Background: Bidirectional relationships between the immune system, nervous system, and psychological processes likely exist in inflammatory bowel disease (IBD) because stress can affect IBD, and IBD is associated with an increased risk of psychological difficulty. The field of psychoneuroimmunology (PNI) sheds light on specific mechanisms that are involved in these relationships, and this research can be applied specifically to IBD. The purpose of this article is to review research on PNI processes in IBD and provide recommendations for future research.

Methods: A literature search was conducted using the PubMed and PsychInfo computerized databases and bibliographies of relevant articles.

Results: The hypothalamic–pituitary–adrenal axis, sympathetic–adrenomedullary system, proinflammatory cytokines, substance P, and mast cells play roles in inflammatory processes in IBD. These processes also respond to stress, and they have been implicated in psychological problems in otherwise healthy individuals. These overlapping processes in inflammation and psychological function have received limited attention in IBD, but preliminary evidence suggests that these mechanisms may play a role in the psychological difficulty experienced by those with IBD.

Conclusions: Several bidirectional PNI mechanisms overlap in IBD, suggesting ways that stress and psychological function can affect disease activity and, conversely, avenues by which the inflammation in IBD may contribute to psychological difficulty. More research on specific PNI processes is needed to fully understand these factors in IBD.

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Key Words: psychoneuroimmunology, inflammatory bowel disease, psychological function