

ORIGINAL ARTICLE

Prevalence of anxious and depressive symptoms, and coping strategies as risk factors in Crohn's disease outpatients in clinical remission

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Submitted: 2016-10-25 Accepted: 2016-12-05 Published online: 2016-12-28

Key words: Crohn's disease; coping; anxiety; depression; clinical remission; risk factors

Act Nerv Super Rediviva 2016; 58(4): 118–122 ANSR580416A05

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Abstract

OBJECTIVE: This study aimed to assess the prevalence of depressive and anxious comorbidity in Crohn's disease (CD) patients in clinical remission; secondary aim is to define coping strategies in those with clinical symptoms; and to define predictive risk factors for developing symptomatology.

DESIGN: 123 outpatients were screened with Hospital Anxiety and Depression Scale and Brief-COPE. The patients positive for depressive symptoms were investigated by questionnaire D of Cognitive Behavioural Assessment 2.0 and Beck Depression Inventory, whereas those with anxious symptoms by Perceived Stress Scale and State-Trait Anxiety Scale.

RESULTS: 45 patients (36%) showed anxious and/or depressive symptoms. The group positive for anxiety showed significant lower values of "Positive reframing", "Self distraction", "Denial" in coping strategies, the one positive for depression showed significant lower values for "Denial".

Female sex, higher age of onset, late age of onset, no family history of IBD, colic or perianal localization of Crohn's disease are risk factors for high levels of depression or anxiety.

CONCLUSION: Crohn's disease patients in clinical remission have great risk to develop depressive-anxious comorbidity; those with psychiatric symptoms use dysfunctional coping strategies that could influence the course of the disease. Some specific CD patients need to be strictly controlled because at risk to develop psychiatric symptoms.

INTRODUCTION

Inflammatory bowel disease (IBD) is a chronic disease with a changeable course with exacerbation and remission. Crohn's disease (CD) is one of the clinical subtypes in which transmural inflammation may involve any part of the digestive tract from mouth to anus (Mekhjian *et al* 1979). The symptoms, includ-

ing diarrhea, abdominal pain, rectal bleeding, fatigue, growth failure, and postponed puberty, present unique psychosocial challenges for the sufferers (Jelenova *et al* 2016).

The incidence of CD has increased in North America (20.2 per 100,000 per person years), otherwise the prevalence is highest in Europe (322 per 100,000 per person years) (Ponder & Long 2013).

The aetiology is actually unknown, the complications are various and often severe, including frequent hospitalization and surgery (Marrero *et al* 2008). Nevertheless, patients with CD frequently develop psychiatric comorbidity such as depression or anxiety. (Katon & Ciechanowski 2002; Katon 2011). The prevalence of mood and anxiety disorders in patients with IBD has been reported to be as high as 80% and 60% during relapses and approximately 30% during remission state (Graff *et al* 2009; Loftus *et al* 2011; Nahon S *et al* 2012). It is well known how depression and anxiety have a deep impact on quality of life (QoL) (Walker *et al* 2008; Jelnova *et al* 2016). The QoL provides important insights into the impact of CD and has an important role to play in understanding the true impact of the disease upon patients' lives and lifestyles (Caprilli *et al* 2006; Besharat *et al* 2012; Gazzard 1987). Coping styles that patients employ are associated with QoL (Faust *et al* 2012). Previous studies identified maladaptive coping strategies as important factors maintaining emotional distress, impaired quality of life and contributing to CD activity (Larsson *et al* 2008).

The aim of the present study was a) to assess prevalence of depressive and anxious symptoms in cohort of CD outpatients in clinical remission; b) to evaluate coping strategies in patients with CD in clinical remission and comorbidity with depression or anxiety; and c) to identify predictive risk factor for developing psychiatric symptoms in patients with CD in clinical remission.

MATERIAL AND METHODS

Participants

This prospective study included 123 consecutive patients – mean age 44.39 (± 11.3) – with endoscopic and histological diagnosis of CD leading to IBD Unit of “Luigi Sacco” University Hospital, Milan. The participants provided informed consent to participate in this study by signing a consent form following reading the information sheet provided for them.

Inclusion criteria

All patients with clinical remission (Crohn's Disease Activity Index, CDAI <150), age between 18–65 years old, without previous psychiatric diagnosis or significant comorbidity (substance-alcohol abuse, cognitive impairment, pregnancy) were enlisted.

Hospital Anxiety and Depression Scale

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith 1983) contains 14 items (7 for anxiety and 7 for depression) that relate to the last week. There are 7 questions each for anxiety and depression, each question is scored from 0 to 3 depending on the severity of the symptom; the maximum score is 21 for each of the scales. Respondents can be classified into four categories: 0–7 normal; 8–10 mild; 11–14 moderate; and

15–21 severe (so cut off is ≥ 11). The test-retest reliability and validity are both strong (Snaith & Zigmond 1994). A study confirmed that HADS has good psychometric properties in an Italian community sample (Iani *et al* 2014).

The Brief – COPE

The Brief – COPE (Carver 1997) is an abbreviated version of COPE created by the same author. It has composed of 28 items articulated in 14 subscales of 2 items each one. The items are assessed according to a 4 point scale from 1 (I usually do not do this at all) to 4 (I usually do this a lot). The patients have to answer how many times it takes to implement the proposed behaviour before a stressing situation.

The Cognitive Behavioural Assessment

The Cognitive Behavioural Assessment 2.0 (CBA 2.0; Sanavio *et al* 1986) is a set of ten sheets investigating some primary psychological constructors and psychological disorders and tends to identify potential dysfunctional areas. The questionnaire D assesses the depressive symptoms through 24 dichotomous response items (yes-no). Scores higher than 95° percentile are deemed significant. The questionnaire D has a high internal consistency (Cronbach's alpha = 0.87). The CBA 2.0 is widely used in medical settings (Bertolotti *et al* 2012).

Beck Depression Inventory

Beck Depression Inventory (BDI; Beck *et al* 1961) assessed the severity of depression through 21 items. The score ranges from 0 to 63. The items are assessed according to a 4 point scale from 1 to 4 in ascending order of seriousness. The score allow to identify 6 dimensions from possible denial of depression to severe depression. Reviews have noted that the scale has excellent validity (Beck 1988).

The Perceived Stress Scale

The Perceived Stress Scale (PSS; Cohen *et al* 1983) measures psychological stress considering potentially stressful life events. It is composed of 10 items evaluated with a 5 point scale from 0 (never) to 4 (very often). Scores ≥ 20 assessed to high levels of perceived stress. The PSS showed adequate reliability and good internal consistency – Cronbach's alpha = 0.78 – (Cohen & Williamson 1988).

The State-Trait Anxiety Scale

The State-Trait Anxiety Scale (STAY-Y; Spielberger 1983) measures via self-report the presence and severity of current symptoms of anxiety and a generalized propensity to be anxious. There are 2 subscales within this measure. First, the State Anxiety Scale (S-Anxiety, STAY – Y2) evaluates the current state of anxiety, asking how respondents feel “right now,” The Trait Anxiety Scale (T-Anxiety, STAY – Y1) evaluates relatively

stable aspects of “anxiety proneness.” The STAI-Y has 40 items, and the total score for each scale (trait and state) ranges from 20 to 80. A score of greater than 40 is recommended as showing some signs of anxiety (Julian 2011). The internal reliability of the scale is .93, and there is strong evidence regarding its validity (Spielberger 1983; Romano *et al* 2014).

Procedure

Eligible patients were screened for clinical, social and demographic variables (sex, age, age at diagnoses of CD, disease length, family history of IBD, treatment, Crohn’s disease localization, Crohn’s disease behaviour, and surgery).

The presence of psychological distress, in particular anxiety and/or depressive symptoms, was investigated through the HADS. The coping strategies were assessed through the Brief – COPE.

Then all patients with HADS scores ≥ 8 in depressive subscale were investigated by questionnaire D of CBA 2.0 and BDI; and all patients with HADS scores ≥ 8 in anxious subscale were investigated by PSS and STAI-Y.

Statistical analysis

Comparison between HADS anxiety sub-scale positive and negative and HADS depression subscale positive and negative and scores of Brief-COPE was performed using Wilcoxon-Mann-Whitney test.

In HADS positive groups, Spearman’s correlation assesses the relationship between clinical and demographic variables and scores of the rating scales.

Linear regression assess possible predictive risk factors for developing depressive or anxious symptoms.

RESULTS

Clinical, social and demographic features of the patients are showed in Table 1.

Prevalence of anxiety and/or depressive symptoms

45 patients (36.6% of the total sample) showed anxious and/or depressive symptoms (HADS +): 25 patients (55.5%) had positive scores for anxious symptoms, 1 patient showed depressive symptoms (2.2%) and 19 showed both conditions (42.2%).

27 patients (61.4%) of the group of 44 ones with HADS + for anxiety assessed high levels of perceived stress with PSS. Considering the same group with HADS + for anxiety, 30 patients (68.2%) showed high scores at STAY-Y1 and 28 patients (63.6%) showed high scores at STAY-Y2.

8 patients (40 %) of the group of 20 ones with HADS + for depression showed relevant depressive symptoms at questionnaire D of CBA 2.0, and 11 (55%) patients showed relevant depressive symptoms at BDI.

The coping strategies were evaluated through Brief-COPE. We founded that the group of HADS + for anxiety showed significant lower values of “Posi-

Tab. 1. Demographic and clinical features of patients.

Sex	% (N)
Male	70.2% (74)
Female	39.8% (49)
Marital status	% (N)
Single	47.2% (58)
Married	47.2% (58)
Divorced	5.7% (7)
Level of education	% (N)
Elementary school	3.3% (4)
Middle school	27.6% (34)
High school	18.8% (60)
Degree	20.3% (25)
Work	% (N)
Student	1.6% (2)
Housewife	7.3% (9)
Employee	61.8% (76)
Self-employed	15.4% (19)
Unemployed	7.3% (9)
Pensioner	6.5% (8)
Family history of IBD	% (N)
Yes	23.6% (29)
No	76.4% (94)
Age at diagnosis of CD mean years (\pmsd)	27.62 (\pm 9.05)
Duration of CD mean years (\pmsd)	16.68 (\pm 8.86)
CD’s localization	% (N)
Ileum	35.8% (44)
Colon	13.8% (17)
Ileocolonic	29.3% (36)
Ileum + Perianal	10.6% (13)
Colon + Perianal	2.4% (3)
Ileocolonic + Perianal	8.1% (10)
Treatment	% (N)
No therapy (clinical observation)	27.6% (34)
FANS	23.6% (29)
Immunosuppressive treatment	15.4% (19)
Anti TNF alpha	15.4% (19)
Surgery	% (N)
None	43.9% (54)
Conservative surgery	2.4% (3)
Resectiv surgery	39.8% (49)
Perianal	2.4% (3)
Resective + Perianal	6.5% (8)
Conservative + Resective	4.1% (5)
Conservative + Resective + Perianal	0.8% (1)

tive reframing" ($p=0.020$), "Self distraction" ($p=0.002$), "Denial" ($p<0.001$). The group of HADS + for depression showed significant lower values for "Denial" ($p=0.015$).

Using Spearman's correlation we founded some demographic and clinical variables related to scores of rating scales as shown in Table 2.

Linear regression identified that CD's localization was related to high scores of HADS in both subscales; CD's localization, and no family history of IBD were related to high Trait Anxiety; no family history of IBD is also related to high levels of CBA (Table 3).

DISCUSSION

This study confirms previous epidemiological studies (Kessler & Ormel 2003): anxiety and depression are frequent comorbidities in CD patients, even in those in clinical remission. The prevalence in the sample of high levels of perceived stress, trait and state anxiety and significant depressive symptoms prove screening HADS data.

Patients with anxiety show lower use of coping strategies "Positive reframing", "Self distraction", "Denial". These coping strategies could intensify anxious symptoms: patients are unable to distract themselves with other activities and to thinking about their problems in a new and productive ways. Patients with depressive symptoms showed lower use of "Negation" that could

mean the difficulty to stop over thinking about their feelings and problems.

Lower age of onset of CD could be a protective factor for anxiety or depression, this is maybe related to the fact that young people are more self-confident and able to adapt themselves to new scenarios. Women with CD have more risk of anxiety and depression as in natural population (Wang *et al* 2016). Family history of IBD has a protective role because people could well know history and evolution of the pathology reacting by using more effective strategies.

These data are compatible with previous studies revealing that depressed CD patients may be not able to implement functional strategies to manage stress related with their disease. Lacking in the use of positive and operative coping styles as "positive reframing" and "planning", CD patients tend to become demoralized before a stressful event. This way to cope with situations could worsen the typical manifestation of depressive disorder, like loss of interests and self-devaluation (Viganò *et al* 2016).

Patients with CD, especially those with risk factors like female sex, no family history of IBD, late age of onset, colic or perianal localization of CD, need to be regularly controlled to identify anxious and/or depressive symptoms. This is extremely important to help patients with appropriate treatments as antidepressant (Goodhand *et al* 2012; Mikocka-Walus *et al* 2012) and psychological therapy (Iskandar *et al* 2014). Antidepressant

Tab. 2. Spearman's correlation between demographic and clinical variables and rating scales (p).

	Age	Female sex	Onset age of CD	Duration of illness	Family history of IBD
HADS Anxiety	0.112 (0.218)	0.199* (0.027)	0.071 (0.434)	0.076 (0.404)	0.105 (0.248)
HADS Depression	0.119 (0.270)	0.271* (0.002)	0.199* (0.027)	0.047 (0.607)	0.015 (0.871)
CBA-D	0.224 (0.170)	0.190 (0.246)	0.396* (0.013)	-0.124 (0.451)	-0.318* (0.048)
BDI	-0.346* (0.031)	-0.284 (0.079)	0.262 (0.311)	-0.432 (0.006)	-0.157 (0.341)
Brief-COPE Positive reframing	0.012 (0.896)	-0.077 (0.400)	-0.185* (0.041)	0.142 (0.180)	0.023 (0.803)

Tab. 3. Linear regression between demographic and clinical variables and rating scales.

Dependent Variable	Parameters for model			Independent variables with significant effect	Standardized Beta	p-value
	Adj R ²	F	p-value			
HADS Anxiety	0.704	1.88	0.049	CD's localization	0.289	0.003
HADS Depression	0.140	2.81	0.003	CD's localization	0.243	0.009
CBA D	0.220	2.07	0.063	Family history of IBD	-0.345	0.046
STAI - Y1	0.390	3.43	0.005	Family history of IBD	-0.344	0.018
				CD's localization	0.405	0.012

sants seem to improve anxious and depressive symptoms, relieving also functional symptoms related to CD (Jelenova *et al* 2016). Psychological therapy (Jelenova *et al* 2016) could support patients to manage the disease using positive coping styles. Taking medications, keeping healthy lifestyles, good problem solving could influence the course of the disease and, indirectly, QoL (Faust *et al* 2012; Larsson *et al* 2008; Bennebroek *et al* 2012). Therefore, an inter-disciplinary approach to CD patients is needed to better manage the disease.

Further analysis of a larger data sample of CD patients with anxiety and/or depressive symptoms are needed to confirm this study.

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