RELATION OF FUNCTIONAL DYSPEPSIA WITH ANXIETY AND DEPRESSION AND ITS IMPACT ON THE QUALITY OF LIFE OF PATIENTS

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ABSTRACT

Objectives: To determine the frequency of functional dyspepsia, relation between functional dyspepsia and anxio-depressive disorders and to determine its impact on quality-of-life.

Study Design: Cross-sectional study.

Place and Duration of Study: Department of Gastroenterology, Pak Emirates Military Hospital Rawalpindi from May 2017 to October 2017.

Material and Methods: Four hundred patients were enrolled and organic causes for dyspepsia were ruled out after extensive assessment. They were segregated into three categories according to their performance on Hospital-Anxiety-and-Depression-Scale (HADS) and the impact on health related quality of life was observed through Short-Form-36 (SF-36) General Health Survey questionnaire.

Results: Males were in slight predominance (53%), unemployed individuals were in abundance (82.9%), the median age of presentation was 31-40 years, symptoms duration was less than 2 years for majority of the patients (42.5%) and the most commonly presenting symptom was Epigastric-Pain-Syndrome/Postprandial-Distress-Syndrome overlap (EPS-PDS) (80.5%). Forty nine and half percent of the patients had abnormal HADS and had worse quality of life and had more frequent Out-Patient-Department visits.

Conclusion: Functional dyspepsia considerably affects emotional, physical and psychological health and impairs quality of life.

Keywords: Anxiety, Depression, Dyspepsia, Health-related-quality-of-life.

INTRODUCTION

Functional gastrointestinal disorder is one of the most commonly presenting diseases in Gastrointestinal (GI) Out Patient Departments, the commonest of which are the two subtypes namely Irritable Bowel Disease and Functional Dyspepsia[1]. Functional Dyspepsia is defined as the presence of bothersome postprandial fullness, early satiation, epigastric pain or epigastric burning thought to originate from the gastroduodenal region in the absence of any organic, systemic or metabolic disease[2].

Population based studies on Functional Dyspepsia and its economic burden are few due to technical, financial and logistic difficulties of excluding organic causes in large populations. According to a study, the prevalence of undiagnosed dyspepsia lies between 7%-45%, whereas that of functional dyspepsia is 11%-29.2% globally[3]. Functional dyspepsia per se is not associated with increased mortality but its impact on the quality of life of the patients and the health care services has been tremendous. Data from several European and North American populations revealed that about 50% of the dyspeptic patients were on medications most of the time and about 30% took days off work and school due to severe symptoms[4].

Anxiety and depressive disorder is a common finding in patients presenting to GI OPDs with functional GI complaints[5]. Fifty four percent of patients with affective disorder presented with GI complaints which was much higher than the control group with no affective disorder[6]. It is not clear whether the psychopathological factors have a role in the pathophysiology of functional dyspepsia or dyspepsia symptoms lead to anxiety and depressive disorder or there is a common

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predisposing factor for both the disorders[7]. It is difficult to determine the temporal relation between the onset of gut symptoms and anxiety and depressive disorder because of the insidious onset and fluctuating course of both the disorders[8].

Quality of life is an exceedingly important health outcome and is frequently measured in clinical and epidemiological studies. In disease studies that are found to have no clinical or biological markers, quality of life acts as a particularly useful outcome measure[9].

The aim of this study is to determine the relation of functional dyspepsia with affective disorders like depression and anxiety in our patients presenting either to gastrointestinal OPD directly or referred from medical, surgical or other specialized departments with chronic debilitating symptoms. We also tried to determine the impact of the patients' symptoms on their health, both physically and emotionally and the extent of the morbidity associated with poor quality of life indices.

MATERIAL AND METHODS

This was a cross sectional study with sampling technique of non-probability convenience sampling. The study setting was the Gastroenterology Department of Pak Emirates Military Hospital Rawalpindi from May 2017 to October 2017. The sample size was calculated using National Statistics Services Calculator with a 95% confidence level, a confidence interval of 0.04 and a standard error of 0.02 with a relative standard error of 5%.

A sample of four hundred patients, aged 18-80 years, with symptoms of epigastric pain or burning, post prandial fullness or early satiety or a combination of these symptoms for the last six months were provided with written informed consents. This study used ROME IV criteria for defining dyspepsia as 1 or more of the following 3 symptoms for 3 months within the initial 6 months of symptom onset: (1) postprandial fullness, (2) early satiety, and (3) epigastric pain or burning[10]. All the patients enrolled with dyspepsia had symptoms not related to organic, metabolic or systemic causes, neither they presented with alarming features including vomiting, gastrointestinal bleeding, abdominal mass, dysphagia, unexplained weight loss and anemia. Patients with dyspeptic symptoms secondary to organic, metabolic or systemic causes including pregnancy, diabetic gastropathy, peptic ulcer disease, atrophy or erosive gastrodoudenal lesions, esophagitis, history of malignancy, diseases of liver, pancreas, gallbladder and spleen, dyspepsia secondary to infections like tuberculosis and drug induced gastritis including NSAIDS, steroids, nitrates and calcium channel blockers were excluded from the study.

The enrolled patients had a baseline assessment including history of dyspepsia, symptom duration, drugs already used for symptom relief, presence of alarm features, a thorough medical and surgical history, family history of GI malignancy, a detailed drug history and the number of OPD visits. A complete physical examination, baseline biochemical profile, blood indices, stool antigen for H pylori, ultrasound scan for gall bladder and pancreatic pathology and upper GI endoscopy were offered to all patients.

Screening for anxiety and depression and grading its severity was done using Hospital Anxiety and Depression Scale (HADS) with a score of 0-7 referring to normal, 8-10 borderline abnormal and 11-21 abnormal cases[11]. Anxiety is defined as an emotion characterized by excessive and persistent feelings of tension, worried thoughts and physical changes like sweating, palpitations and increased blood pressure[12] and depression as a mood disorder that causes a persistent feeling of sadness and loss of interest[13].

Quality of life is defined as Individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level

of independence, social relationships, personal beliefs and their relationship to salient features of their environment[14]. Thirty six-item Short Form-

were summarized as frequencies and percentages. The comparison between medians of variables was assessed using Kruskal Wallis H-

Table-I: General characteristics of study subjects.

Demographic variable	Frequency (Percentage)
Gender	
Male	212 (53)
Female	188 (47)
Age group (years)	
≤20	24 (6)
21-30	58 (14.5)
31-40	120 (30)
41-50	72 (18)
51-60	70 (17.5)
61-70	40 (10)
71-80	16 (4)
Median age in years	43
Median drugs used	
Normal HADS	2
Borderline HADS	3
Abnormal HADS	3
Symptoms	
EPS*	52 (13)
PDS†	26 (6.5)
EPS-PDS overlap‡	322 (80.5)
Symptom duration in years	
<1	100 (25)
2	170 (42.5)
3	50 (12.5)
4	40 (10)
5	14 (3.5)
>5	26 (6.5)
Employment status	
Employed	132 (34.2, n=386)
Males	120 (90.9, n=132)
Females	12 (9.1, n=132)
Unemployed	254 (65.8, n=386)
Males	86 (33.9, n=254)
Females	168 (66.1, n=254)
Students	14 (3.5, n=400)
Male	6 (42.8, n=14)
Female	8 (57.1, n=14)

*Epigastric Pain Syndrome, †Post-prandial Distress Syndrome, ‡Epigastric Pain Syndrome – Post-prandial Distress Syndrome overlap

36 (SF-36), consisting of eight domains with scores ranging from 0-100 with a higher score showing higher quality of life, was used to document the effect of dyspepsia on the quality of life of the patients[15].

Continuous data was reported as median and interquartile range (IQR). Quantitative data

test. A *p*-value was considered to be significant if <0.05. Statistical analysis was done using SPSS 16.0 and RAND 36 scoring tool V.1.

RESULTS

A total of 400 patients were enrolled, 53% were males and 47% females. The age group 31-40 years (30%) contributed maximally to the

sample size, followed by 41-50 years age group (18%). Majority of the patients presented with symptom duration of 2 years or less (42.5%), followed by symptom duration of less than a year (25%), while those with abnormal HADS (11-21) tend to present to GI OPDs late probably because they were being investigated and treated in other OPDs for their symptoms. The most common

and 23.5% female population (table-II). All the students who participated in the study scored high on HADS. A greater percentage of patients with abnormal HADS had EPS-PDS overlap (38%) and those employed had lower scores for HADS (table-II). The scores for the first seven individual domains of SF 36 general health survey (i.e; Physical Functioning, Role Physical,

Table-II: Demographic data in relation to HADS.

Features	HADS - Frequency (Percentage)		
	Normal (0-7)	Borderline (8-10)	Abnormal (11-21)
Males (n=206)	57 (27.7)	49 (23.8)	100 (48.5)
Females (n=180)	15 (8.3)	81 (45)	84 (46.6)
Students			
Males (n=6)	0	0	6 (100)
Females (n=8)	0	2 (25)	6 (75)
Symptoms			
EPS*	10 (19.2)	16 (30.8)	26 (50)
PDS†	0	16 (61.5)	10 (38.5)
EPS-PDS ‡	60 (18.6)	110 (34.2)	152 (47.2)
Employed			
Male (n=120)	56 (46.7)	38 (32)	26 (22)
Female (n=12)	6 (50)	4 (33)	2 (17)
Unemployed			
Males (n=86)	2 (2.3)	12 (14)	72 (84)
Females (n=168)	5 (3)	77 (46)	86 (51)

*Epigastric Pain Syndrome, †Post-prandial Distress Syndrome, ‡Epigastric Pain Syndrome – Post-prandial Distress Syndrome overlap

Table-III: Short form 36 scores in relation to HADS.

Variable	HADS (Median with IQR)			p-value*
	Normal	Borderline	Abnormal	
Physical Functioning	100(0)	85.0 (35)	40.0 (65)	<0.001
Role Physical	100(0)	100 (100)	0.00 (0)	<0.001
Role Emotional	100 (0)	100 (0)	0.00 (0)	<0.001
Energy/Fatigue	70.0 (5)	30.0 (20)	20.0 (0)	<0.001
Emotional Well-being	72.0 (8)	28.0 (32)	20.0 (0)	<0.001
Social Functioning	87.5(12.5)	62.5 (25)	50.0 (12.5)	<0.001
Pain	67.5 (10)	45.0 (35)	45.0 (45)	<0.001**
General Health	45.0 (10)	35.0 (10)	25.0 (10)	<0.001

All analyzed by Kruskal Wallis H-test and post Hoc test with medians, p is considered significant if <0.05

*p-value between groups using Kruskal Wallis H and post Hoc tests, **p-value with post Hoc multiple comparisons for pain showed a significance of 1.0 between borderline HADS and abnormal HADS

IQR Interquartile Range, HADS Hamilton Anxiety and Depression Score, normal 0-7, borderline 8-10, abnormal 11-21

symptom observed was EPS-PDS overlap (80.5%) followed by EPS (13%). The percentage of unemployed patients was considerably higher (82.9%, n=386), with 7% (n=400) students, of whom female students were in majority (57.1%, n=28) (table-I).

Majority of the patients observed had abnormal HADS (49.5%, n=400) with 25.5% male

Role Emotional, Energy/Fatigue, Emotional Well-being, Social Functioning, Pain) were considerably higher for the patients with normal HADS as compared to borderline and abnormal HADS. The pain domain of SF 36 general health showed similar results for abnormal and borderline HADS. The score for General health remained low for all participants (table-III).

Patients with normal HADS used a median of 2 drugs while that of borderline and abnormal HADS used 3 drugs each. The health seeking behavior was higher in patients with abnormal HADS, reflected by the number of Gastrointestinal and other OPD visits (table-IV). The median for medical OPD visits remained consistent among all the HADS groups i.e; 1 however, the median for GI OPD visits was

and Canada[21,14]. Unemployed patients with a median age of 55 years presented with abundance and with higher scores on HADS in contrast to other studies where employed patients had a greater percentage[18]. In patients with ages less than 25 years, female population was in predominance and all scored high on HADS in accordance to a study from Taiwan[22]. The health seeking behavior in terms of OPD

Table-IV: Health seeking behavior in relation to HADS n(%).

Variable				OPDs (frequency of visits)		
n=400	Age (years)	Employment status	Co-morbids	Cardiology	Surgical	Psychiatry
Normal HADS						
Males (1%)	<35 (0.5%)	Employed	nil	1		
	<65 (0.5%)	Unemployed	nil	1		
Females (0.5%)	<45	Employed	nil	1		
Borderline HADS						
Males (1%)	<40	Employed	nil	1	1	
Females (1%)	≥60	Unemployed	nil	1		
Abnormal HADS						
Males	<25 (3.5%)	Employed (3%)	nil	1		
			nil	1		
		Student (0.5%)	Clinical	2		
	<35 (0.5%)	Employed	depression		2	2
Females	<25 (0.5%)	Student	nil			
	>65 (4.5%)	Unemployed	nil	1	4	
	>65 (1%)	Unemployed	nil	1		

different among the groups i.e; 2, 2 and 3 for normal, borderline and abnormal HADS, respectively.

DISCUSSION

This study helped to segregate dyspepsia secondary to organic and functional causes in patients with undiagnosed dyspepsia. Male population was in slight predominance in contrast to various Western studies[16,17], but in accordance to a few Indian studies[18]. Majority of the patients with functional dyspepsia landed in to abnormal HADS in accordance to studies from Sweden, Australia and Finland[19]. Patients with EPS-PDS overlap were in abundance and scored higher on HADS in accordance to several studies from Italy, Sweden and Japan[20,21] but in contrast to studies from China, Nigeria, Taiwan, Europe

visits was higher for patients with abnormal HADS in accordance to several other studies[22,23].

Statistically significant impact on SF 36 scores were observed among different severity levels of HADS for all domains, especially energy/fatigue, emotional well-being and pain, except for general health that was consistently perceived with low scores by all participants. The results were in accordance to other studies[22,23].

CONCLUSION

Functional dyspepsia considerably affects emotional, physical and psychological health and impairs quality of life.

CONFLICTS OF INTEREST

This study has no conflict of interest to be declared by any author.

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