ADVANCES IN IBS

Current Developments in the Treatment of Irritable Bowel Syndrome

Section Editor: William D. Chey, MD

Integrated Care for Disorders of Gut-Brain Interaction

Chamara Basnayake, MD, PhD
Gastroenterologist and Senior Lecturer
Department of Gastroenterology
St Vincent's Clinical School
University of Melbourne
Melbourne, Australia

G&H What are some of the reasons for poor outcomes in gastroenterologist-only care in the management of patients with disorders of gut-brain interaction?

CB There are many possible reasons for poor outcomes in gastroenterologist-only care for patients with disorders of gut-brain interaction (DGBIs).

One reason for poor outcomes in gastroenterologist-only care is the high prevalence of psychological disorders and psychological comorbidity in patients with DGBIs. The solo gastroenterologist practice often lacks access to a psychologist or gastroenterologists are unable to provide psychological therapies for their patients.

Another major component and part of what drives DGBIs is that patients perceive their symptoms relate to food. Different dietary approaches have been proven to be effective through randomized controlled trials in patients with irritable bowel syndrome (IBS) and in patients with other DGBIs. Examples include the low–fermentable oligosaccharide, disaccharide, monosaccharide, and polyol (FODMAP) diet, developed by Australian researchers, and the National Institute for Health and Care Excellence (NICE) diet from England. Typically, gastroenterologists do not provide dietary advice beyond the initial dietary assessment.

Another component that is often not well recognized is the behavioral and physical challenges patients with DGBIs experience (eg, how they defecate, the timing around their defecation, the mechanics around toileting). A physical therapist can manage toileting behavior for these patients. For instance, patients who have constipation with dyssynergia can be treated with biofeedback. Thus, a gastroenterologist alone is not necessarily equipped to handle many major factors in patients with DGBIs.

G&H How does integrated care for DGBIs differ from the standard of care?

CB The model of care my colleagues and I evaluated in the MANTRA (Multidisciplinary Treatment for Functional Gut Disorders) study might be different from models of integrated care used in other places. In our model, patients always see the gastroenterologist. The gastroenterologist is the one who coordinates and manages care in a clinic where there are also psychiatrists, physical therapists, hypnotherapists, and dietitians. Each provider involved in the care of a patient performs a comprehensive assessment. At the end of the clinic session, all the providers have a team meeting. This is a true multidisciplinary meeting in person to discuss patients and then determine the most appropriate plan for them.

The results of these discussions are more nuanced than perhaps clinical trials can show. The provider-to-patient discussions can be quite valuable. Often patients feel uncomfortable speaking about their major psychosocial disturbances with the gastroenterologist. However, with a psychiatrist, this can be an easier discussion, as it is the focus of the consultation. The psychiatrist is then able to share these important unseen psychological aspects about a patient's condition.

During provider-to-provider discussions, for instance, the physical therapist may highlight a patient

who has rectal hypersensitivity during balloon biofeedback and may ask whether starting a neuromodulator may be helpful. Likewise, the dietitian may identify behaviors that would fit with an eating disorder, and when discussed in the group setting, might change the treatment approach for the patient. These types of discussions allow a better tailored treatment approach from each provider and the team.

Integrated care is different from standard care, where a patient enters the clinic and is seen by the gastroenterologist, who talks to the patient, organizes investigations, and provides treatment (ie, medications and/or dietary therapy). The gastroenterologist may tell a patient to make an appointment with the dietitian, and the patient sees a dietitian somewhere else. The gastroenterologist may have little conversation with that dietitian. The dietitian may not necessarily communicate back after seeing the patient. That type of disjointed standard of care differs significantly from the nuanced, team-based care provided in multidisciplinary clinics. In many instances, other non-gastroenterologist providers are not involved in the care of a patient at all.

> ... the psychological indices in the standard clinic stayed the same or worsened over time, whereas in the multidisciplinary clinic, patient psychological distress decreased over time.

G&H What was the study design of and rationale for the MANTRA study?

CB We hypothesized that standard care for patients with DGBIs was poor. We retrospectively surveyed patients who attended a gastroenterologist-only clinic in our hospital and found that approximately 65% of patients had either the same or worse severity of symptoms more than 12 months after attending this clinic. This finding confirmed our suspicions and was worse than expected—an even stronger impetus for our trial. The rationale for this study rests on the fact that these patients have a multifaceted, complicated disorder; thus, a team that has the skill sets to deal with those various aspects is likely to provide a better result.

The study design was a randomized, controlled trial. All the referrals that came to the hospital clinics went through a particular screening process to determine which patients were likely to have DGBIs. Those individuals were contacted by phone and underwent a further screening process to ensure the likelihood of a DGBI and that there were no red flags such as bleeding or weight loss. During those phone calls, the patients' disorders were categorized and stratified by the Rome IV criteria, and the patients were asked whether they wanted to participate in the trial. Once verbal consent was obtained, they were randomized to either the standard clinic, which included gastroenterologists or colorectal surgeons, or the multidisciplinary clinic, which included gastroenterologists, gastroenterology trainees, and allied clinicians (a dietitian, 2 psychiatrists, 2 behavioral [biofeedback] therapists, and a gut-focused hypnotherapist). The randomization was done externally by an Australian research electronic data capture application. Patients and staff were not blinded to the therapy provided.

The duration of treatment was defined as lasting from the initial consultation to clinical discharge or 9 months. The same questionnaires were administered to all patients at baseline and at the end of treatment, and then repeated 12 months later. These included symptom questionnaires (eg, the Gastrointestinal Symptom Severity Index), quality-of-life questionnaires (Euro-QoL 5D-5L and Short Form 36), psychological well-being questionnaires (Somatic Symptom Scale 8 and Hospital Anxiety and Depression Scale), and a questionnaire to evaluate economic outcomes.

G&H What were the primary outcomes of the MANTRA study?

CB The primary outcome of global symptom improvement was achieved in 84% (82) of 98 patients in the multidisciplinary-care group and 57% (26) of 46 patients in the standard-care group (risk ratio, 1.50 [95% CI, 1.13-1.93]; *P*=.00045), a statistically significant difference favoring the multidisciplinary group. The patients in the multidisciplinary-care group were more likely to rate their symptoms as much better and to have adequate relief of symptoms (a score of 5 on a 5-point Likert scale) than were patients in the standard-care group; 51% in the multidisciplinary clinic vs 28% in the standard clinic. This finding was significantly different. Patients were asked if they had adequate relief of symptoms in the past 7 days. Again, the finding was significantly better in the multidisciplinary clinic than the standard clinic, 83% vs 63%. Looking at the more commonly used symptom scores, in patients with IBS, who comprised the largest group of patients in the clinic, there was a significant difference

between the 2 groups in the 50-point reduction in IBS Severity Scoring System (IBS-SSS) from baseline, 66% in a multidisciplinary clinic vs 38% in the standard clinic.

The psychological indices favored the multidisciplinary clinic but were not significantly different (P=.09). What is important to note is that the psychological indices in the standard clinic stayed the same or worsened over time, whereas in the multidisciplinary clinic, patient psychological distress decreased over time.

The multidisciplinary clinic was more expensive because of the greater number of staff. The median hospital cost per patient was lower in the standard-care group than the multidisciplinary-care group. The difference was approximately 64 Australian dollars (US$44) between multidisciplinary care and standard care. However, the average cost per patient achieving the primary outcome of global symptom improvement was significantly lower in the multidisciplinary group. In addition, an incremental cost-effectiveness ratio indicated that for every 2909 Australian dollars (US$2021) spent in the multidisciplinary clinic, a further quality-adjusted life year was gained. In comparison to the costs of care per patient in pharmaceutical trials in other countries, where usually the threshold is between $20,000 and $30,000, this kind of intervention is very inexpensive in that respect. Moreover, patients in the multidisciplinary group were less likely to see their family practitioner during the study, were less likely to have blood tests performed, and were less likely to have gastroscopies performed outside of the hospital. There are broader economic implications for this model of care.

> Patients with IBS in the multidisciplinary clinic were signifcantly more likely to achieve meaningful IBS-SSS reductions at the end of longer-term follow-up.

G&H What are the long-term outcomes of multidisciplinary integrated care vs standard gastroenterologist-only care?

CB In a longer-term follow-up of patients from the MANTRA study 12 months after the end of treatment, there was not a statistically significant difference in the main primary outcome, the global symptom of improvement; however, this was achieved in a greater proportion of patients in the multidisciplinary clinic. The number of patients who regarded themselves as "much better" (5/5 on the Likert scale) was significantly higher in the multidisciplinary clinic than in the standard-care clinic. Patients with IBS in the multidisciplinary clinic were significantly more likely to achieve meaningful IBS-SSS reductions at the end of longer-term follow-up. While the difference in the psychological state measures between the 2 clinics at the end of follow-up was not significant, there was a significant psychological improvement in patients managed in the multidisciplinary clinic compared with baseline. Patients in the multidisciplinary clinic were significantly less likely to visit their family practitioner and were less likely to have tests performed, compared with patients in the standard-care clinic.

G&H What are some of the advantages and disadvantages to the MANTRA study?

CB The MANTRA study proved what we strongly suspected about integrated care. Its advantage is that it is comprehensive. Often, clinical trials focus solely on very specific symptom outcomes. A comprehensive approach that addresses psychological, economic, and quality-of-life aspects as well as symptoms is better. It is more reflective of how patients are treated in practice. The challenge of the study is how to execute this model of integrated care and determine who funds it, whether it is the patient, a health care provider, or government. The integrated model also requires having therapists who are available and interested in assisting the gastroenterologist in providing this care.

G&H What is the ideal way to provide integrated care?

CB In addition to having the staff and the necessary funding, the ideal way to provide integrated care is likely a model in which the clinicians are co-located in the same clinic and have an ability to communicate with each other in a multidisciplinary forum. Most importantly, all the providers are communicating on all the different nuances about a patient and working as a team to treat the patient, rather than simply having these clinicians and no such discussion. This communication is critical to providing optimal integrated care for patients with DGBIs. In our experience with a clinic like this, we found the need for more therapists and fewer gastroenterologists, which is counterintuitive. Ideally, integrated care requires the right balance of gastroenterologists and therapists that can provide the care in a timely fashion.

G&H What are some of the practical implications of the MANTRA study results for real-life practice?

CB In an ideal world, integrated clinics would operate in all hospitals to provide optimal care for patients with DGBIs. This may not be possible for various reasons.

For sole practitioners and perhaps those who work in remote or rural areas, with limited access to therapists available to join their practice, implementing integrated care can be challenging. A possible practical solution could be establishing a network of therapists/providers that they can refer to and a guideline for clear communication. If necessary, having team meetings, whether virtual or in person, about their complex patients with DGBIs is important.

In the hospital environment, there must be a willingness among providers to set up an integrated care clinic, and then it is important that leaders are selected within the hospital to properly manage the clinic, the team members, and the multidisciplinary forum to discuss patients.

There is value in establishing clinics like this, beyond the benefits for patients. For example, it can greatly improve training for future gastroenterologists. We incorporate gastroenterology trainees/fellows within our clinic for learning. We frequently find that meeting and discussing patients with a physical therapist, psychiatrist, or dietitian opens up a wealth of knowledge and different perspectives that would otherwise not have been accessible during regular gastroenterology training. This could improve the training profile of gastroenterology units, as we feel it has at our hospital.

Disclosures

Dr Basnayake has no relevant conflicts of interest to disclose.

Suggested Reading

Basnayake C, Kamm MA, Salzberg M, et al. Outcome of hospital outpatient treatment of functional gastrointestinal disorders. *Intern Med J*. 2019;49(2):225-231.

Basnayake C, Kamm MA, Salzberg MR, Wilson-O'Brien A, Stanley A, Thompson AJ. Delivery of care for functional gastrointestinal disorders: a systematic review. *J Gastroenterol Hepatol*. 2020;35(2):204-210.

Basnayake C, Kamm MA, Stanley A, et al. Long-term outcome of multidisciplinary versus standard gastroenterologist care for functional gastrointestinal disorders: a randomized trial. *Clin Gastroenterol Hepatol*. 2022;20(9):2102-2111.e9.

Basnayake C, Kamm MA, Stanley A, et al. Standard gastroenterologist versus multidisciplinary treatment for functional gastrointestinal disorders (MANTRA): an open-label, single-center, randomized controlled trial. *Lancet Clin Gastroenterol Hepatol*. 2020;5(10):890-899.

Chey WD, Tack J. The role of food in disorders of gut-brain interaction: introduction to a Rome Foundation Working Group Series. *Am J Gastroenterol*. 2022;117(6):935-936.

Madva EN, Staller K, Huffman JC, et al. Psychiatric comorbidities among adult patients with disorders of gut-brain interaction: prevalence and relationships to treatment outcomes [published online November 13, 2022]. *Neurogastroenterol Motil*. doi:10.1111/nmo.14493.

McCabe C, Claxton K, Culyer AJ. The NICE cost-effectiveness threshold: what it is and what that means. *PharmacoEconomics*. 2008;26(9):733-744.

Patcharatrakul T, Valestin J, Schmeltz A, Schulze K, Rao SSC. Factors associated with response to biofeedback therapy for dyssynergic defecation. *Clin Gastroenterol Hepatol*. 2018;16(5):715-721.