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The role of alexithymia and gastrointestinal-specific anxiety as predictors of treatment outcome in irritable bowel syndrome

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Abstract

In a previous investigation irritable bowel syndrome (IBS) was associated more to alexithymia than gastrointestinal-specific anxiety (GSA). In this study their independent contribution in predicting treatment outcome was longitudinally investigated. Consecutive 150 IBS patients were evaluated for IBS symptoms, alexithymia, GSA, and psychological distress with validated scales after as-usual treatment for 6–12 months. The primary treatment outcome was improvement measured with the IBS-Severity Scoring System that showed 111 patients who improved and 39 who did not improve. Improvement was associated to both alexithymia (d = 1.27) and GSA (d = 4.63) but only alexithymia showed overtime stability by hierarchical regression, controlled for co-variables. A series of logistic and linear regressions showed that baseline alexithymia, but not GSA, independently predicted both post-treatment improvement status (Cox & Snell R^2 = 0.15; overall classification rate = 74%) and symptom change (23% of explained variance). Although alexithymia and GSA were closely related IBS symptoms, only alexithymia was found to be a stable trait and a stronger predictor of treatment outcome than GSA. Since no treatment was established to be definitely effective for IBS, clinicians might improve treatment outcome by identifying patients with high alexithymia, attempting to improve their coping skills, emotional regulation, and affective awareness.

1. Introduction

Alexithymia is a multifaceted personality dimension defined as a reduced ability to identify and describe subjective feelings and to distinguish among different feelings, a paucity of fantasy, and a concrete cognitive style [1]. These characteristics are thought to reflect deficits in the cognitive processing and regulation of emotions that affect health [2], including somatization [3]. In the last 40 years consistent evidence has been shown for high levels of alexithymia in a large number of functional and organic conditions as skin, cardiovascular, kidney, respiratory, oncologic, neurologic, endocrinology, and immune diseases (for a review, see [4]). Alexithymic deficits can affect health perception through dysregulation of stress-related autonomic arousal, low tolerance to painful stimuli, somatosensory amplification, high health care utilization, and posttraumatic shutdown of emotions [2,4]. Finally, neuroimaging evidence shows that alexithymia is associated with reduced neural responses to emotional stimuli from the external environment and activity during imagery in limbic regions (e.g., amygdala and cingulate cortex) and, in contrast, is associated with enhanced neural activity in somatosensory and sensorimotor regions, including the insula [5].

Not surprisingly, alexithymia has been related to functional gastrointestinal disorders (FGID), a group of disorders currently

Abbreviations: DIF, Difficulty Identifying Feelings; *DDF*, Difficulty Describing Feelings; *EOT*, Externally Oriented Thinking; *FGID*, Functional Gastrointestinal Disorders; *GSA*, Gastrointestinal-specific Anxiety; *GSRS-IBS*, Gastrointestinal Symptom Rating Scale-IBS; *HADS*, Hospital Anxiety and Depression Scale; *IBS*, Irritable bowel syndrome; *IBS-SSS*, IBS Severity Scoring System; *TAS-20*, Toronto Alexithymia Scale-20; *VSI*, Visceral Sensitivity Index.

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conceptualized as altered communication of the bidirectional gut–brain axis that are not explained by known structural or organic abnormalities [6,7]. Earlier findings in these patients showed that alexithymia is prevalent at 43% to 66% [8–12], was associated to chronic fatigue through depression and somatization [13], and predicted functional symptoms independently of the presence of organic diseases as inflammatory bowel disease [14], gallstone disease [15], endoscopic findings [9], and chronic hepatitis C [16]. Finally, alexithymic patients with irritable bowel syndrome (IBS) showed visceral hypersensitivity (emotional and autonomic hyperarousal in response to interoceptive unpleasant visceral sensations, particularly stronger pain and urgency for defection) and higher activity in the right insula – which is the primary projection area for visceral afferent information and is critically involved in subjective emotional experience and awareness of the internal bodily state – and orbital gyrus – which receives robust sensory inputs and acts as an internal environmental integrator that coordinates behavioral, autonomic, and endocrine responses in response to colonic distension [17].

IBS is one of the most prevalent FGIDs in which abdominal pain is associated with defecation or a change in bowel habit (diarrhea and/or constipation and related problems of abdominal gas, abdominal distension, flatulence, poor digestion) [18]. It has a chronic relapsing course, with 12–15% prevalence [19], and is associated with impairment of quality of life, psychosocial functioning and considerable socioeconomic burden because of high direct and indirect costs [20]. Some psychological factors have been found to affect visceral symptom perception in IBS patients (for a review, see [21]), including GI-specific anxiety (GSA). GSA refers to the cognitive, affective, and behavioral response stemming from fear of GI sensations or symptoms, and the context in which these visceral sensations and symptoms occur [22–24]. It is focused specifically on the IBS core features (abdominal pain and altered bowel habit) in specific contexts as situations involving food and eating, like restaurants and parties or locations in which bathroom facilities are not known or difficult to reach. Briefly, GSA relates to hypervigilance to, and fear, worry, and avoidance of GI-related sensations and contexts [24], thus contributing to more severe IBS symptoms, psychological distress, and poor quality of life [22].

Alexithymia and GSA are likely involved in visceral symptom perception since they may indicate difficulty in emotional regulation, biased selective attention to somatic sensations, higher negative emotionality, exaggerated symptom reporting, poor coping, avoidant behaviors, higher health anxiety resulting in heightened fear of GI symptoms (GSA) and difficulty identifying and describing feelings (alexithymia). In a previous cross-sectional investigation [25] we found that, although GSA and alexithymia were closely related to each other and to IBS –suggesting a common basis of emotional dysregulation underlying the clinical manifestations of IBS –, alexithymia was a stronger predictor of symptom severity than GSA. The aim of this follow-up study was to investigate in the same patient sample the independent role of stable traits of GSA and alexithymia in predicting response to 6–12 months of as-usual treatment. More specifically, we investigated whether symptom improvement (defined as clinically significant positive change of IBS symptoms from pre- to post-treatment) could be independently predicted by the level of alexithymia and GSA, over and above clinical and psychological cofactors. Based on previous literature, we expected that both constructs would be related to the treatment outcome. However, since to our knowledge this is the first longitudinal study investigating alexithymia and GSA jointly, we could not expect which of them would be more determinant in treating IBS patients.

2. Methods

2.1. Patients

As previously reported [25], participants were consecutive adult outpatients (18–70 years-old) referred for their first time to our institute, a GI tertiary care hospital in southern Italy, and fulfilling Rome III diagnostic criteria for IBS [18]. Patients with comorbid organic GI disease (e.g., inflammatory bowel disease), severe medical comorbidity (e.g., cancer, ischemic heart disease, metabolic disease, or autoimmune disease), pregnancy, mental retardation, current or past diagnosis of schizophrenia or other psychotic disorders, and current substance abuse were excluded. Patients were evaluated for medical history and past or current psychopathology by senior investigators. All patients gave written informed consent to participation. The study was approved by the local ethics committee.

Patients were treated on a case-by-case basis with combination and variable forms of GI and/or psychotropic medications, diet modifications, and psychological counseling or brief psychotherapy. They were re-evaluated after a period of treatment ranging from 6 to 12 months based on the clinical course of IBS. The period of treatment was not pre-established to maximize the ecological validity of the trial and make the study as closer as possible to clinical reality.

2.2. Measures

2.2.1. GI-specific anxiety

GSA was measured with the Visceral Sensitivity Index (VSI) [23,24], a 15-item self-report questionnaire designed to measure those unique aspects of fear, anxiety, and hyper-vigilance that can accompany misappraisals of visceral sensations and discomfort and the context in which these occur. The VSI includes a six point response scale yielding a range of possible scores from 0 (no GSA) to 75 (severe GSA). Although it measures five different dimensions of GI-related cognitions and behaviors (fear, worry, vigilance, sensitivity, and avoidance), the VIS is a mono-dimensional scale. Even though the 5 domains were included in the item scale contents, validation studies showed that the scale has no distinct factors that can be evaluated independently, thus resulting in a global single score. It has however shown excellent psychometric