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Wpływ stanów emocjonalnych na relacje z rodziną u osób z nieswoistymi zapaleniami jelit

The impact of emotional states on relations with the family in people with inflammatory bowel disease

Streszczenie

Wstęp. Do nieswoistych zapaleń jelit należą dwie odmienne fenotypowo jednostki chorobowe tj. wrzodziejące zapalenie jelita grubego i choroba Leśniowskiego-Crohna. Jest to grupa schorzeń o charakterze przewlekłym, które jako proces rozlany obejmują najczęściej dystalne odcinki jelita grubego, a także jelito cienkie oraz inne obszary jelita grubego. Choroby te cechują się samoistnymi nawrotami i remisjami o nieznanej do końca etiologii.

Cel. Celem pracy było przedstawienie i opisanie wpływu stanów emocjonalnych na relacje z rodziną u osób z nieswoistymi zapaleniami jelit.

Materiał i metody. Badania zostały przeprowadzone w Oddziale Gastroenterologii Samodzielnego Publicznego Szpitala Klinicznego Nr 4 w Lublinie oraz w Oddziale Gastrologii Szpitala Wojewódzkiego im. Kardynała Stefana Wyszyńskiego w Lublinie w okresie od listopada 2009 do maja 2010 roku. W badaniach wzięło udział 98 chorych na chorobę Leśniowskiego-Crohna i na wrzodziejące zapalenie jelita grubego. W analizie statystycznej wykorzystano głównie weryfikacje hipotez statystycznych opartą o testy niezależności χ^2 Pearsona i analizę logistyczną.

Wyniki. Stwierdzono istotny związek pomiędzy występowaniem przygnębienia, lęku, poczucia beznadziejności, braku energii do życia, rozpaczy i stanów depresyjnych jako stanów emocjonalnych a rodzajem relacji z rodziną.

Wnioski. Analiza regresji logistycznej pozwoliła z wielu badanych cech wybrać dwie: osłabienie i relacje z rodziną, mające znaczący wpływ na występowanie przygnębienia. Nieswoiste zapalenia jelit, burzą dotychczasowy porządek życia i stawiają człowieka w obliczu przeżyć, których wcześniej nie doświadczał.

Abstract

Introduction. Inflammatory bowel disease is distinguished by two phenotypically distinct diseases: ulcerative colitis and Crohn's disease. This is a group of chronic diseases, which, as a diffuse process, influence the most distal colon and small intestines, as well as other areas of the colon. These diseases are characterized by spontaneous relapses and remissions of unknown etiology.

Aim. The aim of this study was to present and describe the impact of emotional states on family relationships in people with inflammatory bowel disease.

Material and methods. The study was conducted at the Department of Gastroenterology, The Autonomous Public Clinical Hospital No. 4 in Lublin and at the Department of Gastroenterology of Cardinal Stefan Wyszynski Provincial Specialist Hospital in Lublin, from November 2009 to May 2010. The study involved 98 patients with Crohn's disease and ulcerative colitis. Statistical analysis included primarily verification of statistical hypotheses based on independent tests of Pearson's χ^2 and logistic analysis.

Results. A significant relationship between the occurrence of depression, anxiety, hopelessness, lack of energy for life, despair and depression as an emotional state and the kind of relationship with the family was confirmed.

Conclusions. Logistic regression analysis allowed for choosing of two from among many features: asthenia, and relationships with family, having a significant impact on the occurrence of depression. Inflammatory bowel disease destroys the existing order of life and presents man with the feelings not previously experienced.

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INTRODUCTION

Inflammatory bowel disease (IBD) includes two phenotypically distinct diseases such as ulcerative colitis and Crohn's disease [1].

Inflammatory bowel disease (IBD) is a group of chronic diseases, which, as a diffuse process involve the most distal colon and small intestines, and other areas of the colon. These diseases are characterized by spontaneous relapses and remissions of unknown etiology [2,3]. The pathogenesis of these diseases involves factors such as infections, particularly bacterial, genetic predisposition, adverse environmental conditions, allergies, psychosomatic disorders, autoimmune disorders.

These diseases may occur at any stage of life, but the peak incidence is at 20-40 years of age. In their course similar symptoms develop, such as abdominal pain, diarrhea, bleeding, malabsorption [4]. In addition to significant manifestations, non-specific symptoms may include parenteral symptoms- arthritis, inflammation of the iris of the eye or of the skin, like pyoderma gangrenosum or erythema nodosum, and the primary fibrosing cholangitis [1].

Ulcerative colitis is a systemic disease, with inflammatory state, forming ulcers in the mucosa. The main symptom of disease is bloody diarrhea with symptoms from other organs. These are:
• Peripheral arthritis;
• Ankylosing spondylitis and inflammation of sacroiliac joints;
• Ocular symptoms – inflammation of the sclera, uveitis, iris, ciliary body;
• Cutaneous symptoms – erythema nodosum, lichen planus, aphthous mouth ulcers, gangrenous-suppurative inflammation of the skin;
• The symptoms of liver – hepatic steatosis, primary sclerosing cholangitis, nonspecific hepatitis;
• Inflammation of the heart (myocarditis);
• Nephrolithiasis;
• Hypercoagulable states [2,3].

Crohn's disease (Morbus Leśniowski Crohn, ileitis terminalis vel regionalis) is a segmental inflammation of all layers of the gastro-intestinal tract, from mouth to the anus, with the most common location in the terminal ileum and proximal colon. It is an incurable disease of unknown etiology [1].

Inflammatory bowel disease is a disease that accompanies the patient in a lifetime. It is merely characterized by the variability in the severity of somatic symptoms (exacerbations, remissions). Through a negative impact on the functioning of organs and systems, it results in emotional lability (impact on the central nervous system), affecting not only the physical but also psychological condition. Prolonged stress maintains the consistently high cortisol levels, resulting in lowered body resistance. Chronically ill patients are often influenced by various emotional reactions such as anxiety, depression, despair or joy. After the diagnosis of inflammatory bowel diseases, the life of a patient undergoes a substantial modification with regard to activities and professional life. This causes changes in the limbic system, which manifests itself in large fluctuations in mood, feelings of confusion and helplessness. With the progress of the disease, fatigue, exhaustion and depression occur. Adverse life events, depression, or others, not only worsen the clinical signs of inflammatory bowel disease, but also increase the probability of their incidence. In the treatment of the disease, the personality factors of the patient play a very important role, as do the reflection of the disease and ways to cope with difficult situations [5]. In these situations emotional support, presence of friendly people in difficult situations, communicating of acceptance, sympathy and kindness, showing care, trust, caring, empathy, a diversion from the difficult experiences and maintaining a good mood of the patients, are very important. All of this influence the patient's self-esteem and a sense of hope [6].

AIM

Due to the gravity and the prevalence of the problem of inflammatory bowel disease, it seemed to be very interesting to analyze the influence of emotional states on family relationships in people with bowel diseases. This study was to present and describe the impact of emotional states on relationships with family.

MATERIAL AND METHODS

The research comprised 98 patients with Crohn's disease and ulcerative colitis. In the subgroup of patients with Crohn's disease there were 44 people, including 18 men, which accounted for 40.91% of respondents suffering from the disease and 26 women, representing 59.09% of patients suffering with the disease. Fifty four people were the patients with ulcerative colitis – 27 men, which accounted for 50.00% of the respondents and 27 women, representing 50.00% of patients with the disease.

The study was conducted at the Department of Gastroenterology, at Independent Public Clinical Hospital No. 4 in Lublin and at the Department of Gastroenterology of the Cardinal Stefan Wyszynski Regional Hospital during the period from November 2009 to May 2010. The study was conducted with the approval of heads of clinics and head nurses. The research results are based on a questionnaire. After expressing the patient's verbal consent for participation, 110 questionnaires were distributed, but 98 were returned with answers to all the questions. The basic criterion for accepting or rejecting the participation in the survey was the occurrence of inflammatory bowel disease in the subjects. The majority of respondents reported no problems with understanding and answering the questions posed in the survey.

Statistical analysis used: verification of statistical hypotheses based on χ^2 Pearson tests of independence, Chi-squared test corrected by Yates, (low number subgroups), V-squared test. In addition, logistic analysis was performed. The significance of differences between test results was found at $p<0.05$. Development of test results was performed using the program "STATISTICA 9.0" [7,8].

RESULTS

Statistical analysis allowed for establishing the following relationships between the occurrence of the following emotional states and relations with the family.

A significant relationship between the occurrence of depression, as an emotional state and relationship with the family, was confirmed (p=0.0476) (Table 1).

TABLE 1. The occurrence of depression as an emotional state and relationship with the family.

| Depression | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absence	46	20	22	4	Chi-square (df=1): 3.92
	46.94%	43.48%	47.83%	8.70%	
Presence	52	33	14	5	
	53.06%	63.46%	26.92%	9.62%	
Total	98	53	36	9	p=0.0476 a)
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of respondents (about 54%), were the respondents declaring very good relationships with family, slightly smaller group – approximately 37% – having good relationships with family, about 9% – bad relations with family. The majority of respondents, about 60%, declared the presence of depression; they were people declaring relations with the family at very good level (Table 1).

A significant relationship between the occurrence of anxiety, the emotional state and relationship with the family, was confirmed (p=0.046) (Table 2).

TABLE 2. The presence of anxiety as emotional state and relationship with the family.

| Anxiety | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absence	71	34	30	7	Chi-square (df=1): 3.98
	72.45%	47.89%	42.25%	9.86%	
Presence	27	19	6	2	
	27.55%	70.37%	22.22%	7.41%	
Total	98	53	36	9	p=0.046 a)
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of respondents (about 54%), included respondents declaring very good relationships with their family; slightly smaller group, approximately 37%, was declaring good relationships with their family and about 9% reported bad relations with their family. Among all respondents, the anxiety was present most frequently, in about 70%, in the subjects reporting a very good relationship with their families. People who didn't experience anxiety reported very good relationships with their family in approximately 50% (Table 2).

A significant relationship was stated between the feeling of hopelessness, as the emotional state, and the type of relationship with family (p=0.0476) (Table 3).

TABLE 3. The presence of hopelessness as the emotional state and the relationships with family.

| Feeling of hopelessness | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	BAd	
Absence	71	34	31	6	Chi-square (df=1) 3.92
	72.45%	47.89%	43.66%	8.45%	
Presence	27	19	5	3	
	27.55%	70.37%	18.52%	11.11%	p=0.0476 a)
Total	98	53	36	9	
	100.0%	54.08%	37.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

Among all subjects the presence of hopelessness, as the emotional state of patients with inflammatory bowel diseases, mainly affected very good relationships with family, in about 70% (Table 3).

A significant relationship was confirmed between the occurrence of lack of energy for life, as emotional state and the relationship with family (p=0.0129) (Table 4).

TABLE 4. The lack of energy for life as an emotional state and relationship with the family.

| Lack of energy for life | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	52	22	24	6	Chi-square (df=1): 6.18
	53.06%	42.31%	46.15%	11.54%	
Present	46	31	12	3	
	46.94%	67.39%	26.09%	6.52%	
Total	98	53	36	9	p=0.0129 a)
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The majority of respondents, over 50% said that they did not experience the lack of energy for life. In patients in whom this emotional state occurred, in large part, in about 70%, the relationships with the family were very good (Table 4).

There was no significant relation between the occurrence of increased irritability, as the emotional state and the type of relationship with the family (p=0.0792) (Table 5).

TABLE 5. The occurrence of intensified irritability as the emotional state and the relationships with family.

| Increased irritability | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	56	26	23	7	Chi-square (df=1): 3.08
	57.14%	46.43%	41.07%	12.50%	
Present	42	27	13	2	
	42.86%	64.29%	30.95%	4.76%	
Total	98	53	36	9	p=0.0792 a)
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of patients with inflammatory bowel disease, about 60%, reported that increased irritability, as the emotional state, did not occur. In the patients, in whom the condition was present, in the vast part the relationships with the family were at a very good level, over 60% (Table 5).

A significant relationship was confirmed between the occurrence of despair and depression as the emotional states, and the type of relationships with family (p=0.0064) (Table 6).

TABLE 6.

| Despair and depression | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	72	33	34	5	
	73.47%	45.83%	47.22%	6.94%	Chi-square (df=1): 7.43
Present	26	20	2	4	
	26.53%	76.92%	7.69%	15.38%	
Total	98	53	36	9	p=0.0064 [a]
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of respondents, about 70%, reported that the despair and depression did not occur in them. Among respondents who had experienced this emotional state, in about 30%, the relationships with the family were at a very good level, about 80% (Table 6).

There was no significant relationship between the occurrence of life satisfaction as the emotional state and relationship with the family (p=0.538) (Table 7).

TABLE 7. Satisfaction of life as the emotional state and the relationships with family.

| Satisfaction of life | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	85	47	30	8	
	86.73%	55.29%	35.29%	9.41%	Chi-square (df=1): 0.38
Present	13	6	6	1	
	13.27%	46.15%	46.15%	7.69%	
Total	98	53	36	9	p=0.538 [a]
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest part of respondents, about 90%, reported that satisfaction of life was not present in them. In these patients, in whom the emotional state was present, often relationships with the family were very good or good (Table 7).

There was no significant relationship between the occurrence of optimism, as the emotional state and relationship with the family (p=0.5026) (Table 8).

TABLE 8. Optimism as the emotional state and the relationships with family.

| Optimism | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	77	43	27	7	
	78.57%	55.84%	35.06%	9.09%	Chi-square (df=1): 0.45
Present	21	10	9	2	
	21.43%	47.62%	42.86%	9.52%	
Total	98	53	36	9	p=0.5026 [a]
	100.0%	54.08%	36.73%	9.18%	

Among the patients, about 80% said that optimism did not occur in them. Those who experienced optimism often had very good relationships with family, about 50% (Table 8).

There was no significant relationship between the occurrence of joy, as the emotional state and relationship with the family (p=0.5406, Table 9).

TABLE 9. Joy as the emotional state and the relationships with family

| Joy | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	90	50	33	7	
	91.84%	55.56%	36.67%	7.78%	Chi-square corrected byYates: 0.37, df=1
Present	8	3	3	2	
	8.16%	37.50%	37.50%	25.00%	
Total	98	53	36	9	p=0.5406 [a]
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of respondents, about 90%, felt no joy. Among patients with inflammatory bowel disease, in which the emotional state occurred the family relationships were mostly very good or good (Table 9).

There was no significant relationship between the occurrence of self-esteem, as the emotional state and relationship with the family (p=0.0596, Table 10).

TABLE 10. The occurrence of self-esteem as an emotional state and relationship with the family.

| Self-esteem | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	87	50	29	8	
	88.78%	57.47%	33.33%	9.20%	V-square (df=1): 3.55
Present	11	3	7	1	
	11.22%	27.27%	63.64%	9.09%	
Total	98	53	36	9	p=0.0596 [a]
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

A significant part of patients, about 90%, declared that self-esteem, as the emotional state did not occur in them. In those in whom the condition was present, it mainly affected the relationship with the family at a good level, about 60% (Table 10).

There was no significant relationship between the occurrence of openness, as the emotional state and relationship with the family (p=0.089) (Table 11).

TABLE 11. The occurrence of openness as the emotional state and a relationship with the family.

| Openness | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	80	40	32	8	V-square (df=1): 2.89
	81.63%	50.00%	40.00%	10.00%	
Present	18	13	4	1	
	18.37%	72.22%	22.22%	5.56%	p=0.089 a)
Total	98	53	36	9	
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group among all respondents, over 80%, said that openness, as the emotional state did not occur. Those who experienced this emotional state, about 20%, mainly identified their relationships with family at a very good level (more than 70%) (Table 11).

There was no significant relationship between the occurrence of gaiety, as the emotional state and relationship with the family (p=0.2273) (Table 12).

A significant part of patients, over 80%, reported no cheerfulness. Among all patients with inflammatory bowel disease, cheerfulness, as the emotional state occurred in about 13%. In these patients, relationships with family, were mainly good, at approximately 50% (Table 12).

TABLE 12. The occurrence of cheerfulness as the emotional state and relationship with the family.

| Gaiety | Number and % of subjects | Relationships with family | | | Pearson Chi^2: |
		Very good	Good	Bad	
Absent	85	48	29	8	V-square (df=1): 1.46
	86.73%	56.47%	34.12%	9.41%	
Present	13	5	7	1	
	13.27%	38.46%	53.85%	7.69%	p=0.2273 a)
Total	98	53	36	9	
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

There was no significant relationship between the occurrence of serenity, as emotional state and relationship with the family (p=0.2710) (Table 13).

TABLE 13. The occurrence of serenity as emotional state and relationship with the family.

| Serenity | Number and % of subjects | Relationships with family | | | Pearson Chi^2 |
		Very good	Good	Bad	
Absent	88	49	32	7	
	89.80%	55.68%	36.36%	7.95%	
Present	10	4	4	2	Fisher's exact test. p=0.2710 a)
	10.20%	40.00%	40.00%	20.00%	
Total	98	53	36	9	
	100.0%	54.08%	36.73%	9.18%	

a) due to the small number of observations of the bad relationships with the family, the calculation of "Chi-square" relationship with the family included: "very good", "other".

The largest group of respondents, about 90%, reported that serenity, as the emotional state did not occur. Subjects, in whom this condition appeared, about 10%, mainly defined their relationships with the family at a very good or good level (Table 13).

A significant simultaneous effect of two features: the weakness and the relationships with family on the occurrence of depression was confirmed (Chi2 (2)=10.353, p=0.00565) (Table 14).

TABLE 14. Results sheet for the applied logistic regression model.

| Dependent variable: depression | Model: Logistic regression | | |
	Constant B0	Weakness	Relations with family
Evaluation	1.326199	0.2257974	-1.068474
Standard error	0.6577812	0.09490076	0.4432
t(96)	2.01617	2.3793	-2.410817
p	0.04657641	0.01932347	0.01782033
-95%CL	0.02051329	0.03742087	-1.948219
+95%CL	2.631884	0.4141739	-0.188729
Wald's Chi-square	4.064941	5.661069	5.812038
p	0.04379055	0.01735137	0.01592244
Odds ratio (unit ch).	3.766698	1.253322	0.3435323
-95%CL	1.020725	1.03813	0.1425277
+95%CL	13.89994	1.51312	0.8280109
Odds ratio (range)		3.092522	0.3435323
-95%CL		1.205753	0.1425277
+95%CL		7.931717	0.8280109

Logistic regression analysis allowed for choosing two features from among many: asthenia and relationships with family, having most impact on the occurrence of depression. The simultaneous inclusion of these characteristics as well as other not presented above leads to the conclusion, based on those values in Table 14, for example, Wald's Chi-square for weakness having the value of respectively: 5.661 at p=0.017 and 5.812 for family relationships, with p=0.0159, proving that the relationship between these features is large. The odds ratio for change equal to the range of values of the analyzed variables listed above is respectively – equal to more than 3 for the weakness and – 0.34 for the variable "relationships with family", which suggests multiple changes of the incidence of the depression.

DISCUSSION

Statistical analysis of the results showed significant relationship between family relationships and the occurrence of the following emotional states: depression, anxiety, hopelessness, lack of energy for life, despair and depression. No significant effect of family relationship on the occurrence of: increased irritability, life satisfaction, optimism, joy, self-esteem, openness, cheerfulness, serenity, was confirmed.

The reports of the literature imply that clinical trials and experimental studies on animal models have shown that adverse life events, stress and depression increase the likelihood of clinical signs of IBD. Stress being one of the factors of the environment poses a threat to the biological balance of the body, and is also associated with increased inflammation in the intestine.

Any disease, especially the chronic one, like inflammatory bowel disease, destroys the previous order of life, sets new tasks and goals, putting a man in the face of experience, not previously experienced. The intensity of these emotional states depends on individual factors, earlier experience and skills of reacting to emotional tension that will allow for adequate adjustment to adverse changes in life caused by the disease. Anxiety is a common emotional state accompanying the patients. Not infrequently, it is sometimes a component of other experiences, such as depression, various forms of aggression, happiness, doubt, or dysphoria. It was noted that anxiety is associated in many people with a fear of ill-health, the development of many painful experiences, which mostly forces them to frequent visits to the doctor and the excessive control of the treatment process. The reduced activity of life caused by the disease, often the need to change the work or its cessation, will lead to a deep depression, pessimistic thoughts, and loss of interest in what formerly was a pleasure. With the disease progresses, patients report feeling great fatigue and exhaustion, generating further depression. Both the feeling of hopelessness and withdrawal reactions may affect the poorer prognosis of the disease, increasing the frequency of exacerbations and different degrees of relationship with the family [9]. Inflammatory bowel diseases require long-term treatment, psychological support, patient education and cooperation of many specialists [10,11].

CONCLUSIONS

The intensity of the emotional state of depression which is present in more than half of patients with inflammatory bowel disease can be improved by improving the relationship with the family.

Inflammatory bowel disease destroys the existing order of life and quite often places man in the face of experiences, like the feeling of anxiety. Anxiety is associated in many people with a fear of ill-health. Statistical analysis of the research confirmed significant association between family relationships and the occurrence of anxiety.

Over a quarter of patients with inflammatory bowel disease have a sense of hopelessness that can be changed with good relations with the family.

About half of patients with inflammatory bowel disease are patients with a lack of energy for life, significantly poorer relationships with family.

The result of the lack of adaptation to negative life changes caused by disease, which the patient had not experienced before is also quite often despair and depression - also related closely with the relationship with family.

Logistic regression analysis allowed for choosing two features most relevant to the development of depression: the weakness and relationships with family.

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