

## Comorbidity Investigations of Gastrointestinal Disorders with Mental Disorders in Patients or Animals

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### Abstract

Psychological factors are supposed to play an important role through “brain-gut interactions” in functional gastrointestinal diseases (FGIDs) and irritable bowel syndrome (IBS) as well as inflammation bowel disease (IBD). Recently, scientists also found that anxiety and depression may be triggered by stress-induced changes to the gut bacteria. The gut-brain axis has been arisen as a major topic of interest in psychiatry. There is a common comorbidity of between psychiatric and gastrointestinal patients, and a large percentage FGIDs are more prevalent in the major depressive disorder (MDD) patients. Therefore, my editorial review for the journal will be focusing on the most prevalent research of the relative brain and gastroenterological investigations to enrich our current knowledge.

**Keywords:** Psychological factors; Major depressive disorder; Gastrointestinal diseases

### Review

In recent years, the gut–brain axis has arisen as a major topic of interest in psychiatry. It is being progressively recognized that between the brain and enteric nervous system, bidirectional communication occurs that practices neural, hormonal, and immunological courses. The role of the gut microbiota in behavioral changes is under investigation and it is specifically focused on variation of the stress response and stress-related behaviors linked with anxiety and depression [1,2]. New study further elucidated that the gut microbiota–inflammation–brain axis may offer novel therapeutic targets for psychiatric disorders [3]. We discuss the topic about the comorbidity study of gastrointestinal disorders in Patients or animals with depression / anxiety or other mental disorders [4]. We believe that it should be a pointer for future trends and challenges. Below are some of the reasons to support.

Gastrointestinal indications are very common in the patients who are suffering from depression. In psychiatric practice, due to depression, the symptoms of gastrointestinal are observed as functional symptoms. The frequency of functional dyspepsia (FD), irritable bowel syndrome (IBS) and inflammation bowel disease (IBD) are high in gastroenterology. The chronic and regular gastrointestinal symptoms without organic causes are analyzed as functional gastrointestinal diseases (FGIDs). Psychological factors are assumed to play a role in FGIDs through “brain-gut interactions”. Co-morbid Gastrointestinal (GI) inflammation assists humoral resistance to food antigens and exists early throughout the course of schizophrenia and seems to be autonomous from antipsychotic-generated motility effects. The endothelial barrier permeability is affected by this inflammation and it can be precipitated translocation of gut bacteria into complete circulation. The numerous risk factors for the growth of schizophrenia can be associated through a common path in the intestinal tract.

An increased incidence of GI barrier dysfunction, food antigen sensitivity, inflammation, and the metabolic disorders were found in schizophrenia. The composition of the gut microbiota may influence these results [5]. We firstly demonstrated that the Ulcerative colitis-like inflammation in animals causes anxiety and depressive behaviors, as well as constant abdominal distress by exacerbating the impulsive action in the colon-projecting afferent sensory neurons. Variations in the expression of voltage- and ligand gated channels are connected with the introduction of mood disorders succeeding colon inflammation [4]. Chronic IBD /IBS diseases are frequently associated with anxiety and

depression. The two possible sources of these neuropathic disorders are 1) psychological stress induced by determined morbidity of disease affecting the neuronal circuits adjustable anxiety and depression and 2) abnormal afferent signals encouraged by colonic inflammation incoming in the CNS to moderate central neural circuits regulating anxiety and depression. According to many clinical surveys and our studies [4], there is a common comorbidity of between IBS / IBD Patients and depression or anxiety patients as well as seen in animals.

In previous explorative study, people originate that gastrointestinal symptoms are very dominant in current major depressive patients and big ratio of them can be identified as FGIDs. An individual pattern of FGID was also observed. FD frequency is more developed than IBS. Gastrointestinal disorders, such as FD, gastroesophageal reflux disease, and functional constipation, exists in the most of the patients. In a wide variation of extraintestinal comorbidities, fibromyalgia, chronic fatigue syndrome, and chronic pelvic pain are best documented and appear in up to 65% [6]. We also found that the comorbidities of the visceral pain in IBD animals with depression and anxiety [4]. Could this designate a closer association of depression with FD or IBS/IBD? Could this lead us to a better understanding of the brain-gut bi-direction mechanism? Many questions could be raised, but no positive can be provided for now. We call for further clinical and scientific attention of GI doctors and psychiatrists towards this significant topic for the future. Therefore, we welcome the doctors and scientists in gastroenterology field to provide their relative research enriching our mental investigation. It will benefit to understand the interrupted biological paths outside of the brain or gut and will provide appreciated evidence regarding pathogenesis of compound, polygenic brain, or GI disorder. It is also important for the healthcare providers to note that the frequency of depressive/anxiety symptoms is high, and the percentages of suitable treatment in outpatients with IBS like somatic diseases are rather low.

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