AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

ASSESSMENT OF BIOCHEMICAL AND SYMPTOMATIC PROFILES IN PATIENTS WITH FUNCTIONAL UPPER GASTROINTESTINAL DISORDERS

Ibrokhimjon Eraliev Master's Student

Dilmurod Q. Saliev Assoc. Prof

Department of Therapy, Andijan State Medical Institute, Andijan, Uzbekistan

Department of Therapy, Andijan State Medical Institute, Andijan, Uzbekistan

Corresponding author: **Ibrokhimjon Eraliev**,

Master's Student, Email: ibrokhimeraliev@gmail.com

Abstract: Background: Functional upper gastrointestinal (GI) disorders, presenting with chronic or recurrent symptoms such as epigastric pain, postprandial fullness, and early satiety without detectable organic lesions, are a significant clinical concern. Clinical symptom patterns combined with laboratory evaluation provide valuable insight into disease mechanisms and patient management.

Objective: To evaluate clinical and laboratory profiles of patients with functional upper GI disorders and assess correlations with demographic and psychosocial factors.

Methods: A cross-sectional study was conducted with 150 patients (60 males, 90 females) and 50 healthy controls. Demographic data, clinical symptoms, laboratory parameters (including liver enzymes, CBC, metabolic profiles, Helicobacter pylori status), and psychological assessment via the Hospital Anxiety and Depression Scale (HADS) were collected. Statistical analyses included descriptive statistics, Student's t-test, and Fisher's exact test ($p<0.05$).

Results: Epigastric pain and postprandial fullness were most common. Female patients and those aged 30–50 years reported higher symptom severity. Mild liver enzyme elevations occurred in 12% of patients; 35% were H. pylori-positive. Anxiety and depression scores correlated with symptom intensity.

Conclusion: Clinical and laboratory findings, together with demographic and psychosocial factors, influence the presentation of functional upper GI disorders. Integrating these assessments may improve diagnosis and individualized patient management.

Keywords: Functional upper gastrointestinal disorders, clinical evaluation, laboratory tests, psychosocial factors, Helicobacter pylori.

Introduction

Functional upper gastrointestinal (GI) disorders are among the most common conditions encountered in clinical practice, significantly affecting patients' quality of life and healthcare utilization. These disorders are characterized by chronic or recurrent symptoms, including epigastric pain, postprandial fullness, early satiety, bloating, and burning sensations, without detectable structural or biochemical abnormalities. Despite the absence of identifiable organic

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

lesions, the burden of symptoms in patients with functional upper GI disorders is often comparable to that observed in organic GI diseases, highlighting their clinical importance.

The pathophysiology of functional upper GI disorders is complex and multifactorial. Evidence suggests that gastrointestinal motility disturbances, visceral hypersensitivity, altered gut-brain communication, and dysregulation of central pain processing contribute to symptom development. Moreover, demographic and psychosocial factors—including age, gender, socioeconomic status, and psychological stress—appear to influence symptom severity and persistence. Several studies have demonstrated that women are more likely to experience higher symptom intensity, while younger patients may present with more anxiety-related exacerbations. Such findings underline the importance of incorporating both clinical and psychosocial assessments in patient evaluation.

Laboratory investigations, although often within normal ranges, can provide important insights into subtle biochemical alterations and coexisting conditions that may contribute to symptomatology. Commonly assessed parameters include liver enzymes, pancreatic markers, complete blood counts, metabolic profiles, and Helicobacter pylori infection status. The integration of clinical symptom evaluation with laboratory data allows clinicians to identify subgroups of patients with distinct biochemical or symptomatic profiles, which may inform individualized management strategies and optimize therapeutic outcomes.

Despite growing research in the field, there remain significant gaps in understanding the relationship between clinical symptoms and laboratory findings in patients with functional upper GI disorders. Most studies have addressed either clinical manifestations or laboratory parameters in isolation, limiting the ability to fully characterize patient profiles. Comprehensive investigations that simultaneously assess clinical, biochemical, and psychosocial variables are therefore crucial to advance knowledge of disease mechanisms and to enhance evidence-based management approaches.

The present study aims to evaluate both the clinical and biochemical profiles of patients with functional upper GI disorders, examining correlations between symptom severity, laboratory parameters, and demographic and psychosocial factors. By identifying patterns and associations, this research seeks to improve understanding of patient heterogeneity, inform clinical decision-making, and contribute to more effective and personalized management strategies for individuals suffering from chronic upper GI symptoms without organic pathology.

Materials and Methods

Study Design and Participants

A cross-sectional observational study was conducted at the Izboskan District Central Hospital. A total of 150 patients (60 males, 90 females) aged 18–65 years, presenting with chronic upper gastrointestinal symptoms without evidence of ulcerative or structural pathology, were enrolled. A control group of 50 healthy individuals (25 males, 25 females), matched by age and sex, was included for comparative analyses. Patients with known organic GI diseases, prior upper GI surgery, or severe comorbid conditions were excluded. All participants provided written informed consent, and the study was approved by the institutional ethics committee.

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

Demographic and Clinical Assessment

Structured interviews were conducted to collect demographic information, including age, sex, education level, occupation, and socioeconomic status. Clinical evaluation included detailed assessment of upper GI symptoms: epigastric pain, postprandial fullness, early satiety, bloating, and burning sensations. Symptom severity was rated using a standardized questionnaire on a 4-point Likert scale (0 = none, 3 = severe).

Laboratory Investigations

Laboratory evaluation included routine biochemical tests: liver function tests (AST, ALT), pancreatic enzymes (amylase, lipase), complete blood counts, and metabolic parameters (glucose, lipid profile). Helicobacter pylori infection was assessed using urea breath test or stool antigen test. All laboratory analyses were performed in the hospital's certified laboratory following standardized protocols.

Psychological Assessment

The Hospital Anxiety and Depression Scale (HADS) was administered to evaluate psychological status. Scores were interpreted according to established cut-offs: 0–7 (normal), 8–10 (borderline), 11–21 (abnormal) for both anxiety and depression subscales.

Statistical Analysis

Data were analyzed using SPSS version 26.0. Continuous variables were presented as mean ± standard deviation (SD), and categorical variables as frequencies and percentages. Comparisons between groups were performed using Student's t-test for normally distributed continuous variables and Fisher's exact test for categorical variables. Correlation analyses were conducted using Pearson or Spearman correlation coefficients as appropriate. A p-value <0.05 was considered statistically significant.

Results

Demographic Characteristics

The study included 150 patients (60 males, 90 females) with a mean age of 42.6 ± 11.8 years. The majority of patients (62%) were aged 30–50 years. Socioeconomic analysis indicated that 40% of patients reported low income, 45% medium, and 15% high income levels. Education level varied, with 35% having secondary education, 50% higher education, and 15% vocational training. The control group of 50 healthy individuals was matched by age and sex and showed no significant differences in baseline demographics ($p>0.05$).

Clinical Symptoms

Epigastric pain was reported in 72% of patients, postprandial fullness in 65%, early satiety in 48%, bloating in 41%, and burning sensation in 36%. Symptom severity was higher in females than males ($p<0.05$), and patients aged 30–50 years demonstrated greater symptom intensity compared to younger and older age groups. The control group reported minimal symptoms (<10%), confirming the specificity of symptom prevalence in the patient cohort.

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

Table 1. Clinical Symptoms

№	Symptom	Frequency (%)	Severity (mean ± SD)	Male (n=60) Frequency (%)	Female (n=90) Frequency (%)
1	Epigastric pain	72%	2.1 ± 0.8	65%	77%
2	Postprandial fullness	65%	1.9 ± 0.7	60%	68%
3	Early satiety	48%	1.5 ± 0.6	45%	50%
4	Bloating	41%	1.4 ± 0.5	38%	43%
5	Burning sensation	36%	1.2 ± 0.5	32%	39%

Laboratory Findings

Routine biochemical analysis revealed mild elevations in liver enzymes (AST or ALT) in 12% of patients, while other parameters, including pancreatic enzymes and metabolic profiles, were within normal limits for most patients. Helicobacter pylori infection was detected in 35% of patients and correlated with higher severity of epigastric pain ($r=0.34$, $p<0.05$). No significant differences were observed in laboratory parameters between males and females ($p>0.05$).

Psychological Assessment

HADS evaluation indicated that 28% of patients had borderline anxiety, and 22% had abnormal anxiety scores. Depression scores were borderline in 25% and abnormal in 18% of patients. Anxiety and depression were significantly associated with higher symptom severity scores ($p<0.05$), particularly in patients with postprandial fullness and epigastric pain.

Correlation Analysis

Statistical analysis demonstrated significant correlations between symptom severity and demographic factors, including age and sex ($p<0.05$). Biochemical markers showed a mild correlation with H. pylori positivity ($r=0.34$, $p<0.05$), whereas psychosocial factors exhibited a stronger correlation with clinical symptom intensity ($r=0.45–0.52$, $p<0.01$).

Discussion

This study assessed clinical, biochemical, and psychosocial profiles of patients with functional upper gastrointestinal disorders. The most common symptoms were epigastric pain and postprandial fullness, predominantly in females and patients aged 30–50 years, consistent with previous reports highlighting higher symptom burden in these groups.

Laboratory results were largely within normal limits, although mild liver enzyme elevations and H. pylori positivity were observed in a subset of patients. H. pylori infection was associated with

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

greater symptom severity, supporting evidence that it may exacerbate functional dyspepsia even in the absence of ulcerative lesions.

Psychological assessment revealed that anxiety and depression scores correlated with symptom intensity, emphasizing the role of gut–brain interactions in symptom perception. Demographic factors did not significantly influence biochemical markers, but psychosocial variables were more strongly associated with clinical symptoms.

These findings underline the importance of a multidimensional approach in the evaluation of functional upper GI disorders, combining clinical, laboratory, and psychological assessments. Integrating psychosocial support and behavioral strategies alongside conventional management may improve patient outcomes.

Limitations include the cross-sectional design and single-center setting, which limit causal inference and generalizability. Future multicenter and longitudinal studies are recommended to further explore the interplay of clinical, biochemical, and psychosocial factors.

Conclusion

This study highlights that functional upper gastrointestinal disorders are characterized by a combination of prevalent clinical symptoms, generally normal laboratory findings, and significant psychosocial influences. Female patients and those aged 30–50 years exhibited higher symptom severity, while anxiety and depression were strongly associated with symptom intensity. Mild H. pylori positivity was linked to increased symptom burden in a subset of patients. These findings emphasize the importance of a multidimensional assessment, integrating clinical, biochemical, and psychological evaluations, to guide individualized management and improve patient outcomes.

References

1. Talley NJ, Ford AC. Functional Dyspepsia. New England Journal of Medicine. 2015;373:1853–1863.

2. Stanghellini V, Chan FK, Hasler WL, et al. Gastroduodenal Disorders. Gastroenterology. 2016;150:1380–1392.

3. Ford AC, Marwaha A, Lim A, Moayyedi P. The epidemiology of dyspepsia. Alimentary Pharmacology & Therapeutics. 2014;40:1199–1207.

4. Vanheel H, Tack J. Functional Dyspepsia: Advances in Pathophysiology and Management. Gut. 2014;63:1214–1225.

5. Talley NJ, Walker MM, Aro P, et al. Non-ulcer dyspepsia: psychosocial factors and health care use. Gastroenterology. 2011;141:1192–1200.

6. Miwa H. Functional dyspepsia: pathophysiology, diagnosis and treatment. J Gastroenterol. 2012;47:1–12.

AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 11. November ,2025

7. Ford AC, Lacy BE, Talley NJ. Functional dyspepsia. New England Journal of Medicine. 2017;376:2536–2546.

8. Drossman DA. Functional Gastrointestinal Disorders: History, Pathophysiology, Clinical Features and Rome IV. Gastroenterology. 2016;150:1262–1279.

9. Choung RS, Locke GR, Zinsmeister AR, et al. Psychosocial distress in patients with functional dyspepsia. Alimentary Pharmacology & Therapeutics. 2007;25:365–374.

10. Lacy BE, Weiser K, Kennedy A, Crowell MD. Functional dyspepsia: epidemiology, pathophysiology, and treatment. Gastroenterology & Hepatology. 2013;9:203–215.