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ASSESSMENT OF MENTAL-EMOTIONAL CHANGES IN IRRITABLE BOWEL SYNDROME USING CLINICAL METHODS

Makhmudova Lola Izzatiloevna
Bukhara State Medical Institute, Bukhara, Uzbekistan

Annotation Irritable bowel syndrome affects the emotional and mental state of patients, their social activity, professional activity and family relationships. 82 patients were selected for the study. Of these, 49 were the diarrhea-dominated type of IBS and 33 were the constipation-dominated type. The average age of patients is 33.2±0.8 years. Mild to moderate levels of depression have been found to dominate the irritable bowel syndrome accompanied by a predominance of diarrhea compared to the type of suppressor with a predominance of constipation. No equally severe levels of depression were found in either group. It can be seen from this that an increase in the number of seizures affects the mental and emotional activity of patients, leading to the appearance of depressed states of varying degrees.

Keywords: irritable bowel syndrome, depression, Sung scale

Irritable bowel syndrome (IBS) significantly worsens the quality of life of patients, since the incidence is 19-40 years old.

ITS affects the emotional and mental state of patients, their social activity, professional activities and family relationships [5].

ITS causes economic damage due to the direct costs and indirect indicators of medical examination, including temporary disability.

Thus, direct medical costs, including medical examinations and treatment, are estimated at $1.6–10.5 billion per year in the United States (US). Indirect costs (temporary disability compensation) - more than 20 billion dollars per year. The total estimated cost of IBS in the United States is estimated at 20-25 billion dollars per year [2,6-13]. These costs are greater than the estimated cost of a chronic disease such as bronchial asthma, which is estimated at $16 billion per year.

According to estimates, IBS origin has been shown to reduce labor productivity by up to 21% per week, thereby increasing employer costs [1,3].

The Korea National Insurance Company, which covers nearly 100 percent of South Korea's population, analyzed the 2008 IBS patient database using MKB-10 (codes K58, K58.0, K58.9). The prevalence of IBS was 2.3-9.6% of the Korean population, depending on the region. In 2008, total IBS costs approached $559 million, of which direct medical costs accounted for 59.7%. The direct economic damage caused by IBS is very high and has been equal to 0.46% of the national

medical expenditure [4].

The purpose of the studyis to determine the level of depression in patients with irritable bowel syndrome.

Research material and methods. The study was conducted in the department of gastroenterology of the multidisciplinary medical center of Bukhara region, and 82 patients treated in the inpatient setting with IBS were selected. The diagnosis of IBS was made based on the Rome IV criteria (2016), and the Bristol scale of stool patterns was used to determine the clinical form of IBS. The average age of patients is 33.2±0.8 years.

Patients with IBS were divided into two groups: non-refractory (IBSn – 35 patients) and refractory (IBSr – 47 patients) of IBS. Depending on the expression of clinical symptoms, patients with IBSn-d (diarrhea) - 21 (25.6%), IBSn-c (constipation) - 14 (17%), IBSr-d - 28 (34.2%) and IBSr-c – divided into 19 people (13.2%).

The Tsung scale was used to determine the level of depression in patients. The Zung Self-Rating Depression Scale is a self-rating depression test developed by psychiatrist Dr. William Tsung at Duke University. The test measures the level of depression of patients and determines the degree of depressive disorders. The Tsung scale can be used by the examinee or physician to self-examine or screen for depression. The Tsung scale test has high accuracy and reliability, which allows to avoid additional economic and time costs related to medical examination in ethical issues.

The test takes into account 20 factors that define four levels of depression. There are ten positive and ten negative questions in the test. Each question is evaluated on a scale from 1 to 4 (based on these answers: "never", "sometimes", "often", "constantly"). The results are divided into four groups:

- 25-49 is normal
- 50-59 - mild depression
- 60-69 - moderate depression
- 70 or more severe depression.

Research results and discussion. The Tsung questionnaire was used to assess the psycho-emotional state of patients with irritable bowel syndrome. When summarizing survey data on the Tsung scale, 19% of patients with non-refractory IBS had no depression (less than 50 points), 28.7% had mild depression (50-59 points), and 52.3% had moderate depression (60-69 points) (table 1).

Table 1

Asian journal of Pharmaceutical and biological research 2231-2218
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Universal IMPACT factor 7
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MAY-AUG. 2023

The degree of development of depression in patients depending on the types of irritable bowel syndrome

Types of IBS	No depression			Mild depression			Moderate depression		
	n	(%)	grade M± m	n	(%)	grade M± m	n	(%)	grade M± m
IBSn-d n=21	4	19#	45.5±1.4	8	38.1*	53.5±0.6	9	42.9#	61.7±0.5
IBSn-c n=14	3	21.4#*	47.7±0.9	5	35.7	53.0±1.1	6	42.9#	62.1±0.7
IBSr-d n=28	4	14.3#	44.5±2.1	13	46.4#**	54.2±0.8	11	39.3#	62.5±0.5
IBSr-c n=19	5	26.3#**	47.4±0.7	6	31.6	53.6±0.8	8	42.1#**	63.9±0.8
Control group n=20	13	65	41.3±1.3	7	35	53.7±0.7	0	0	0

Explanation: IBSn-d - non-refractory IBS type with diarrhea; ITSn-c - non-refractory IBS type with constipation; IBSr-d - a type of refractory ITS with diarrhea; ITSr-c - refractory type of IBS with constipation; #-the difference between the indicators of the control group (p< 0.05); *-the difference between the indicators of the group of non-refractory patients (p< 0.05); **- difference between the indicators of the group of refractory patients (p < 0.05).

Depression was not observed in 19.2% of patients with refractory IBS (less than 50 points), mild depression (50-59 points) in 40.4% cases, moderate depression (60-69 points) in 40.4% cases.

In order to provide a more accurate assessment of the mental-emotional state of patients, the indicators in each subgroup were analyzed according to gender (table 2).

Table 2

Gender dependence of the development of depression in patients with irritable bowel syndrome

Types of IBS	Sex	No depression		Mild depression		Moderate depression	
		An. no	(%)	An. no	(%)	An. no	(%)
ITSn-d n=21	Male	2	9.5	4	19.1	5	23.8*
	Female	2	9.5	4	19.1*	4	19.0
ITSn-q n=14	Male	2	14.3*	4	28.6*	0	0
	Female	1	7.1	1	7.1	6	42.3*
ITSr-d n=28	Male	2	7.1	6	21.4**	7	25.0
	Female	2	7.1	7	25.0**	4	14.4

Asian journal of Pharmaceutical and biological research 2231-2218
http://www.ajpbr.org/
Universal IMPACT factor 7
SJIF 2022: 4.465
Volume 12 Issue 2
MAY-AUG. 2023

ITSr-q n=19	Male	1	5.3	2	10.5	6	31.6**
	Female	4	21.1**	4	21.1	2	10.5

Note: IBSn-d is a type of non-refractory IBS with diarrhea; ITSn-c - non-refractory IBS with constipation; IBSr-d - a type of refractory IBS with diarrhea; ITSr-c - refractory type of IBS with constipation; *- the difference between the indicators of the group of non-refractory patients ($p < 0.05$); **- difference between the indicators of the group of refractory patients ($p < 0.05$).

When psycho-emotional characteristics were studied by gender, it was observed that men with IBSn-c had a predominance of depression developed at a mild level (28.6%) compared to other subgroups, while in women, a moderate level of depression (42.3%) prevailed.

Quality of life indicators were analyzed using the MOS SF-36 questionnaire.

The physical component of health covers the following indicators:

- Participation Activity (RP)
- Physical activity (PF)
- Pain (P)
- General health (GH)

The mental component of health includes the following indicators:

- Vitality (VT)
- Social Activity (SF)
- Emotional Activity (RE)
- Mental Health (MH)

The results of the analysis of indicators of mental and physical components of health in groups of patients with ITS and healthy people are presented in table 3.

Table 3

Mental and physical components of quality of life in patients with irritable bowel syndrome, (M±m)

	Control group, n=20	ITS n=35	ITSr, n=47	p
The mental component of health (MH)	51.6±0.4	37.9±0.2**	38.7±0.8**	< 0.005
Physical component of health (PH)	54.1±0.3	44.3±0.7**	36.4±0.5**	< 0.005
The physical component of health				
Pain	92.9±0.3	64.3±0.3**	59.0±0.6**	< 0.005
General health	76.6±0.4	53.2±0.3**	50.0±0.4**	< 0.005
Participatory activities	66.4±0.6	53.7±0.2**	50.1±0.2**	< 0.005

Asian journal of Pharmaceutical and biological research 2231-2218
http://www.ajpbr.org/
Universal IMPACT factor 7
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Volume 12 Issue 2
MAY-AUG. 2023

Physical activity	81.4±0.5	83.2±0.3**	79.8±0.7	>0.05
The physical component of health				
Vitality	68.8±0.4	44.5±0.3**	40.7±0.9**	< 0.005
Mental health	69.2±0.3	48.2±0.2**	40.4±0.3**	< 0.005
Social activity	84.2±0.3	61.3±0.2**	58.3±0.5**	< 0.005
Emotional activity	81.7±0.5	53.3±0.2**	49.3±0.4**	< 0.005

Note: **-Difference between IBS and healthy individuals (p< 0.005)

As shown in table 3, mental and physical components of health of patients with ITS are statistically significantly reduced compared to healthy people, emotional and physical condition of patients limits their daily work and physical activity.

In the group of patients with IBSr, the pain index decreased statistically significantly ($p<0.005$), which affects the implementation of daily activities, including work at home and outside the home. In the group of patients with IBSr, the general health indicators are significantly lower ($p<0.005$), which reflects the low assessment of the patient's health status, as well as treatment prospects. In the group of refractory IBS, participation activity is significantly lower than in healthy people. Only the physical activity index did not show significant changes in both groups of patients and controls (p=>0.05).

From the data in Table 3, the analysis of the scales that make up the mental component of health shows that in patients with IBSr, compared to healthy people, the indicator of emotional functioning is significantly reduced ($p<0.005$), it is limitation in communication, difficulty in performing work or other activities, disturbed mental state causes a decrease in the volume or quality of the work performed.

The social activity index was found to be statically significantly lower in patients with refractory IBS compared to healthy patients, indicating that the physical or mental condition of IBS patients limits social activity (communication).

The vital activity (vitality) and mental health indicators in patients with IBSr are significantly lower than in the healthy group ($p<0.005$), which indicates that patients with IBS underestimate the vital activity, they often feel tired and exhausted, anxiety, compared to healthy people. and are more likely to have symptoms of depression, feelings of mental exhaustion, and an overwhelming sense of negative emotions.

An analysis of the mental and physical components of health among the types

Asian journal of Pharmaceutical and biological research 2231-2218
http://www.ajpbr.org/
Universal IMPACT factor 7
SJIF 2022: 4.465
Volume 12 Issue 2
MAY-AUG. 2023
of irritable bowel syndrome is presented in table 4.

Table 4

Analysis of mental and physical components of health among types of irritable bowel syndrome, (M±m)

	IBSn-d, n=21	IBSn-c, n=14	IBSr-d, n=28	IBSr-c, n=19	R
The mental component of health (M h)	37.9±0.3**	38.0±0.3**	34.9±0.4	44.3±0.5	** <0.005
Physical component of health (PH)	46.6±0.6**	40.8±0.7*	35.5±0.6	37.8±0.8	* <0.05

Note: IBSn-d is a type of non-refractory IBS with diarrhea; IBSn-c - non-refractory IBS with constipation; IBSr-d - a type of refractory IBS with diarrhea; IBSr-c - refractory type of IBS with constipation;* - p< 0.05; ** - p<0.005

A comparative analysis of the components of health in different clinical types of IBS (table 4) showed that mental (34.9±0.4, p<0.005) and physical (35.5±0.6, p<0.05) of health in IBSr-d component was found to be significantly lower compared to other subgroups.

Summary. Thus, it was found that the mild and moderate level of depression prevailed in the diarrhea-predominant bowel syndrome compared to the constipation-predominant type. Neither group was found to have the same level of severe depression. It can be seen that the increase in the number of bowel movements affects the psycho-emotional activity of patients and leads to the appearance of various levels of depression.

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