Mind Over Gut: Reviewing the Role of Psychological Intervention in Acid Reflux Management

Johnny-W. Bai, BHSc, MD Candidate[1]

[1] Faculty of Medicine, University of Toronto

Abstract

Gastroesophageal reflux disease (GERD) is a prevalent and burdensome condition, which may result in significant clinical burden and potential serious consequences such as esophagitis and esophageal cancer. Current therapies include lifestyle change, antireflux medications, and surgical treatment. In spite of the availability of excellent pharmacotherapy, many patients suffer from intractable symptoms and a subgroup have been shown to be at higher risk of depression, anxiety and sleep disorders. Patients with mental health co-morbidities can experience more severe GERD symptoms. The bi-directional influence between GERD and mental health warrants the exploration of psychological interventions in reflux management. There is a paucity of large, high-quality trials; however, current literature shows some promise for the addition of psychological interventions to existing therapies. Further studies with well-described interventions are needed to design and implement effective psychological therapies in the treatment of GERD.

Gastroesophageal Reflux Disease

Gastroesophageal reflux disease (GERD) is characterized by a reflux of stomach acid and proteases into the esophagus, leading to symptoms such as heart burn, gastric discomfort, chronic cough, and overall decreased quality of life. The etiology appears to be multifactorial and in part related to reduced lower esophageal sphincter tone, enhanced mucosal sensitivity, increased abdominal pressure (obesity), the presence of hiatus hernia, gastric hypersecretion, poor gut motility and emptying, and poor dietary and lifestyle habits.[1] If untreated, chronic acid exposure may lead to esophagitis, peptic stricture, and Barrett's esophagus, which predisposes patients to an increased risk of esophageal adenocarcinoma. There is poor correlation between clinical reflux symptoms and mucosal injury or complications, posing a challenge regarding the implementation of screening and treatment strategies.[1] Current gold-standard management involves diet and lifestyle changes, acid suppressing pharmacotherapy using H2-blockers, proton pump inhibitors (PPIs), antacids, and surgical therapy for patients with fractory symptoms.[1,2] PPIs, which provide the most effective non-surgical therapy, do not always provide complete relief, incur significant cost as a daily therapy, and are associated with potential side effects such as respiratory and *C.difficile* infections.[2] Evidence demonstrating that GERD is associated with poor psychological outcomes such as anxiety and depression suggests that it may be insufficient to merely target the reflux component of GERD.[3,4] Thus, there may be a role for more holistic and psychosocial management of GERD.

Psychological Comorbidity in GERD

A recently published population study estimates a threefold hazard ratio in the risk of depression, anxiety, and sleep disorders amongst reflux patients.[5] This study assessed new-onset psychological comorbidity in 3813 patients with GERD and 15,252 age- and sex-matched healthy controls. Conversely, evidence suggests that depression and anxiety also leads to increased occurrence and severity of symptoms such as retrosternal pain and "heart burn".[6,7] Kessing et al. assessed anxiety and depression in 255 patients undergoing 24h pH-impedance monitoring, and found that patients with increased anxiety experienced more severe retrosternal pain and burning, without an associated increase in actual number of reflux episodes on monitoring.[6] This suggests that psychological factors may enhance altered perception of reflux of gastric contents. To elucidate physiological mechanisms, animal studies have demonstrated that when mice were introduced to stress through physical-restraints (acute restraint stress), there is increased permeability of their protective esophageal mucosa, resulting in dilated intercellular spaces, enhanced acid exposure to nociceptors and resultant symptoms.[8]

The bi-directional influence of GERD and psychological outcomes suggests a need for complex interventions that target both physiological and psychological comorbidity. Depression and anxiety decrease efficacy of PPI therapy and even antireflux laparoscopic surgery, supporting the addition of a psychosocial component to current GERD therapies.[9,10]

In their pooled analysis of three randomized control trials, Wilkund et al. found that high anxiety, high depression, and low sense of well-being were predictors for poor response to acid suppressing therapy.[9]

Burden of Disease

To appreciate the need for adjunct interventions, it is important to understand the burden of GERD on patients and societies, despite currently available treatments.

Socioeconomic

Approximately 10-20% of Canadians are affected by GERD, with at least 170,000 new diagnoses each year. In 2004, the health care system spent over $50,000,000 for treatment of GERD and associated complications, in addition to further indirect costs such as days taken off work.[11] While the monetary cost of pharmacotherapy per individual patient is not extravagant (~$1000-1500/person-year for PPI or H2-blockers), the high disease prevalence, cost of work absenteeism, limitations to daily activities, and cost incurred because of complications results in high socioeconomic burden of this condition.[12]

Patient Quality of life

Patients with persistent GERD-related symptoms can have significantly lower health-related quality of life. In a systematic review, Tack et al. found that patients with frequent or severe reflux symptoms ("disruptive GERD") have higher rates of work absenteeism, reduced sleep quality, lower physical and mental health, lower sense of well-being, and overall decreased quality of life.[13] Furthermore, there is a high prevalence of patients (19-32%) in whom symptoms persist despite high dose of PPI;[11] this further affects quality of life and highlights the need of additional interventions beyond currently available treatments.

Psychological Interventions for GERD

Given the relationship between GERD and psychological factors, a reasonable strategy would be to implement psychological interventions into current standard antireflux treatments. Evidence in GERD and other functional gastrointestinal disorders shows promise, though there are few high-quality trials to date. Furthermore, a lack of consistency in defining "psychological intervention" in studies makes it challenging to draw strong conclusions and synthesize data.

Regarding pharmacotherapy, one meta-analysis showed that antidepressant medications could successfully improve symptoms of functional gastrointestinal diseases like dyspepsia and irritable bowel disease;[14] however, antidepressants can have psychiatric, metabolic, and cardiovascular side effects which may outweigh potential benefits for GERD. Beyond medications, evidence suggests the possibility of using non-pharmacological psychological interventions to treat reflux. In a randomized controlled trial (RCT), post-antireflux surgery patients received individual therapy sessions with a clinical psychologist, focusing on education about GERD and the antireflux surgery, the role of psychological stress in reflux, and coping strategies such as progressive muscle relaxation and breathing techniques. Compared to controls, these patients had lower reports of subjective dysphagia, less general impairment, and better quality of life, but no change in objective outcomes.[15] Furthermore, a small non-randomized controlled trial in 1994 showed relaxation training to be effective in reducing objective esophageal acid exposure, in addition to subjective reflux symptoms and anxiety.[16] In a larger randomized controlled trial of patients with functional dypepsia, the introduction of brief psychodynamic-interpersonal psychotherapy also improved dyspepsia symptoms over supportive therapy; however, this improvement was not demonstrated 12-month follow-up when reflux patients were included in analysis, thus unlikely a long-term benefit for GERD.[17] Other possibly effective therapies in GERD include hypnotherapy, biofeedback training, and cognitive-behavioural therapy, as identified in a comprehensive review by Mizyed et al. in 2008.[18] Finally, psychological intervention may improve adherence to antireflux medications in GERD, based on literature in patients with diabetes, schizophrenia, bipolar disorder, and other chronic illnesses.[19-21] Although there is a paucity of high-quality and long-term studies, existing literature suggests potential benefit of psycho-pharmaceuticals and various talk-therapies in GERD. Furthermore, these therapies may benefit even patients without apparent clinical depression or anxiety, thereby supporting the benefit of implementing psychological interventions in GERD management.

Discussion

In conclusion, GERD is a serious, disruptive, and costly condition which has a high prevalence in the Western population. Although there are several treatment options, many patients have persistent symptoms and complications related to acid reflux. A growing body of evidence supports the role of psychological interventions to enhance existing GERD therapies in the appropriate subset of patients. These may include various therapies, relaxation training, and anti-depressants, each of which has been shown to have some efficacy in the treatment of reflux symptoms.

Future research is needed to gather more high-quality and long-term data, especially through well-powered randomized controlled trials. Furthermore, there is a need for more clear definitions of "psychological intervention", which includes types of therapies, participants and their baseline psychological status, healthcare providers to deliver the interventions, treatment duration, concurrent GERD therapies used, and objective outcome measures. Standardized descriptions of psychological interventions delivered will allow for the development of meta-analyses. Ultimately, the hope is to design and implement feasible and effective psychological interventions, along with standard antireflux management. The advancement of psychological interventions in GERD management would embody the biopsychosocial model of medicine and hopefully relieve suffering in those with severe and intractable reflux.[22]

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