Section: General Medicine

Original Research Article

PREVALENCE OF DYSPEPSIA AND THE ASSOCIATED UPPER GASTROINTESTINAL ENDOSCOPIC LESIONS IN TYPE 2 DIABETIC PATIENTS

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Received : 29/05/2025
Received in revised form : 17/07/2025
Accepted : 04/08/2025

Keywords:
Dyspepsia, upper gastrointestinal endoscopic lesion, type 2 diabetic.

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DOI: 10.47009/jamp.2025.7.4.215

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2025; 7 (4); 1132-1135

ABSTRACT

Background: Dyspepsia is a chronic or recurrent burning discomfort or pain in the upper abdomen that may be caused by diverse processes, where in this study of dyspepsia in diabetes is related to the use of oral hypoglycemics for the management of hyperglycemia control. Gastrointestinal (GI) symptoms represent an important and often unappreciated cause of morbidity in diabetes, although the significance of this burden across the spectrum of patients and the underlying pathophysiology, including the relationship of symptoms with glycemic control, remain poorly defined. The objective is to determine the prevalence of dyspepsia and the associated upper gastrointestinal endoscopic lesions in type 2 diabetic patients. **Materials and Methods:** The present descriptive observational study was carried out at Department of General Medicine at MIMSR Medical College Latur, Maharashtra involving 50 cases of those getting admitted in medicine ward and more than 30 years of age and of either sex during January 2020 to July 2022. **Result:** Out of 50 patients, majority were from 51-60 years age group followed by 16(32%) from 41-50 years and 14(28%) from 30-40 years age group. Mean age of the study population was 47.94±10.26 years. Endoscopic findings revealed that gastric retention was present in 20% cases, pangastritis in 14%, esophagitis in 8%, duodenal ulcer in 6%, duodenitis in 4% and antral gastritis in 4% cases. **Conclusion:** Endoscopic findings revealed that prevalence of gastric retention was most common finding in our study with 20% cases, pangastritis in 14%, esophagitis in 8%, duodenal ulcer in 6%, duodenitis in 4% and antral gastritis in 4% cases.

INTRODUCTION

Diabetes mellitus (DM) is an illness which mainly characterized by a high blood glucose level (hyperglycemia) with defects in carbohydrates, protein and fat metabolism due to either absolute or relative deficiency of insulin and/or action. Regarding statistics from the World Health Organization (WHO), the most common type of diabetes is type 2 diabetes mellitus (DMT2) with about 90% of diabetic patients suffering from this type 1. This type 2 diabetes mellitus is an evolving pandemic which is responsible for about 3.8 million of adult deaths worldwide, anticipation from the WHO states that the number of adults deaths from diabetes will double by 2030.[1]

Dyspepsia is a chronic or recurrent burning discomfort or pain in the upper abdomen that may be caused by diverse processes, where in this study of dyspepsia in diabetes is related to the use of oral hypoglycemics for the management of hyperglycemia control. Gastrointestinal (GI) symptoms represent an important and often unappreciated cause of morbidity in diabetes, although the significance of this burden across the spectrum of patients and the underlying pathophysiology, including the relationship of symptoms with glycemic control, remain poorly defined.[2,3]

Gastrointestinal symptoms are commonly reported as side-effects of antidiabetic drugs.[4,5] However due to the high-risk background incidence of gastrointestinal symptoms it may be very difficult to distinguish between spontaneous and truly drug-related gastrointestinal symptoms. Gastrointestinal symptoms in diabetic patients have also been linked

to factors associated with long standing disease and suboptimal control. In particular, autonomic neuropathy,[6,7] poor glycaemic control and duration of diabetes have been reported to be important risk factors for gastrointestinal symptoms in diabetes mellitus.[8,9]

Few authors have used upper digestive endoscopy (UDE) to analyze the presence of mucosal lesions that could explain the esophageal and dyspeptic complaints in diabetic patients. In one study, endoscopic evaluation showed that the lesions in the esophagogastric mucosa were more frequent in diabetic patients (most of them with type 2 diabetes) than in non-diabetic controls. However, no relationship was observed between the lesions found and the presence of digestive symptoms.[10]

Therefore, the study was undertaken with the objective to determine the prevalence of dyspepsia and the associated upper gastrointestinal endoscopic lesions in type 2 diabetic patients.

Objectives

- To determine the prevalence of dyspepsia and the associated upper gastrointestinal endoscopic lesions in type 2 diabetic patients.

MATERIALS AND METHODS

Study setting: Department of General Medicine at MIMSR Medical College Latur, Maharashtra

Study population: The study comprised of those getting admitted in medicine ward and more than 30 years of age and of either sex.

Study period: January 2020 to July 2022

Study design: Descriptive observational study

Sample size: 50

Sampling technique: Simple Random sampling method

Inclusion criteria:

- Patients older than 30 years of age, diabetes diagnosis should have been established
- Written and informed consent for upper digestive tract endoscopy (UDE)

Exclusion criteria:

Pregnancy, previous gastrointestinal tract surgery, renal failure with dialysis, concurrent diseases that may cause changes in gastrointestinal motility

Methods of data collection: Pre-diagnosed cases of Type 2 Diabetes patients with symptoms of dyspepsia were selected for this study. Factors related to DM2, including duration of the disease, chronic complications, and laboratory parameters, including fasting glucose, postprandial glucose, blood urea nitrogen, serum creatinine, was obtained from patient records. Glycaemic control was analyzed by means of glycated haemoglobin (HbA1c) obtained by high efficiency liquid chromatography and drug history will be noted Levels above 7% was considered inadequate glycaemic control. Upper digestive endoscopy was carried out in order to diagnose gastroduodenal lesions responsible for gastrointestinal symptoms. Besides, gastric biopsy fragments was done in selected people where there is severe gastritis and biopsy was taken from fundus / Antrum and sent for analysis. Informed and written consent was taken for the same

Statistical analysis plan: Data was collected by using a structure proforma. Data entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA. Qualitative data was expressed in terms of proportions. Quantitative data was expressed in terms of Mean and Standard deviation. Association between two qualitative variables was seen by using Chi square/ Fischer's exact test. Comparison of mean and SD between two groups was done by using unpaired t test to assess whether the mean difference between groups is significant or not. Descriptive statistics of each variable was presented in terms of Mean, standard deviation, standard error of mean.

A p value of <0.05 was considered as statistically significant whereas a p value <0.001 was considered as highly significant.

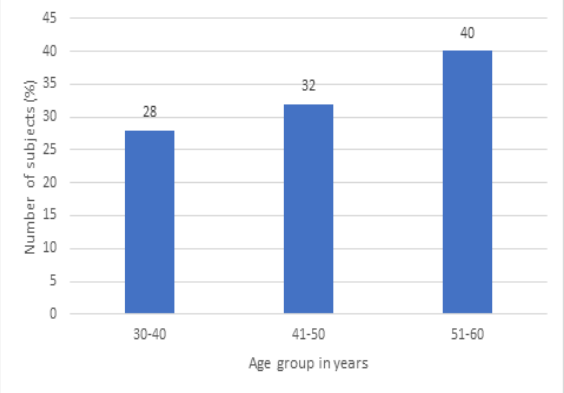

Figure 1: Bar diagram showing Distribution according to age group

We included total 50 diabetic patients having dyspepsia in our study. Out of 50 patients, majority were from 51-60 years age group followed by 16(32%) from 41-50 years and 14(28%) from 30-40 years age group. Mean age of the study population was 47.94±10.26 years.

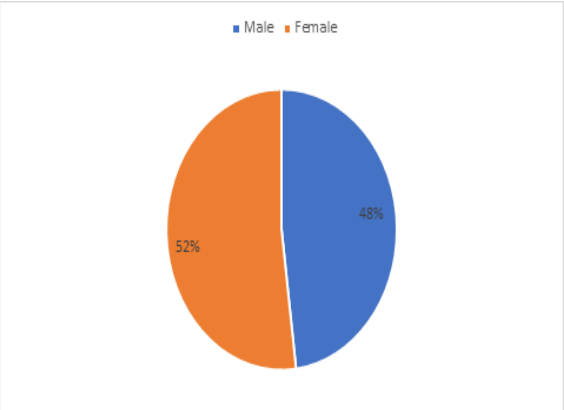

Figure 2: Pie diagram showing Distribution according to gender

ISSN (O): 2687-5365; ISSN (P): 2753-6556

48% were males and 52% were females. Females were predominant in our study with male to female ratio as 0.92:1.

RESULTS

Table 1: Distribution according to clinical features

		Frequency	Percent
Clinical features	Epigastric pain	37	74.0
	Globus	6	12.0
	Gastroesophageal reflux	6	12.0
	Epigastric burning	49	98.0
	Nausea/ vomiting	22	44.0
	Belching	49	98.0
	Early satiety	22	44.0
	Postprandial fullness	22	44.0
	Food intolerance	10	20.0
	Indigestion	41	82.0
	Loss of appetite	27	54.0
	Weight loss	3	6.0

Clinical features in our study revealed that epigastric burning was present in 98%, belching in 98%, indigestion 82%, epigastric pain in 74%, loss of appetite in 54%, nausea/ vomiting in 44%, early satiety in 44%, postprandial fullness in 44%, food intolerance in 20%, globus in 12%, gastroesophageal reflux in 12% and weight loss in 6%.

Table 2: Distribution according to habits and addictions

		Frequency	Percent
Habits and addictions	Alcohol	2	4.0
	Alcohol + tobacco	1	2.0
	No habits	30	60.0
	Tobacco chewing	17	34.0
	Total	50	100.0

Prevalence of tobacco chewing was 34% cases, alcohol and tobacco 2% and alcohol was 4%.

Table 3: Distribution according to endoscopic findings

		Frequency	Percent
Endoscopic findings	Esophagitis	4	8.0
	Hiatus hernia	0	0
	Gastric retention	10	20.0
	Duodenitis	2	4.0
	Duodenal ulcer	3	6
	Antral gastritis	2	4.0
	Pangastritis	7	14.0

Endoscopic findings revealed that gastric retention was present in 20% cases, pangastritis in 14%, esophagitis in 8%, duodenal ulcer in 6%, duodenitis in 4% and antral gastritis in 4% cases.

DISCUSSION

Demographic information: We included total 50 diabetic patients having dyspepsia in our study. Out of 50 patients, majority were from 51-60 years age group followed by 16(32%) from 41-50 years and 14(28%) from 30-40 years age group. Mean age of the study population was 47.94±10.26 years. 48% were males and 52% were females. Females were predominant in our study with male to female ratio as 0.92:1.

Devrajani BR et al,[11] in 2010 conducted the study to determine the frequency of Helicobacter pylori (H. pylori) infection in diabetic and non-diabetic patients and to compare the frequency of H. pylori infection in both groups. This hospital-based case-control study was conducted on 148 subjects and divided into two groups i.e. type 2 diabetics and non-diabetics; each group consisting of 74 patients. They reported that majority were from 56-65 years age group i.e. 46.6% followed by 29.1% from 46-55 years and 24.3% from 35-45 years age group. 56.1% were males and 43.9% were females. Mean age of the study population was 52.8 ± 8.51 (35-65) years which is consistent with our study findings. Boyuk B. et al,[12] in 2017 conducted the study on 205 diabetic patients including 75 male and 130 female individuals with dyspeptic complaints. They reported that female patients were 130 (63.4%) and male patients were 75 (36.6%). Mean age of the patients was 58.33 ± 11.21 years.

Clinical presentation of dyspepsia: Clinical features in our study revealed that epigastric burning was present in 98%, belching in 98%, indigestion 82%, epigastric pain in 74%, loss of appetite in 54%,

ISSN (O): 2687-5365; ISSN (P): 2753-6556

nausea/ vomiting in 44%, early satiety in 44%, postprandial fullness in 44%, food intolerance in 20%, globus in 12%, gastroesophageal reflux in 12% and weight loss in 6%.

Osipenko MF et al,[13] in 2013 conducted the study with the objective to estimate the prevalence of dyspepsia and to study its clinical manifestations and risk factors in patients with type 2 diabetes mellitus. One hundred and seven patients with type 2 DM and 33 with functional dyspepsia were examined. A clinical and laboratory study and testing were made to identify the symptoms of dyspepsia; dyspepsia-associated factors were studied. Dyspepsia was observed in 71.0% of the examined patients with type 2 DM. It may be attributed to organic gastrointestinal tract (GIT) diseases only in 42.3% of cases. They reported that Dyspepsia in type 2 DM was observed in 71% of cases; it can be due to organic GIT diseases in 42.3% and its association with digestive organ pathology was not revealed in 57.7%.

Endoscopic findings: Endoscopic findings revealed that gastric retention was present in 20% cases, pangastritis in 14%, esophagitis in 8%, duodenal ulcer in 6%, duodenitis in 4% and antral gastritis in 4% cases.

Padma S. et al,[14] reported that the endoscopic findings were normal in 131 (6%) patients. The abnormal findings include Gastritis (both mild and Pan gastritis) in 987 cases (44.9%), lax LES with oesophagitis in 178 cases (8.09%), oesophageal varices in 195 cases (8.9%), Duodenal ulcers in 124 cases (5.6%), antral erosion in 85 (3.9%) cases, gastric ulcer (includes both body of stomach and antral ulcer) in 77 Cases (35%), Gastric carcinoma in 23 cases (1%), oesophageal Carcinoma in 47 cases (2.1%), and carcinoma in OG junction in 7 cases (0.3%). Padma S. et al,[14] reported that Gastric ulcer was more in the age group 40-60 years. Duodenal ulcer was more common in male population and was more predominant in the 30-60 age groups. The oesophageal carcinoma was high in males in the 61-70 age groups.

Table 4: showing comparison with other studies with respect to positive findings on endoscopy

	Positive yield	Normal study
Javali et al,[15]	85.5%	14.5%
Chellappa P, et al,[16]	34.9%	65.1%
Arjun et al,[17]	86%	14%
Antony B, et al,[18]	80.6%	19.4%
Khaliq M, et al,[19]	69.2%	30.8%
Present study	98%	2%

CONCLUSION

Endoscopic findings revealed that prevalence of gastric retention was most common finding in our study with 20% cases, pangastritis in 14%, esophagitis in 8%, duodenal ulcer in 6%, duodenitis in 4% and antral gastritis in 4% cases.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556