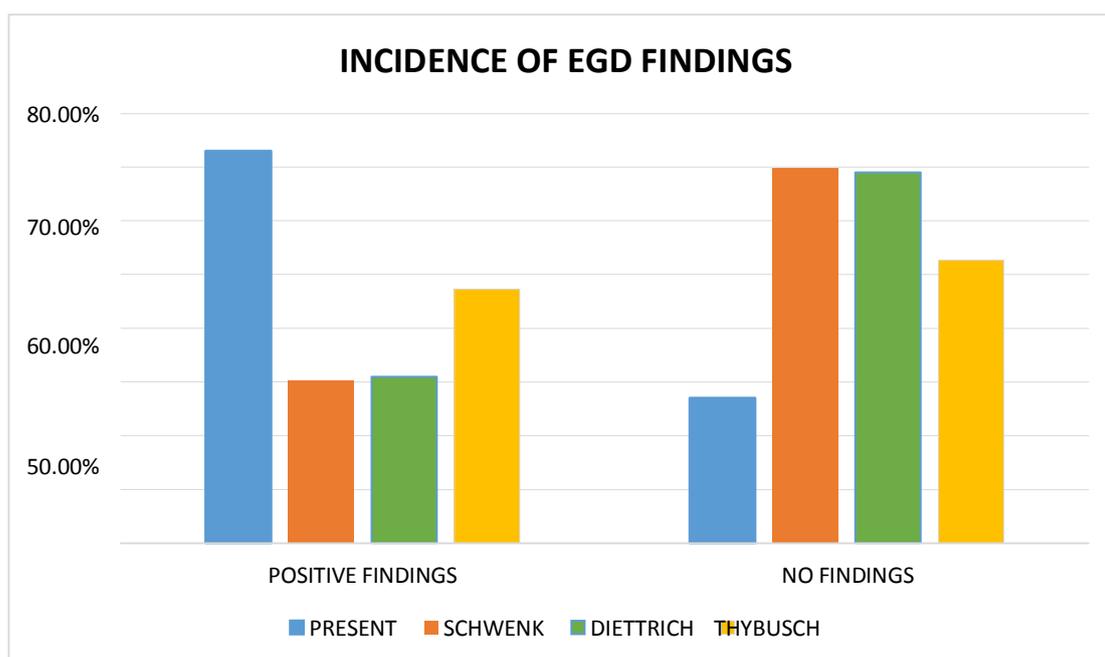
In the present study, pain abdomen was the most common dyspeptic symptom, accounting for 77.77%, followed by post-prandial fullness which accounted for 63.49%. Other symptoms included nausea (53.96%), heartburn (50.79%), belching (33.33%) and vomiting (14.28%).

In Berger⁵⁹ series, pain abdomen was the most common symptom accounting for 89% in congruence with the present study. But, belching (77.77%) and nausea (74.28%) constituted the next most common symptoms. In Ure⁵⁸ series and Rashid⁶⁰ series, pain abdomen was the most common symptom accounting for 82.9% and 75% respectively.

Both the studies show that pain abdomen is the most commonly presenting dyspeptic symptom. Post-prandial fullness and belching are part of the same spectrum of presentation, i.e., flatulence.

INCIDENCE OF POSITIVE EGD FINDINGS

EGD FINDINGS	PRESENTSERIES %	SCHWENK ⁶¹ SERIES%	DIETTRICH ⁶² SERIES%	THYBUSCH ⁶³ SERIES%
POSITIVE FINDINGS	73.02%	30.2%	31%	47.3%
NO FINDINGS	26.98%	69.8%	69%	52.7%

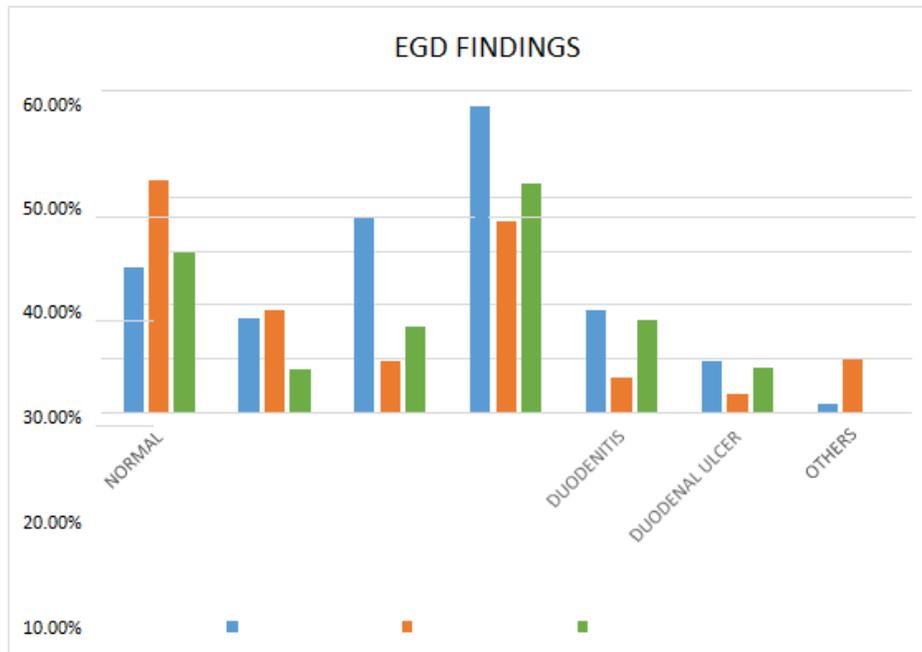


On subjecting the patients of GSD with atypical symptoms to EGD, abnormal upper GI findings were found in 73.02% of patients in the present study, in 30.20% of patients in the Schwenk⁶¹ et.al. series, in 31% of patients in Diettrich⁶² et.al. series and in 47.30% of patients in the Thybusch⁶³ et.al series.

The higher incidence of positive findings in the present study might be attributed to higher incidence of consumption of spicy food and tobacco in the study population.

EGD FINDINGS:

EGD FINDINGS	PRESENT SERIES (%)	IBRAHIM ⁶⁴ SERIES (%)	BARTOSZ ⁶⁵ SERIES (%)
NORMAL	26.98%	43.5%	29.7%
ESOPHAGITIS	17.46%	19%	8%
HIATAL HERNIA	36.51%	9.5%	16.1%
GASTRITIS/GASTRIC ULCER	57.14%	35.5%	43.6%
DUODENITIS	19.05%	6.5%	17.3%
DUODENAL ULCER	9.52%	3.5%	8.3%
OTHERS	1.59%	10%	-



In the present series, 26.98% of the study group had normal study. In patients having clinically significant EGD findings, gastritis/gastric ulcer (57.14%) accounted for the most common finding, followed by hiatal hernia (36.51%), duodenitis (19.05%), oesophagitis (17.46%) and duodenal ulcer (9.52%).

In Ibrahim⁶⁴ series, 43.5% of the study group had normal study. Gastritis/gastric ulcer was the most common significant finding, accounting for 35.5%, followed by esophagitis (19%).

In Bartosz⁶⁵ series, 29.7% of the study group had normal EGD study. Gastritis/gastric ulcer was the most common significant finding, accounting for 43.6%, followed by duodenitis (17.3%), hiatal hernia (16.10%), duodenal ulcer (8.30%).

The percentage of normal EGD was lower in the present study compared to Ibrahim series. This could be due to high incidence of smoking, tobacco/gutkha chewing and spicy food intake in our study group. Both the studies show that gastritis is the most common significant EGD finding.

Many studies have emphasized on the potential therapeutic role of upper GI tract endoscopy in the presence of overlapping upper GI symptoms. For instance, **Dietrich et.al.**⁶² found that 31/100 patients had abnormal EGD before they underwent elective cholecystectomy for gallstones, which changed their subsequent plan of treatment. In 18% of patients, the cholecystectomy was deferred for 4 to 8 weeks, after additional medical treatment and 7 patients were discharged on only conservative medical treatment. Therefore, he recommended that preoperative endoscopy of the upper GI tract should be used in patients undergoing cholecystectomy to rule out other GI disorders.⁶²

Likewise, another study by **Schwenk et.al.**⁶¹ 1143 patients underwent preoperative EGD prior cholecystectomy. The incidence of pathological findings was 30.2% (345 patients), with 68.3% of findings were of inflammatory in nature. Because of the high incidence of simultaneous Upper GI diseases, they recommended that routine preoperative endoscopy is indicated before elective surgical treatment of gallstones disease.⁶¹

On the other hand, **Sosada et al.**⁵⁵ recommended the performance of routine EGD for each patient who is elected to undergo laparoscopic cholecystectomy. He suggested that in patients with asymptomatic gallstones, abdominal pain is most likely secondary to underlying peptic ulcer disease. In this study, EGD which was performed 1–4 days prior to surgery in 2800 patients. Pathological findings were identified in 1187(42%) patients; gastric ulcer in 179 (6.4%), duodenal ulcer in 127 (4.5%), gastritis in 735 (26.3%) patients. The surgery was delayed for patients with ulcers and they were treated appropriately. 16 patients had complete resolution of symptoms after medical treatment, therefore cholecystectomy was not performed.⁵⁵

In the same way, **Rashid et.al.**⁶⁰ evaluated the routine use of EGD prior laparoscopic cholecystectomy.²³ In his retrospective analysis, the routine use of EGD resulted in detection of other coexisting pathologies in about one third (35%) of patients. All of these EGD findings lead to a change in the management plan for these patients. Also they noticed that, the recurrence or persistence of symptoms was significantly higher in patients who were not scoped prior to surgery (33 %) in comparison to patients who were scoped where only (3.3%) had recurrent or persistent symptoms. Therefore they suggested that, EGD should be considered as a routine investigation before laparoscopic cholecystectomy especially in those selected group of

patients, who do present with overlapping upper GI symptoms.⁶⁰

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To put emotions on paper is an incredibly difficult task. Words perhaps would fail to express my deep sense of gratitude and indebtedness to my esteemed teacher, my guide **Dr. Kilambi Srinivas, M.S Gen.Surgery** Head of the department of General Surgery, ST. Theresa's hospitals for his encouragement and continuous support in carrying out this whole study at each and every step.

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DECLARATIONS

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