

THE PSYCHOPATHOLOGY AND LIFE EVENTS IN FUNCTIONAL DYSPEPSIA : A CASE - CONTROL STUDY

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Abstract

Background: Functional dyspepsia is associated with high psychiatric morbidity and life event stress.

Patients: This is a prospective study of 163 patients with functional dyspepsia and 163 healthy controls.

Aim: To investigate the relationship between functional dyspepsia, life events and mental illness.

Methods: A semi-structured psychiatric interview and clinical mental state examination were used in the psychiatric assessment of the patients and controls. Psychiatric diagnoses were made according to DSM3-R. A modified version of Life Events Scale by Tennant and Andrews was used in the assessment of life events stress.

Results: Psychiatric illness was significantly more in the patients than the controls. Anxiety and depressive disorders dominated the clinical picture (84%) and the symptoms were usually of mild nature. Life events stress did not seem to be significantly related to either the psychiatric disorders or the functional dyspepsia as a whole.

Conclusions: Further studies are needed, especially in relation to the causative association between the functional dyspepsia and psychiatric disturbances.

KEY WORDS:

ANXIETY DEPRESSION LIFE EVENTS STRESS FUNCTIONAL
DYSPEPSIA

Introduction

The majority of the patients attending gastroenterology clinics are suffering from complaints for which no structural pathology can be identified Creed et al (1988). Macdonald et al (1980) ported that patients with non-organic gastrointestinal complaints suffer much more from psychiatric illness compared with patients with organic illness; nearly half of the former suffers from moderate or severe depressive illness. Similar findings on the relationship between major life events, depression and functional abdominal complaints were reported by Creed et al (1988). The commonest functional gastrointestinal disorders; functional dyspepsia and irritable bowel syndrome (Harvey 1983; Talley 1988; Thompson 1984) are considered as psycho-physiological disorders in which physiological disturbances occur as integral part of a psychological reaction (Hislop 1987; Dotevall 1985; Creed 1987). Patients with idiopathic non-ulcer dyspepsia also reported more depressive symptoms and neurotic or anxious tendencies than the matched healthy control (Bennet 1991). Haug et al (1995) reported higher levels of state-trait anxiety, general psychopathology and depression in patients with functional dyspepsia than patients with duodenal ulcer and the healthy controls. Talley et al (1986) reported significant differences in non-ulcer dyspepsia, irritable bowel syndrome and organic disease on anxiety, neuroticism and depression. In a later study (1990) the same author and others found that personality characteristics of the patients with functional dyspepsia did not differ from those of the healthy individuals, though the patients scored high on hypochondriasis, depression, conversion hysteria and schizophrenia.

Studies abroad are scarce regarding the role of psychological factors in functional dyspepsia. The aim of the present study is to investigate, in a prospective way the frequency of psychiatric illness and life events stress in functional dyspepsia, as such study, to date had not been carried out in the Kingdom of Saudi Arabia.

METHODS

Patient Selection

Functional dyspepsia is defined as abdominal pain, discomfort or nausea, referable only to the upper alimentary tract and have been present for one month or more (Talley 1986). In addition, clinical and endoscopic evaluation fails to reveal an obvious organic cause for the symptoms, specifically peptic ulceration, oesophagitis and malignancy. Patients with evidence of irritable bowel syndrome, gastro-esophageal reflux, and gallstones were also excluded from the study. Physical examination, upper gastrointestinal endoscopy and abdominal sonography were carried out by the gastroenterologist in charge of the two clinics at King Fahad Hospital of the University (KFHU). A total of 163 patients diagnosed as functional dyspepsia were seen over a period of one year and included in the study. An equivalent number (163) of healthy volunteers from the hospital and university staff, matched for age and sex were recruited randomly as normal controls. They had no past history of peptic ulcer, gallstones, severe medical or psychiatric illness.

Psychological Assessment

The psychiatric evaluation was carried out by the psychiatric team (the authors), using a semi-structured psychiatric interview and a clinical mental state examination. Attention was focused on sociodemographic data like age, sex, marital status and life events. The psychiatric diagnoses were made along the lines cited in DSM-111-R (1987). The intensity of the psychiatric illness was graded as mild, moderate and severe. Personality was assessed only in descriptive terms (as mentioned above) and no personality inventories were used due to technical difficulties. Cognitive function was assessed clinically and the level of intelligence was judged only by general information, school record and work record. The measure of life events stress was carried out using a modified version of the scale by Tennant and Andrews (1987). Items not suitable to Saudi family culture (extra-marital relationship, adoption) were omitted. Life events were not scaled and no numerical values were given for the degree of life change or stress, due to technical difficulties. Only life events experienced 6 months prior to the diagnosis of functional dyspepsia were included in the study. Chi-square

test, Fisher's exact test and paired Student's *t* test were used for significance whenever relevant.

Results

The total number of patients who attended the gastroenterology clinics at KFHU during the one-year study period was 477 patients. Of these 163 (34.2%) patients were diagnosed as suffering from functional dyspepsia (as defined above) and included in the study.

Age distribution of the patients and the control groups is shown in Table 1. The differences between the mean ages of the patients (35.5years) and the controls (34.7) were not statistically significant. The majority of the patients and controls were between the ages 21-50 (74% and 75.4% respectively). Only 5 of the patients and 2 of the controls were above the age of 60. Ninety five patients (58.3%) were females, compared with 90 (55.2%) subjects of the control group,; differences were not statistically significant ($P < 0.65$). Eighty seven (53.4%) patients were employed; most of the unemployed (65 out of 76) were females. In the control group 100 subjects were employed. There were no significant intergroup differences in employment rates ($X=2.12$, $P < 0.14$). 121 patients were married, 32 were single and others (10 patients) were divorced or widowed; compared with 115, 35 and 13 of the controls respectively, differences again were not statistically significant ($P < 0.71$).

Psychiatric illness

50 patients of the 163 patients had psychiatric illness; a prevalence of 30.7%, compared with 31 patients of the control group (19.0%); differences being statistically significant ($p < 0.01$). The details of the psychological disturbances were shown in Table 2. Anxiety and depressive symptoms dominated the clinical picture of the patients (84%). Twenty one patients suffered from anxiety disorders (42%), mostly generalized anxiety disorder; compared with 18 patients of the control group (58%). Eighteen patients were rated as mild and 3 as moderate anxiety symptoms, while all the patients in the control group suffered only from mild symptoms. In addition, 3 patients suffered from panic disorder without agoraphobia. Twenty one patients (42%) suffered from depressive illness, mostly

dysthymia (90%), compared with 9 patients of the control group (29%); differences were statistically significant ($p<0.03$). 14 patients

were rated as mild and 7 as moderate depressive illness, while all the 9 patients in the control group suffered only mild symptoms. One patient suffered from grief reaction and was depressed. Overlaps between depressive and anxiety symptoms were frequent, and the diagnoses were made on the dominant symptoms only. Psychotic conditions were absent except in one patient with presenile dementia. Other psychiatric conditions were rare (Table 2). Only in 2 patients did the psychiatric disturbances definitely precede the onset of the functional dyspepsia.

Life events

No significant differences in the number of life events between the patients and controls were noticed in relation to age, sex, marital status and duration of the dyspeptic symptoms. The distribution of life events was not significantly different in the patients and controls ($p<0.14$) and the difference between the mean number of life events in the two groups was also insignificant ($p<0.24$). The individual events of "minor illness or injury", "a close family friend or relative died", "studied for or did exam", and "much better off financially" were significantly more in the patients). The total number of patients having 3 or more undesirable events was also significantly more in the patients than the controls ($p<0.05$), as reported by the same authors (1997).

The differences between the mean number of life events in dyspeptic patients with and without psychiatric illness were not statistically significant. No significant differences were also noticed in the distribution of life events (Table 3). Individual and undesirable life events too, were not statistically different in the two groups (Table 4).

Discussion

The digestive tract is susceptible to stress-induced alterations of secretions, motility and vascularity (Davenport 1982). Emotional disorders, such as anxiety and depression are presumed to influence gastrointestinal disorders and such patients seem to respond better to anxiolytic and antidepressant drugs (Bume et al 1975; Terris 1971).

30.7% of the patients with functional dyspepsia were reported to suffer from psychiatric illness, compared with 21% of the control group; differences being statistically significant. Similar findings to ours were reported in some of the studies abroad; thus Mackdonald et al (1980) found that non-organic gastrointestinal disorders are twice as likely as those with organic illness to be suffering from psychiatric disturbances. Kingham (1985) reported that nearly half of those with severe functional bowel disorder have been shown to have moderate or severe depressive illness. Creed(1988) reported a 34% of 79 patients with functional gastrointestinal disorder as having psychiatric disorders that definitely occurred before the onset of abdominal pain.

Anxiety and depressive disorders dominated the clinical picture of the patients in the present study (84%). Though the control group patients reported a more or less similar prevalence of anxiety, yet they reported significantly less prevalence of depressive disorders ($p < 0.03$). Talley et al (1986) reported initial baseline but significant differences on a number of mood measures in essential dyspepsia, compared with community controls, though the numerical differences observed were not large. David et al (2000) reported a 35% rate of anxiety and depressive disorders. The authors went to argue that the association of anxiety, neuroticism and depression with essential dyspepsia cannot be accepted as a causal relationship, as this has to satisfy other criteria (Hill 1965). In addition, these results could also be interpreted as merely indicating a non-specific response to the presence of discomfort as reported in a number of organic diseases (Mersky 1980; Jenkins 1976; Polley 1970; Liedtke 1977; Mandelbrote 1955). On the other hand , Creed et al in a well-designed study reported similar findings to ours' of the prevalence of psychiatric illness that definitely preceded the onset of abdominal complaints. He argued that the associated psychiatric disorder was not simply a reaction to prolonged abdominal disorders. However they did not rule out the possibility that the depressive and anxiety symptoms may lead to a lowered pain threshold and that this may contribute to the experience of abdominal pain. Kingham et al (1985) reported a 50% of patients with severe functional bowel disorder to be moderate or severely depressed, but he did not show whether the psychiatric illness or the bowel disturbance occurred first. Hafeiz and Al-

Quorain (1994) reported a significantly higher psychiatric morbidity in patients with irritable bowel syndrome than in the healthy controls. The present study could not prove the causative relationship between the psychiatric illness and the abdominal complaints, as the majority of our patients (86%) failed to determine the exact onset of the psychiatric symptoms. In fact many of the psychiatric symptoms were disclosed incidently during the psychiatric evaluation and no prior complaints of such symptoms were made. What was definite is that the psychiatric disturbances were mostly of mild nature, and unlikely to be the major cause of the functional dyspepsia.

No abnormal personality traits were noticed in the patients with functional dyspepsia in the present study. Talley et al did not find any distinct personality profile in non-ulcer dyspepsia, though significant differences were observed on the personality clinical scales. No psychotic disorders were noticed in the present study and, in addition the anxiety and depressive symptoms reported were mostly mild ones, a finding common to most of the studies abroad(Creed 1988; Talley 1986,1990).

Contrary to many of the studies abroad (Creed 1988; Haug 1995)) life events in the present study were not more in the dyspeptic patients with psychiatric illness. Although 4 of the individual life events and undesirable events were significantly more than in the control group(Hafeiz et al 1997), yet these events were equally distributed in patients with and without psychiatric illness (Table 4).

Conclusion

The study shows a significant association between functional dyspepsia and psychiatric disturbances in comparison with a control group. Life events however were not significantly related to the psychopathology in functional dyspepsia. The causative relationship between the psychiatric disturbances and the functional dyspepsia was not proven. Further studies, that are based on more objective criteria, as defined by Epidemiologists (Kingham 1985) should be carried out before a final conclusion could be reached on this complex relationship. An integrated approach in dealing with this multidisciplinary problem is of vital importance.

Table (1)
Age Distribution

AGE-GROUP	PATIENTS	CONTROLS
15-20	17	20
21-30	45	40
31-40	45	58
41-50	30	24
51-60	21	14
>60	5	7
TOTAL	163	163

Chi square = 4.58, df = 5, $p < 0.46$

TABLE (2)
Psychiatric illness in the patients and Controls

PSYCHIATRIC ILLNESS	PATIENTS (163)	CONTROLs (163)	TEST FOR SIGNIFICANCE
Anxiety disorders	24	19	NS
Depressive disorders	21	9	$\chi=4.44$ $P < 0.03$
adjustment disorder	3	2	NS
Migraine	1	1	NS
Dementia	1	0	NS
Total	50	31	$\chi=5.93$ $p < 0.01$

Comparison of 50 patients and 31 controls with psychiatric illness:

Chi square = 5.93, $p < 0.01$

NS = Not significant

TABLE (3)
Distribution of number of events: dyspeptic patients with and without psychiatric illness

No Events	Psychiatric Patients(50)	Non- psychiatric patients (113)	Test for significance
Nil	1	4	NS
1-3	20	49	NS
4-6	20	48	NS
≥ 7	8	13	NS
TOTAL	50	113	$\chi=0.94$ $p<0.81$

TABLE (4)
Frequency of individual and undesirable events: dyspeptic patients with and without psychiatric illness

Event	Psychiatric patients (50)	Non-psychiatric patients (113)	Test for significance
Minor illness	23	44	NS
Friend died	18	32	NS
Did exam	5	12	NS
Better finance	8	15	NS
Undesirable events	26	61	NS

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هذه دراسة مستقبلية عن ١٦٣ مريض بسوء الهضم الوظيفي مقارنة مع نفس العدد من الأصحاء لأستكشاف العلاقة مع المرض النفسي والضغط الحياتية، لقد استعملنا التقييم النفسي شبه المقنن والتشخيص الاحصائي رقم ٣ ، كما استعملنا مقياس الضغوط الحياتية للباحثان تنانت وأندروز. لقد كانت النتيجة ان الامراض النفسية كانت أكثر بدرجة معتبرة (٣٠,٧٪ إلى ١٩٪) في المرض بسوء الهضم الوظيفي منها في العينة الضابطة.

لقد كانت حالات القلق النفسي والاكئاب هي الغالبية العظمى بين الأمراض النفسية (٨٤٪). إن هذه الدراسة لم تثبت علاقة الضغوط الحياتية بسوء الهضم الوظيفي بصفة معتبرة مع ان بعضها كان أكثر في المرضى، ويقترح الباحثون إجراء دراسات أخرى أكثر تفصيلا لتحديد كيفية هذه العلاقة.