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Depression and Anxiety in Irritable Bowel Syndrome: A Literature Review

A. Deza Farista^{1*}

¹Faculty of Medicine, Sriwijaya University, Mohammad Hoesin General Hospital, Palembang, Indonesia

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*Corresponding author:

A. Deza Farista

E-mail address:

dezafarista@gmail.com

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ABSTRACT

Irritable bowel syndrome (IBS) is a common functional gastrointestinal illness that can be disabling. There's a link between IBS and psychological issues including anxiety and sadness, according to research. IBS symptoms include stomach pain or discomfort, bloating, and other somatic, visceral, and mental comorbidities, as well as other somatic, visceral, and psychiatric comorbidities. Currently, IBS is diagnosed based on symptoms and the exclusion of other organic conditions, and treatment involves pharmacological treatment for the most severe symptoms, as well as nutrition and psychotherapy. This study reveals that people with IBS have greater levels of anxiety and depression; however, no single subtype has been identified as being related with higher psychiatric comorbidities than the others. Low-dose antidepressants and psychotherapy are the best treatments for anxiety and depression.

1. Introduction

Irritable bowel syndrome (IBS) is a common, expensive, and sometimes disabling functional gastrointestinal illness that causes abdominal pain, diarrhoea, and/or bloating.¹ IBS is defined as recurring abdominal pain linked with defecation or changes in stool form or frequency, according to the Rome IV criteria.² IBS is estimated to affect 11.2 percent of the global population, but it varies locally between 1.1 percent and 45 percent of the general population,³ posing a significant financial burden on healthcare systems and society. Evidence suggests that IBS is linked to psychological and mental disorders.⁴ Psychological discomfort, such as anxiety and depression, is one of the most commonly reported non-GI symptoms among IBS patients and is a major concern for many.⁵ Some population-based research have found that non-consultants IBS patients have reduced rates of psychiatric symptoms.⁶ While some

IBS patients believe that their psychiatric problems are caused by their IBS's intrusive character, others believe that their psychiatric diseases are linked to the onset of their GI symptoms. Psychological discomfort can increase symptoms, negatively affect treatment outcomes, and affect doctor-patient interactions, thus knowing how IBS is linked to psychiatric diseases will help us better understand and manage IBS patients.⁷ Though no research has yet been done on the probable link between IBS and psychiatric symptoms, this research looked into the co-occurrence of IBS and perceived psychiatric symptoms including anxiety and depression.

Association between IBS and other disorders

Not only do IBS subtypes overlap, but population-based studies also show a 20 percent overlap with other upper and lower gastrointestinal functional

disorders: functional dyspepsia, heartburn, gastroesophageal reflux disease, and nausea on the one hand, and diarrhoea, incontinence, pelvic floor dyssynergia, and constipation on the other.⁸ Other IBS-related disorders include urological chronic pelvic pain syndrome (which includes interstitial cystitis and chronic prostatitis), vulvodynia, overactive bladder, prostatic pain syndrome, premenstrual syndrome, sexual (including erectile) dysfunction, chronic pelvic pain, fibromyalgia, chronic fatigue syndrome, migraine, and erectile dysfunction.⁹ Furthermore, most epidemiological studies report the occurrence of mental comorbidities (such as anxiety, depression, somatization, or neuroticism) not only in IBS but also in these IBS-related disorders. Again, the rates are higher than expected given IBS and the prevalence of these symptoms in the general population.¹⁰ Thus, in the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM5) and in psychiatric or psychosomatic clinical management, the entire disease entity (IBS, functional gastrointestinal disorders, and other functional non-gastrointestinal disorders) has been included in the term "somatic symptom disorder."¹¹ Prior to the advent of DSM5, patients with IBS who were treated by psychiatrists frequently did not receive appropriate attention to their gastrointestinal symptoms.

Risk factors for IBS

Female sex is the best-documented risk factor for IBS, with an odds ratio of 1.67 (95 percent confidence interval: 1.53–1.82) in many population-based studies³, with explanations ranging from sex-different health care, consultation behavior, and biological functions (for example, hormonal regulation of gut functions). IBS is less common as people become older (>50 years), yet it is more common in children and adolescents than in adults, and it does not always pass from childhood to adulthood.¹² However, familial aggregation has been seen, which is influenced by both genetics and social learning. Lists the personal, medical, psychosocial, and social factors linked to a higher risk of IBS, while some of these factors have

only been discovered in single research or have been found to vary between nations and situations.^{13,14}

Mechanisms/Pathophysiology

Although the cause of IBS is still unknown, our understanding of the mechanisms behind gut dysfunction, visceral sensation, and symptom development is quickly improving. The epithelium barrier, gut microbiota, dietary antigens, and bile acids trigger aberrant responses in the major regulators of sensorimotor activities, including the hypothalamus–pituitary–adrenal (HPA) axis, immune system, brain–gut axis, and enteric nervous system, according to growing data (ENS). As a result, these characteristics could serve as possible disease biomarkers. Psychological factors such as sadness and anxiety, which are known to respond to abdominal symptoms, and psychosocial factors such as stress, which influence physiological intestinal functions such as motility and visceral sensitivity, are also prospective biomarkers.¹⁴

Diagnostic criteria

Because individual symptoms have low sensitivity and specificity for diagnosing IBS, diagnostic criteria based on a mix of symptoms, similar to the DSM system in psychiatry, have been devised. The so-called Manning criteria, published in 1978, were the first attempt.¹⁵ Several symptoms were found to be more common in IBS patients than in people with other organic gastrointestinal diseases in this study. IBS can be distinguished from other organic gastrointestinal illnesses by combining these symptoms. The Manning criteria were subsequently utilized to establish the Rome Foundation criteria, which have been published in three versions over the last 15 years (Rome I, II, and III). The most recent standards, the Rome III criteria, were published in 2006.¹⁶ In May 2016, the updated Rome IV criteria are expected. The Rome criteria have been reported to have a sensitivity and specificity of 69–96 percent and 72–85 percent, respectively, in various investigations, although one issue with this research is defining the gold standard for an IBS

diagnosis.¹⁷ Abdominal pain or discomfort associated with abnormal bowel habits such as diarrhea, constipation, or alternating constipation and diarrhea is a common feature in all of these diagnostic criteria. To meet the diagnostic criteria for IBS, all of these criteria require a certain duration and frequency of symptoms; that is, the symptoms must be chronic and recurring.¹⁷

Clinical features

Aside from the symptoms listed in the diagnostic criteria, there are other clinical aspects that support an IBS diagnosis, albeit none of them are required. Variations in stool consistency and frequency, as well as an unpredictable bowel pattern described as "irregularly irregular," were found to be effective in distinguishing IBS-D from organic gastrointestinal disease in a recent study. Furthermore, atypical stool frequency, excessive straining during defecation, urgency, symptoms of incomplete evacuation, and mucus with bowel movements all point to IBS, but they are nonspecific.¹⁸ Other functional gastrointestinal diagnoses, such as functional dyspepsia, are common, as are reporting numerous functional non-gastrointestinal symptoms and syndromes, such as chronic fatigue, fibromyalgia, urogynecological symptoms, muscle and joint pain and sleep disturbances, as well as psychological comorbidity (such as anxiety and depression).¹⁹

Role of depression and anxiety in IBS

IBS symptoms overlap with those of depression and other functional somatic disorders to the point where some individuals fit the diagnostic criteria for both mental diseases. When it comes to somatization, IBS patients outperform healthy controls. Negative affect and/or somatization have been linked to poor health, and emotional arousal has been linked to physiological implications and a proclivity for illness. The corticolimbic-pontine outflow to the GIT is important in modifying the autonomic nervous system, neuroendocrine pathways, and visceral discomfort in people with IBS and depression. Increased pain

perception is linked to changes in these pathways, which are influenced by early childhood trauma. The serotonergic, noradrenergic, and opiodergic descending spinal pathways are all involved in emotional motor pathways.²⁰

The gastrocolic reflex, stomach emptying, transit time within the intestines, and bowel wall contractions all involve these pathways. It is demonstrable that emotions in depression and anxiety are an intrinsic element of the etiology of IBS, rather than being a consequence of IBS, under the impact of the emotional motor system, namely the corticolimbic-pontine pathway to the GIT.^{20,21}

Management

Only around half of patients with IBS-like symptoms seek medical help. The majority of these patients will seek treatment from their primary care physicians for their symptoms, and the severity of their symptoms, particularly pain, the occurrence of alarm symptoms, and concerns that their symptoms may indicate an underlying severe disease will all drive this consultation. IBS is treated using an integrated approach that includes building a strong patient-provider connection, education, reassurance, dietary changes, medication, and behavioral and psychological treatment. Because 50–70% of IBS patients report extra somatic and psychological symptoms when questioned, a stepped-care strategy that includes components of cognitive and interpersonal treatment is most appropriate.²² Antispasmodics for abdominal pain, antidiarrheals for IBS-D, and laxatives for IBS-C should be included in the first treatment strategy, while nutritional treatments and psychotherapy can be utilized in all subtypes.²²

Drug therapy

Antispasmodic drugs

Pain in IBS is mediated by both central and peripheral pathways, with smooth muscle spasms playing a role. The ability of antispasmodic medicines to oppose the binding of acetylcholine to the

muscarinic receptor at the neuromuscular junction, resulting in smooth muscle relaxation, is most likely their mechanism of action. As a result, these medications are best utilized in patients who do not have constipation, and they should be taken 20 minutes before meals to alleviate postprandial symptoms. Peppermint oil helps to relieve IBS symptoms by inhibiting smooth muscle contractions, although through calcium channel blocking. A recent RCT in individuals with IBSD and IBSM found that a new peppermint oil formulation designed to generate a sustained release within the small bowel was superior to placebo in reducing total symptoms.^{23,24}

Low-dose antidepressants

Existing guidelines prescribe antidepressants, such as tricyclic antidepressants (TCAs) or selective serotonin reuptake inhibitors (SSRIs), for the management of pain in patients who have failed to respond to antispasmodics and dietary changes. However, these medications are not approved for the treatment of IBS anywhere in the globe, and their usage is considered off-label. Given the lack of a licensed indication, patients should be informed about the justification for using such medications. Low-dose antidepressants' exact analgesic mechanism of action is unknown, but it is thought to be both peripheral and central, involving changes in histaminergic and/or cholinergic transmission within the gastrointestinal tract, as well as modulation of both ascending visceral sensory afferents and central transmission. In general, SSRIs are well tolerated.²⁵

Laxatives and motility accelerants

Simple laxatives like senna and docusate are often beneficial in alleviating constipation symptoms. However, it is not recommended to use lactulose because it is generally poorly tolerated by patients with IBS, causing bloating and pain.²⁶

Antidiarrhoeals

Loperamide, an opioid receptor agonist, is commonly used as a first-line treatment for IBSD. It

reduces diarrhoea by generating peristalsis, which slows gastrointestinal transit time. Because loperamide does not penetrate the blood-brain barrier, it has little central side effects. Its main benefit is that it reduces stool frequency and defecation urgency while also increasing stool consistency.²⁷

Psychotherapy

According to the biopsychosocial model of IBS, abdominal symptoms influence anxiety and depression secondarily, while psychosocial variables influence physiological characteristics like motor function, sensory threshold, and gut stress reactivity. Evidence-based models that take into account the following three components should be used to develop treatment approaches that address these psychosocial aspects in individuals with IBS: altered peripheral gut function control, altered brain-gut signaling, and psychological distress reduction, including general hypervigilance and a catastrophizing attitude. Such models could be useful as a foundation for patient education as well as a goal for effective treatments. For clearer evidence on which set of patients might benefit from which treatment method, we need to learn more about IBS-specific interactions, as well as the effect of stress and visceral sensitivity. Furthermore, patients with IBS frequently report other functional symptoms, demonstrating the condition's complexity. The impact of IBS symptoms on patients' feelings of humiliation, fear, and embarrassment is well documented; patients report feeling misunderstood by their doctors, as well as family and friends.²⁸ Patients whose symptoms do not respond to pharmacological treatments after 12 months and who develop a continuing symptom profile (refractory IBS) should be referred to cognitive-behavioral therapy (CBT), hypnotherapy (gut-directed hypnosis), or other psychological therapy, such as psychodynamic (intelligent) therapy, according to the National Institute of Health and Care Excellence (NICE) guidelines.²⁹

2. Discussion

Mohammad Zamani and his colleagues In their research, they discovered that IBS patients have high rates of anxiety and depression symptoms and problems. It was also discovered that IBS patients had a much higher risk of the aforementioned psychological issues than healthy control subjects. To the best of our knowledge, this was the first comprehensive systematic review and metaanalysis examining the prevalence of anxiety or depression in IBS patients and comparing the results to healthy controls.³⁰ Recent metaanalyses compared the standardized mean difference (SMD) of the levels between IBS patients and healthy controls to assess anxiety and depression levels, but not prevalence rates. Fond et al²⁸ conducted a metaanalysis of ten studies and found that IBS patients had significantly greater levels of anxiety (pooled SMD = 0.76) and depression (pooled SMD = 0.80) than controls. A subsequent systematic review by Lee et al³¹, which included 27 research, found that IBS patients had significantly greater levels of anxiety (pooled SMD = 0.84) and depression (pooled SMD = 0.76) than healthy controls. When compared to controls, IBS patients have significantly more severe (SMD = 2.02) and frequent (OR = 9.21) depression symptoms, according to Zhang et al³² review of 24 comparative studies. The findings obtained by us and other authors support the idea that patients with IBS suffer from varying degrees of anxiety and depression. The "braingut" interactions are likely to be at the root of the link between IBS and psychiatric disorders. According to psychophysiological and neuroimaging research, IBS is caused by a disruption of the braingut axis, which is a bidirectional neurological connecting connection between the brain and the digestive system. According to this hypothesis, abdominal symptoms influence anxiety and sadness, whereas psychological variables enhance the probability of IBS symptoms medically.²¹

3. Conclusion

The significant prevalence of anxiety, depressive symptoms, and distress in our individuals highlights the necessity of psychological evaluation of IBS patients in order to improve patient treatment and perhaps lower health-care costs. This study reveals that people with IBS have greater levels of anxiety and depression; however, no single subtype has been identified as being related with higher psychiatric comorbidities than the others. Low-dose antidepressants and psychotherapy are the best treatments for anxiety and depression.

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