Alimentary Tract

Anger and ego-defence mechanisms in non-psychiatric patients with irritable bowel syndrome

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Abstract

Background. Irritable bowel syndrome is commonly accepted as a disorder closely influenced by affective factors, which can either trigger the symptoms or contribute to their persistence, independently from their aetiology. It has been previously documented that irritable bowel syndrome patients respond to a variety of emotional states (anger, fear and anxiety) with an increase in colonic motility.

Aims. The aim of this study was to evaluate the experience and the expression of anger and the prevalent ego-defence mechanisms in a group of non-psychiatric patients with irritable bowel syndrome.

Subjects. Fifty-two patients with irritable bowel syndrome (18 males, 34 females) and 100 healthy volunteers from the community (44 males, 56 females) matched for age, level of education and social-status were enrolled.

Methods. Assessment was conducted using the State–Trait Anger Expression Inventory and the Defence Mechanism Inventory.

Results. No important differences between the two examined groups were found using the State–Trait Anger Expression Inventory and Defence Mechanism Inventory.

Conclusions. It can be hypothesised that stable personality features and habits, such as anger disposition and defence mechanisms, play only a marginal role in irritable bowel syndrome, while psychological and psychosocial influences may act as predisposing or precipitating factors which contribute to the pathogenesis or expression of irritable bowel symptoms.

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1. Introduction

Irritable bowel syndrome (IBS), affecting 10–20% of the general population, is a chronic, functional disorder of the gastrointestinal tract, which is characterised by abdominal pain, disturbed defecation (constipation and/or diarrhoea) and other minor symptoms such as bloating, abdominal distension, feeling of incomplete evacuation and urgency [1,2].

Although the causes of IBS are poorly understood, it is commonly accepted as a disorder closely influenced by affective factors, which can either trigger the symptoms or contribute to their persistence, independently from their aetiology. Affective disorders and IBS may share some common pathophysiological features: alterations in 5-hydroxytryptamine (5-HT) have been documented both in depressive disorders and in IBS [3].

Previous reports on IBS patients show that variations in their intestinal motility pattern may follow emotional or significant environmental stimulation [4,5]; in fact, particularly stressful events, fear, anxiety and anger increase intestinal motility in IBS patients far more than in healthy controls [6–10]. Moreover, Evans et al. [11] documented a relationship between the tendency to control or repress anger, abdominal pain and augmented post-prandial colonic motility, whereas Welgan et al. [12] found that antral motor activity decreased in IBS patients and increased in controls. Among the psychosocial features closely related to IBS, the literature widely
examined the role of coping skills [13–15], while studies directed to a better comprehension of the ego-defence mechanisms – defined by DSM IV as ‘automatic psychological processes that protect the individual against anxiety and from the awareness of internal or external dangers or stressors’ [16] – are still lacking.

In 1936, Freud [17] defined ego-defence mechanisms as mental functions which protect the individual from the excessive anxiety deriving from both stressful external events or disruptive inner psychological states. The protective property of the ego-defence mechanisms acts through the modification, distortion or removal of stressful thoughts, feelings and perceptions.

Ego-defence mechanisms are different from coping skills, although both processes are thought in terms of adaptive functions protecting the individual from the emotional consequences of unfavourable life events.

In 1998, Cramer [18] stressed the necessity to maintain a distinction – on the basis of specific characteristics – between defence and coping mechanisms. As stated by the author, coping skills require full awareness and the decision to manage and resolve a problematic situation, whereas ego-defence mechanisms act without conscious awareness and can only interfere with the inner psychological state, producing distortion of reality. Moreover, coping skills depend on situations, while ego-defence mechanisms reflect relatively stable, enduring characteristics of individuals.

To deal with stress, people use both intentional, consciously willed behaviours (coping) and also unconscious mechanisms (defences). Thus, behind coping skills, ego-defence mechanisms play a critical role in influencing both the meaning ascribed to particular life events and the functioning at daily life, diminishing negative affects without conscious effort in a direct way, independent of awareness.

The aim of this study is to evaluate the experience and the expression of anger and the prevalent ego-defence mechanisms in a group of non-psychiatric patients with IBS. Among the emotions, we elected to study the effect of anger on IBS because, as opposed to anxiety, anger has not been studied in as much depth in its connection to IBS, and moreover, it is an emotional state widespread in the general population. Other factors commonly investigated in IBS, such as depression and stressful life events, are clearly involved in psychiatric disorders. We also started from the hypothesis that specific defensive styles may interfere with the management of stressors, emotions and anger but can also influence the functional bowel disorder, mainly its onset, symptoms severity and outcome.

2. Methods

2.1. Inclusion and exclusion criteria

Patients between 18 and 70 years old with IBS were selected for the study. IBS was established according to the Rome II survey criteria [19], after full evaluation by a gastroenterologist and colonoscopic examination. The Rome II criteria include self-report of continuous or recurring symptoms of abdominal pain or irritation associated with at least two symptoms of defecation relief, change in stool frequency or in stool consistency over the preceding three months. Exclusion criteria were the organic pathogenesis of the disease, a history of severe somatisation or psychotic disorders, the presence of any psychiatric disorder included in Axes I and/or II of the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV at the time of colonoscopy and during a six-month period prior to the study.

2.2. Subjects

Sixty-four IBS outpatients of the Endoscopy Unit of the Department of Medicine and Pharmacology of the Policlinico Universitario of Messina were consecutively selected after an examination by a gastroenterologist and colonoscopy. Afterwards, within two days, they underwent a clinical interview conducted by a psychiatrist with at least five-years clinical experience in order to exclude the presence of concurrent psychiatric disorders classified on Axes I and/or II of the DSM IV. The psychometric examination was conducted at the conclusion of the psychiatric interview. Twelve patients were excluded from the study because, at the psychiatric interview, the presence of a concurrent psychiatric disorder emerged (four patients were affected by Major Depressive Disorder, six patients by Generalised Anxiety Disorder and the last two by Personality Disorders Not Otherwise Specified).

The control group consisted of 100 healthy volunteers (44 males, 56 females) matched for age, level of education and social status, recruited among general population. All control subjects underwent a psychiatric interview and were screened for mental disorders. They also underwent a clinical examination to exclude those subjects with symptoms of IBS. The control subjects had no history of gastrointestinal problems or, for the six-month period prior to the study, a psychiatric disorder defined by Axes I and II of DSM IV.

Both clinical and control subjects gave written consent prior to their participation in the assessment study.

2.3. Instruments

All the patients underwent the following tests:

- State–Trait Anger Expression Inventory (STAXI) [20]
  The STAXI is a 44-item self-report questionnaire, which measures the experience and expression of anger. It consists of six primary scales and two subscales:
  (1) State Anger (S-A): measures anger as a transitory condition that varies in intensity from mild annoyance to intense fury.
  (2) Trait Anger (T-A): measures individual differences in the disposition to experience anger. The Trait Anger scale is further divided into two subscales:

- Patient Health Questionnaire-9 (PHQ-9) [21]
  The PHQ-9 is a depression instrument, and it is used to screen for the presence of a depressive disorder. The PHQ-9 assesses the frequency of nine symptoms of depression.

- Generalized Anxiety Disorder-7 (GAD-7) [22]
  The GAD-7 is a validated screening tool for Generalised Anxiety Disorder. It consists of seven questions and measures the frequency and severity of symptoms of anxiety.
• Angry Temperament (T-A/T): assesses a general tendency to experience and express anger without specific provocation.
• Angry Reaction (T-A/R): assesses the disposition to express anger when criticised or treated unfairly by others.

3. Anger-Out (AX/Out): measures the expression of anger toward other people or objects in the environment.

4. Anger-In (AX/In): measures the extent to which angry feelings are held in or suppressed.

5. Anger Control (AX/Con): assesses the frequency with which individuals effectively control or reduce the expression of anger.

6. Anger Expression (AX/EX): derived from the previous three scales, it provides a general index of the expression of anger, independently from its direction (in, out).

Using 4-point scales, participants assess either the intensity or frequency of their experiences and results are expressed as T scores. Higher scores indicate a greater tendency to experience and express anger without repression. Defence mechanisms such as rationalisation, intellectualisation and isolation fall in this category.

4. Turning Against Self (TAS) includes those defence mechanisms that handle conflicts through directing aggression toward the subject him- or herself. Masochism is an example of defence mechanism in this category.

5. Reversal (REV) deals with conflicts responding in a positive or neutral way to a frustrating object that might rather evoke a negative reaction. Reaction formation, denial and repression are defence mechanisms included in this category.

Scores ranging from 0 to 2 are assigned to each item and the total score for each defence style may range from 0 to 80. Results are expressed as T-scores.

The DMI has been used in broad samples, both clinical [23] and non-clinical [24]. To the best of our knowledge, the use of the DMI in clinical samples of subjects affected by organic illnesses has been limited; however, the validity of a shortened form of the DMI has been examined in different clinical populations such as adult females undergoing abdominal surgery, infarct patients and females affected by migraine [25–27]. The instrument, however, shows good test–retest reliability, internal consistency, content, concurrent and discriminative validity, and it has a factor structure which is relatively uniform across different populations.

2.4. Statistical analysis

Data obtained from the study underwent check and quality control and, subsequently, to descriptive and inferential statistical analysis. The Normality test and the Levene test for equality of variances were applied for all the variables, then equality of variances were applied for all the variables, then non-parametric tests for two independent samples; non-continuous data were expressed as percentages and the comparison between the two groups was performed using the Mann–Whitney non-parametric test for two independent samples; non-continuous data were expressed as percentages and the comparison between the two groups was performed by using the χ²-test. The significance level for the test was p < 0.01. The statistical analysis was performed with Statistical Package for the Social Sciences – SPSS 11.5 software (SPSS Inc, Chicago, IL, USA).

3. Results

The final clinical sample consisted of 52 individuals (18 males, 34 females) between 19 and 68 years of age (mean age: 32.21 years; DS: 12.20). The duration of disease varied from a minimum of 1 year to a maximum of 30 years (mean duration: 7.75 years; DS: 6.79).

Regarding social and demographic features, no significant differences between IBS patients and healthy controls were documented (Table 1). These observations presumably
indicate that social and demographic characteristics do not influence the successive comparison of the various levels of anger and defence styles between groups.

Tables 2 and 3 show the descriptive statistical analyses and the Mann–Whitney U-test for two independent samples based on the STAXI and DMI variables for IBS patients and controls; even considering these variables, no relevant differences between the two examined groups were found.

4. Conclusions

IBS is considered a chronic disorder of the colonic function, often associated with a number of diagnosable psychiatric conditions such as anxiety, depression, panic disorder, agoraphobia and somatisation [28–31]. It has been previously documented that IBS patients respond to a variety of emotional and environmental events with an increase of colonic motility [4,5]. Regarding emotional triggers, anger, fear and anxiety determine an increase of the intestinal motility of the large bowel both in IBS patients and in normal subjects, although IBS patients respond to these emotions with greater motor activity [9,10]. Recently, Blomhoff et al. [32] have shown a discrete influence of the emotional state, caused by stress or a psychiatric disorder, on the intestinal reactivity; they consider gut motility as a dynamic indicator of level of stress and of the intensity of the individual’s affective involvement.

In a study based on the experimental induction of emotions, when considering anger, Welgan et al. [12] reported that IBS patients, as opposed to the controls, showed an increased motility in response to anger-induction experimental events, and this almost exclusively in the colon. As reported by the authors, anger levels registered in both groups were similar...
and the documented difference might be due to a qualitative aspect of anger rather than to a quantitative one. Based on the evidence found in the literature, this present study aimed to investigate, in a group of patients affected by IBS, possible relationships between anger and the ego-defence mechanisms which may modulate the experience and the expression of the same emotion. Differently from previous reports, this study did not evaluate anger by experimental methods of induction, as it seems quite clear that ongoing emotional states such as anger and anxiety have a direct effect on gut motility. We chose a self-report questionnaire, the STAXI, that assesses both the experience of anger and its ways of expression, since we were more interested in exploring the role of anger as a stable component of the personality structure (trait versus state) and the possible role of defence mechanisms which are involved in emotional modulation. The results show no significant differences in anger and defensive profiles between IBS patients and the controls. Thus, anger experience and expression as well as defensive styles considered as stable personality features, do not seem to play a critical role in the functional colonic disorder in IBS patients who do not manifest a concurrent psychiatric disorder or emotional disturbances. Our results, however, show a number of limitations; first, the relatively small sample size raises the possibility that the statistical power is low and might give rise to a type II error, possibly leaving the existing differences undetected. Second, a prospective design would be more suitable than the current cross-sectional design to support the conclusions. Third, considering that our sample of IBS patients were unaffected by diagnosable mental illnesses, it would be interesting to investigate the same variables on a sample of IBS subjects with a comorbid psychiatric disorder. Although the relationship between emotional states and the intestinal motility, both in IBS as in control subjects, is well documented in the literature, the results obtained from the present study seem to indicate that trait anger and defensive profiles do not differ between IBS subjects unaffected by mental illnesses, and the controls. As reported by Blanchard and Scharff [33], there are significant correlations of same-day measures of stress and gastrointestinal symptoms, but there is no evidence of stressful events on one day leading to an exacerbation of IBS symptoms the next. According to this observation, it can be hypothesized that stable personality features and habits, such as anger disposition and defence mechanisms, play only a marginal role in IBS, while it is widely accepted that psychological and psychosocial influences may act as predisposing or precipitating factors which contribute to the pathogenesis or expression of irritable bowel symptoms. Further studies are needed to expand our knowledge and comprehension of this complex and multifactorial disease.

Conflict of interest statement

None declared.

References

One interesting aspect associated with the study of functional gastrointestinal disorders, and particularly irritable bowel syndrome (IBS), is the relationship between psychosocial factors and the disease. Early analytic thinkers, such as Alexander [1], felt that IBS as well as other functional gastrointestinal disorders represented defects in ego functioning and inadequate 'defence mechanisms.' These findings are based on observational research, without the use of control groups. The methodology was further negatively impacted by the fact that valid diagnostic criteria and validated psychometric instruments for measuring various psychosocial factors for IBS did not exist at the time of those studies.

We have come a long way since then. In the last 30 years, numerous studies have documented the presence of significant comorbid levels of mood and anxiety disorders in association with IBS [2]. These findings focused, by and large, on specific psychiatric diagnoses, using standardised psychometric instruments to look for specific psychiatric diagnoses. The advent of the Rome criteria for IBS has led to a reasonably sensitive, specific, and most importantly, common definition for this disorder to be used in the research setting [3]. Using contemporary methodology, the incidents of psychiatric disorders, particularly mood and anxiety disorders, as mentioned above, have been reasonably well studied in the IBS patient population. Likewise, this has led to recommendations on how to best detect and integrate their treatment to optimise outcomes for these patients [4]. These findings have led to significant improvements in treatment. Recent studies have documented the efficacy, and indeed in some studies, superiority of behavioural as opposed to medical or even psychopharmacological treatment for patients with functional gastrointestinal disorders, including IBS [5].

However, lost in this rapidly advancing body of knowledge has been the issue of underlying personality structure due to the poor quality and dubious results of early research done in the area of personality structure and ego-defence mechanisms as they relate to IBS. This area, by and large, has been ignored over the last 30 years. Zoccali et al. [6] present an interesting and high quality study investigating the relationship of ego-defence mechanisms, and