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Gender Related Differences in Quality of Life and Affective Status in Patients with Inflammatory Bowel Disease

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A B S T R A C T

According to the literature, quality of life has been shown to be reduced in females compared with males with Inflamatory Bowel Disease (IBD). Psychosocial factors are also playing an important role in IBD, especially emotional lability. The aims of study was to investigate the sex differences in general and specific health-related quality of life (HRQoL), anxiety and depression in IBD patients. Hundred and twelve outpatients of the Gastroenterology Division, Clinical Hospital Centre Rijeka, were enrolled in our study and divided in two groups: 50 females (31 with ulcerative colitis,UC and 19 with Crohn disease, CD) and 62 males (30 with UC and 32 with CD), age range 19 to 74 (M=41.46; SD=13.06). Most patients have been in long clinical remission or with mild disease acording to Clinical Disease Activity Index (CDAI) score for CD and Clinical Activity Index (CAI) score for UC. There were significant differences in physical (F=13.96, p<.0001) and mental (F=9.44, p<.001) component of the general HRQoL, emotional domain ((F=9.26, p<.001) and bowel symptoms (F=7.04, p<.001) of the Inflamatory Bowel Disease Quality of life (IBDQoL), as well as, in anxiety (F=7.03, p<.001) and depression (F=12.09, p<.0001) between men and women with IBD. Women have expressed significantly lower level of the general HRQoL and more emotional disturbances connected with their disease as well as more frequent bowel symptoms compared with men. Effect sizes of those differences were large. Results of this study confirm that women with IBD are more prone to the negative impact of the disease on their HRQoL than men. Women with higher level of depression and anxiety experienced more emotional disturbances, bowel and systemic symptoms and lower general HRQoL. These results should deserve more considerations in the clinical treatment of IBD patients.

Key words: *quality of life, inflammatory bowel disease, gender*

Introduction

Inflammatory Bowel Disease (IBD) is chronic inflammatory disorder characterized by tendency for chronic or relapsing immune activation and inflammation within the gastrointestinal tract. Patients with IBD suffer chronically from diarrhea, abdominal pain, gastrointestinal bleeding, malabsorption, weight loss and require continuous medical and surgical attention. Crohn's disease (CD) and ulcerative colitis (UC) are the most important phenotypes of IBD. Usually IBD follows a course of exacerbations and remissions. The course of disease is unpredictable so the treatment must focus on prevention of complications, induction and maintenance of remission, improvement and preservation of quality of life[1]. Information on the impact of these chronic diseases on quality of life can make health services more patient-centered.

Many symptoms, complications and consequences of IBD are likely to impact on body image, intimacy and sexual function[2]. Fatigues, abdominal cramps, frequent stools, raised body temperature are typical exacerbation signs. They can be further aggravated by features of incontinence and bad odors. Individuals with IBD are faced with specific psychological issues in addition to the difficulties of living with a chronic disease. They represent a heterogeneous group, making generalizations about quality of life difficult. However, sociodemographic factors (age, socioeconomic status and gender) do appear influence the perception of quality of life in these patients.

Age distribution of CD and UC points to a peak incidence between the ages of 15 to 30 years. A second, smaller, peak occurs between the ages of 60 to 80 years.

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It has been known that lower socioeconomic status as well as lower educational level was connected with higher morbidity and lower quality of life, often due to factors not directly linked to the disease itself[3].

There has been increasing interest in studying gender differences in IBD to learn more about disease pathogenesis and to discover more effective treatment. In contrast to some other bowel diseases (e.g. irritable bowel syndrome) there are no significant gender differences in IBD occurrence although male-female ratio for those with Crohn's disease range from 1:1.8[4] to even 1:2 but the overall female incidence rate appears to be about 1,5 times higher than in men[5]. Still it is already known that females and males with IBD can differ in some psychosocial aspects[6,7] of disease and that psychological morbidity in particular has a contributory role, most notably in females[3]. We can suppose that gender has a significant influence on a number of illness concerns, particulary those related to self-image and relationship, as Maunder et al. confirmed[8]. According to the literature, quality of life (QoL) has been shown to be reduced in females compared with males with IBD in most studies[3].

Furthermore, psychosocial factors in general are also playing an important role in IBD[9], especially emotional lability (e.g. anxiety and depression). Mittermaier et al.[1] found that depressive mood associated with anxiety and lower HRQoL may be a risk factor for early clinical recurrence and more active disease. Generally, women are significantly more likely to suffer from affective disorders, e.g. depressive and anxiety disorders, than men[10]. Clinically it can be easily appreciated that the concerns of men and women with IBD may differ and that these differences may have a substantial impact on coping strategies and treatment decisions[8]. Major concerns among woman are impact of chronic therapy and potential surgery on body image, sexual and reproductive function. Also, women may find forming new relationships challenging and may be fearful of rejection[11]. In male patients with IBD there is some evidence for persisting problems with sexual dysfunction as long as disease activity and psychosocial maladaptation are under control[12]. Therefore, differences in response to the disease, partly influenced by societal expectations and responses to ideals of attractiveness, can alter the quality of life among women but not men with IBD.

The aim of this study is to investigate the gender differences in general and disease-specific HRQoL, anxiety and depression in IBD patients.

Materials and Methods

Between October 2007 and May 2009 in the setting of the University Gastroenterology Clinic, from outpatients register at our Division, 112 patients with already established diagnosis of UC or CD and with different degree of the disease activity were included in the study. There were 50 females (31 with UC and 19 with CD) and 62 males (30 with UC and 32 with CD), age range 19 to 74 (M=41.46; SD=13.06). For IBD patient's diagnosis had been established based on conventional criteria of disease. Exclusion criteria were presence of severe somatic disorder (severe chronic gastrointestinal disease other than IBS or IBD), current malignant disease, or severe psychiatric disorder (psychosis).

After identification of eligible patients, we offered them to participate in the study. Patients were informed about the aims of the study. Psychological assessment was done in smaller groups of maximum 10 persons at the Gastroenterology Clinic. All patients signed the informed consent and fulfilled questionnaires in the presence of our collaborative psychologists who gave them instructions.

The study was approved by Ethical Committees of Medical Faculty and Faculty of Social Sciences and Humanities, University of Rijeka. All study procedures were in agreement with Helsinki Declaration.

Questionnaires

- The Medical Outcome Study Short-Form 36 (SF-36) is a reliable and valid instrument to measure all domains of the health status[13]. It looks at 4 domains in the area of physical health (physical functioning, role limitation – physical, bodily pain and general health) and 4 domains in the area of mental health (role limitation – emotional, vitality, mental health and social functioning). Two comprehensive indexes of HRQoL can also be computed (physical component summary and mental component summary). Cronbach alpha is 0.90 and 0.85, respectively. The responses to the questions in each domain are added to provide eight scores between 0 and 100 with higher scores reflecting better HRQoL.
- Inflammatory Bowel Disease Questionnaire (IBDQ) is a 32-item, disease-specific health related quality of life (HRQoL) questionnaire. It consits of 4 domains – emotional function (12 items, e.g. »*How often during the last two weeks have you felt frustrated, impatient, or restless*«), bowel symptoms (10 items, e.g. »*How often during the last two weeks have you been troubled by pain in abdomen*«), social function (5 items, e.g. »*How often during the last two weeks have you had to avoid attending events where there was no washroom close at hand*«) and systemic symptoms (5 items, e.g. »*How much energy have you had during the last two weeks*«) on 6-point Likert scale. The total score may range from 32 to 192 with a lower score indicating better HRQOL. The IBDQ has been translated, adapted and validated for Croatian language. The internal consistency of the subscales of the IBDQ were Cronbach alpha between 72 to 88.
- Spielberger´s Trait Anxiety Inventory (STAI)[14] was used to measure anxiety as a personality trait – a stable dimension of personality. It consists of 20 items on 5-point Likert scale. The total score may range from 0 to 80 with higher score indicating higher level of anxiety. Cronbach alpha is 0.90.
- Beck Depression Inventory (BDI)[15] was derived from observing and summarizing the typical attitudes and

symptoms presented by depressed psychiatric patients, and to reflect Beck's cognitive views on depression. A total number of 21 symptoms were included; participants were requested to rate the intensity of these symptoms on a scale from 0 to 3. Typical questions relate to such areas as sense of failure, guilt feelings, irritability, sleep disturbance, and loss of appetite. Depression was assumed when the BDI score was 13 points or higher. Cronbach alpha is 0.83.

- Medical Questionnaire regarding the history IBD, medication, other diseases.
- Sociodemographic Questionnaire including standard demographic questions on gender, age, marital status and present occupational status.

Statistical analyses

Differences between groups were investigated by analysis of variance (ANOVA). Group categories were used as independent and psychosocial measures as dependent variables. Statistical analysis was performed using SPSS version 16 statistical package (SPSS Inc., Chicago, IL).

Results

To investigate sex differences in general and disease-specific HRQoL and affective status one-way analyses of variance were conducted. There were significant differences in physical and mental component of the general HRQoL, emotional domain and bowel symptoms of the disease-specific HRQoL, anxiety and depression between men and women with inflammatory bowel disease (Table 1).

Women have expressed significantly lower level of the general HRQoL and more emotional disturbances connected with their disease as well as more frequent bowel symptoms compared with men. Furthermore, women expressed significantly higher level of anxiety and depression comparing with men with IBD. Effect sizes of those differences were large. Anxiety and depression were significantly correlated with physical and mental component of the general HRQoL as well as with all domains of disease-specific HRQoL. These results mean that person with higher level of anxiety and depression expresses lower general as well as disease-specific HRQoL (Table 2)

TABLE 2
CORRELATIONS AMONG ANXIETY AND DEPRESSION AND ASPECTS OF GENERAL AND DISEASE-SPECIFIC QUALITY OF LIFE

Variables	Anxiety	Depression
IBDQ emotional	0.68**	0.72**
IBDQ bowel	0.37**	0.50**
IBDQ social	0.42**	0.65**
IBDQ systemic	0.43**	0.60**
Physical component of HRQoL	–0.38**	–0.54**
Mental component of HRQoL	–0.61**	–0.71**

**p < 0.001; IBDQ – Inflammatory Bowel disease Questionnaire, HRQoL – Health Related Quality of Life

TABLE 1
SEX DIFFERENCES IN HEALTH-REALTED QUALITY OF LIFE MEAUSRES AND AFFECTIVE STATUS

Variables	Sex	M	SD	df	F	Effect size (observed power)
Physical component	Men	67.18	20.22	1, 106	13.96***	0.96
	Women	51.69	22.82			
Mental component	Men	65.18	21.15	1, 107	9.44**	0.86
	Women	51.81	24.29			
Emotional IBDQ	Men	31.94	8.29	1, 109	9.26**	0.85
	Women	37.35	10.44			
Bowel IBDQ	Men	26.21	7.30	1, 109	7.04**	0.75
	Women	30.55	9.93			
Social IBDQ	Men	11.76	5.39	1, 107	2.53	0.35
	Women	13.55	6.38			
Systemic IBDQ	Men	15.32	5.74	1, 109	1.78	0.26
	Women	16.76	5.43			
Anxiety	Men	30.42	10.40	1, 110	7.03**	0.75
	Women	36.54	14.00			
Depression	Men	7.85	6.18	1, 110	12.09***	0.93
	Women	12.52	8.02			

***p<.0001
**p<.001; IBDQ – Inflammatory Bowel disease Questionnaire

Discussion

Results of our study are in accordance with literature data that quality of life is reduced in females compared with males with IBD[3]. One possible explanation of these results could be the fact that women have also expressed significantly higher level of depression and anxiety comparing to men. Also, illness can have important influence on social functioning that may be perceived differently by women and men. Women with IBD reported greater concern over feelings about their bodies, their attractiveness, feeling alone and having children but top three concerns of both men and women are energy level, medication effect and uncertainty of the disease[8].

Our results confirm that women with IBD are more prone to the negative impact of the disease on their HRQoL than men. They rated their symptoms as being more severe and had more disease-related concern. These results should deserve more consideration in the clinical treatment of IBD patients.

Correlation of depression and anxiety with physical and mental components of the general HRQoL and all domains of disease specific HRQoL suggested that patients with higher level of depression and anxiety experienced more emotional disturbances, bowel and systemic symptoms, more disturbed social function and lower general HRQoL. Of course, this correlation could be that the CD and UC may lead to physical symptoms similar to the signs of depression (eg, fatigue, changes in sleep patterns, low appetite, loss of weight and libido) and anxiety (feeling of wariness, concerns, fears, and tension). Subsequently, significantly more women than men had depressive symptoms with score of 18 or above which reflects clinically relevant depression. Generally, psychological factors play an important role in some females, with great disease-related concerns and more extensive disease may be commoner in females[3]. It is interesting that even in the general population, self-related quality of life scores tend to be lower in females than in males. Precisely, altered symptom perception in women with IBD, due to marked level of anxiety and depression, could contribute to lower HRQoL and unfavourable disease outcomes.

We can conclude that gender differences are important to the experience of disease and must be considered in everyday care for the IBD patients. It implicates individual approach to the patients in order to achieve clinician-patient partnership.

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SPOLNO OVISNE RAZLIKE U KVALITETI ŽIVOTA I AFEKTIVNOM STATUSU KOD BOLESNIKA S UPALNIM BOLESTIMA CRIJEVA

SAŽETAK

Prema dostupnoj literaturi kvaliteta života kod žena oboljelih od upalnih bolesti crijeva (IBD, prema engl. Inflammatory Bowel Disease) niža je nego kod muškaraca. Također, psihosocijalni faktori imaju značajnu ulogu, poglavito emocionalna labilnost. Cilj ovog istraživanja je ispitati postojanje spolnih razlika u općoj i kvaliteti života povezanoj sa zdravljem, anksioznosti i depresivnosti u bolesnika s IBD. Stotinu i dvanaest poliklinič kih bolesnika na Zavodu za

gastroenterologiju KBC-a Rijeka uključeno je u studiju. Ukupno je bilo 50 žena (31 s ulceroznim kolitisom, UC, i 19 s Crohnovom bolešću, CD) i 62 muškarca (30 s UC i 32 s CD). Raspon dobi je 19 do 74 godina (M=41,46; SD=13,06). Većina je bolesnika u stabilnoj remisiji ili blago aktivnoj bolesti prema Clinical Disease Activity Indeksu za CD (CDAI) i Clinical Activity Indeksu za UC (CAI UC). Nađena je značajna razlika u fizičkoj (F=13,96, p<,0001) i mentalnoj (F= 9,44, p<,001) komponenti opće kvalitete života, emocionalnoj domeni (F=9,26, p<,001) i crijevnim simptomima (F=7,04, p<,001) kvalitete života povezane sa zdravljem, a također i u anksioznosti (F=7,03, p<,001) i depresiji (F=12,09, p< ,0001) između muškaraca i žena s IBD. Žene imaju značajno nižu razinu opće kvalitete života i više emocionalnih poremećaja povezanih s njihovom bolešću. Također češće navode crijevne simptome nego muškarci. Veličina efekta uočenih razlika je velika. Rezultati ovog ispitivanja potvrđuju da su žene s IBD sklonije negativnom učinku bolesti na kvalitetu života povezanu sa dravljem nego muškarci. Žene s višim stupnjem depresije i anksioznosti imaju više emocionalnih problema, crijevnih i sistemskih simptoma i nižu opću kvalitetu života. Ovi rezultati zaslužuju više pozornosti u kliničkom tretmanu bolesnika s IBD.