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Original article

Anxiety, personality traits and quality of life in functional dyspepsia-suffering patients

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ABSTRACT

Background: Psychosocial stressors either acute or more sustained frequently precede the onset and exacerbation of the symptoms of the functional dyspepsia (FD). Depressive mood and quality of life have been already reported for interference in functional dyspepsia suffering patients.
Methods: The examination were performed on 60 FD patients (30 females and 30 males), aged 20–79 years, 60 peptic ulcer subjects and 60 healthy volunteers in which we have investigate levels of anxiety and depression, personality traits and quality of life.
Result: According to the Hamilton Depression and Anxiety Rating Scales, the population with FD had the average score which classified them into the group of patients with the moderate depression (20.57 ± 4.45). Personality traits estimation based on data obtained by the Eysenck personality questionnaire revealed higher neuroticism scores in the group with functional dyspepsia. Both parameters, level of the neuroticism and anxiety level, expressed highly significant level of mutual concordance. Patients with functional dyspepsia reported a greater adverse impact of symptoms of emotional distress and food and drink problems.
Conclusion: Results are indicating that the depression and anxiety level is the highest in patients with functional dyspepsia and that anxiety level corroborates with the neuroticism level from the Eysenck scale. Psychological disturbances are influencing the quality of life mostly in patients with dyspepsia in the form of emotional distress and the problem with the food and beverage intake.

1. Introduction

Psychosocial stressors either acute or more sustained frequently precede the onset and exacerbation of the symptoms of the functional dyspepsia (FD) and may, at least, influence the treatment outcome [1–3]. Anxiety, depression, panic attacks, posttraumatic stress disorders, and other somatization disorders are frequently detected prior to or simultaneously with the occurrence of functional gastrointestinal disorders [4].

Depressive mood and quality of life have been already reported for interference in functional dyspepsia suffering patients [5]. Furthermore, Hsu et al. (2009) [6] claimed that postprandial distress syndrome, but not epigastric pain syndrome, according to Rome III criteria, is independently associated with psychopathological factors. Assessment of the personality traits, negativism, irritability, aggression, and neuroticism may predict response to drug treatment of functional gastrointestinal disorders even when serotonergic sensitivity is controlled for [7].

The aim of the study was to assess the eventual differences in quality of life between patients with functional dyspepsia and peptic ulcer. Also, the goal was to evaluate the impact of the psychological impairment to the severity of the gastrointestinal symptomatology in the studied groups.

We wanted to investigate the differences in the personality traits among the groups obtained, and, additionally, to clarify the recognized psychological predisposing traits for either FD or peptic ulcer.

2. Materials and Methods

The examination were performed on 180 individuals chosen from a larger sample of 270 persons (patients, 100 females and 80 males) and 90 healthy volunteers, divided into three groups matched in

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Table 1
Demographic characteristic in examined population.

Observed group	Demographic characteristics			
	Female	Male	Age, years (mean ± SD)	Total sample
FD	30	30	49.23 ± 15.18	60
Healthy controls	30	30	47.57 ± 15,43	60
Peptic ulcer	30	30	48.34 ± 13.44	60
Total in sample	90	90	49.62 ± 14.77	180

age and gender: 60 therapy-naïve newly diagnosed patients with functional dyspepsia (30 females and 30 males), aged 20–79 years, (average life span 49.6 ± 14.8) and 60 patients with peptic ulcer, which referred to the gastroenterology unit of the Clinical and Hospital Center "Bezanijska Kosa" in a 6-months period, April to October 2009, and 60 healthy volunteers recruited for the study (Table 1).

Inclusion criteria for the FD patients and persons with peptic ulcer:

1. older than 18 years,
2. no previous gastroenterology medications,
3. persistent or recurrent pain or discomfort localized in the upper abdomen, during at the least 12 weeks, within the preceding 12 months,
4. no evidence that dyspepsia relieved by defecation or associated with irregularity in stool frequencies and stool form,
5. no evidence of organic disease on the upper endoscopy examination for FD patients; for peptic ulcer endoscopically confirmed existence of the newly diagnosed ulceration on the stomach and/or duodenum,
6. normal findings on abdominal ultrasonography,
7. negative prior history about psychiatric diseases and disorders.

No patients underwent abdominal surgery, coronary artery disease or any kind of metabolic disease. All the subjects were acquainted in detail with the study procedure and they all signed a written consent form. The study was approved by the Ethic Committee of School of Medicine, in Belgrade, Serbia (Decision no. 124-32/09). All the patients underwent psychological examination which included psychological evaluation by specialist of psychiatry and subsequent testing by the Hamilton's depression 21-item inventory and Hamilton's 14-item anxiety inventory, both Serbian versions [8–10]. All the items were rated in five grades: 0, absent; 1, mild; 2, moderate; 3, severe; 4, incapacitating (some items, like insomnia, hypochondriasis, diurnal mood variations, insight into the illness and obsessive-compulsive symptomatology are only graded in three levels: 0, absent; 1, doubtful or trivial; 2, present). Usually, Hamilton depression and anxiety inventories contain items related to the gastrointestinal symptoms and weight loss. This time they were omitted because the mentioned symptomatology is part of the illness. Interpretation of the total score of Hamilton's depression rating scale is as follows: less than 8, without depression; 9–17, mild depression; 18–24, moderate depression; and higher than 24, severe depression requiring hospitalization. According to the Hamilton's anxiety rating scale, persons with generalized anxiety disorder and panic disorder tended to have a total anxiety score of above 20. The patients completed self-reported questionnaire *Quality of life in reflux and dyspepsia* [QOLRAD, 11], Serbian version, which contained 25 items, combined into five dimensions: emotional distress, sleep disturbance, food/drink problems and physical/social functioning. The questions are rated on a 7-graded Likert type scale: the lower the value the more severe the impact on the daily functioning. Our decision for QOLRAD has been sustained by the fact that QOLRAD is a short and user-friendly instrument with excellent psychometric properties [11].

The personality traits have been revealed by using of the short, 48-item Eysenck inventory, Serbian version, already translated and adjusted for Serbian language, in four scales, psychotic, neuroticism, lie and extroversion/introversion scales, each containing 12 questions [12]. All the questionnaires are for a longer period in routine use in the psychological examinations and they all were validated for the Serbian population before the entrance in everyday practice. The investigation has been performed by the trained psychiatrist.

3. Statistical analysis

After coding, all the answers were systematized in the common database, and the following statistical analyses were performed: The Kolmogorov–Smirnoff *Z* test and confidence interval calculator were used to evaluate the sufficiency of the sample. The results were satisfactory: all the values belonged to normal distribution, which made them adequate for the subsequent statistical testing. Besides usual parameters of central tendency (descriptive statistics: mean, standard deviation [SD], extreme values); Pearson's chi-square, Kruskal–Wallis and one-way analysis of variance (ANOVA) with Bonfferoni post hoc correction test were used to reveal the differences in the scores obtained during the psychological and quality of life testing. The eventual correlations have been tested using Pearson's and Kendall tau–*b* bivariate correlation coefficient. The entire testing was performed at 95% level of confidence.

4. Results

According to the Hamilton Depression and Anxiety Rating Scales, the population with FD had the average score which classified them into the group of patients with the moderate depression (20.57 ± 4.45). Mean depression scores differed significantly according to ANOVA test. Bonferroni post hoc correction emphasized FD as the group with the highest scores of anxiety and depression. The Kruskal–Wallis test outlined the differences in the distribution of patients based of the severity of depression, and post hoc chi-square emphasized the highest number of patients with the mild to severe depression in the group of FD. The group of FD patients expressed higher anxiety score values than in other groups, and this difference was confirmed by Bonferroni post hoc correction (Table 2).

Personality traits estimation based on data obtained by the Eysenck personality questionnaire revealed higher neuroticism scores in the group with functional dyspepsia (Table 3). Level of the neuroticism and anxiety level, expressed high significance in mutual concordance, according to the bivariate correlation tests for FD patients (Kendall's tau–*b* correlation coefficient = 0.901, $p = 0.000$). Other items in the Eysenck test did not differ among the groups obtained (Table 3).

Neuroticism and anxiety levels significantly correlated (*R* squared = 0.917, $p = 0.000$) for patients with FD.

Table 2
Differences in the depression and anxiety scores among obtained groups.

FD group	Average score of depression (SD)	Without depression	Mild depression	Moderate depression	Severe depression	Average score of anxiety (SD)
FD ($N = 60$)	20.57* (4.45)	2	16	30	12	16.33 (8.45)†
Healthy controls ($N = 60$)	7.87 (0.78)	54	3	3	0	6.1 (0.50)
Peptic ulcer disease ($N = 60$)	10.83 (5.26)	42	9	8	1	9.73 (6.03)

Post hoc chi square = 105; $df = 6$; $p = 0.000$.
† ANOVA: $F = 16.33$; $df = 2, 178$; $p = 0.000$.
* ANOVA: $F = 15.74$; $df = 2,178$; $p = 0.000$.