

Cognitive-behavioural therapy for children with irritable bowel syndrome

Ashley Buffone Ran D. Goldman MD FRCPC

Abstract

Question A child with irritable bowel syndrome (IBS) presented to the clinic with a chief concern of ongoing gastrointestinal symptoms. The parents reported no improvement despite dietary modifications and are not interested in any medications. Is cognitive-behavioural therapy (CBT) an effective treatment for IBS in children?

Answer Traditional CBT and its subtypes, including Internet-based CBT and gut-directed hypnotherapy, are more effective in reducing pain and gastrointestinal symptoms in children and adolescents with IBS compared with standard treatment or no treatment. This therapy should be recommended to patients and parents.

Irritable bowel syndrome (IBS) is the most prevalent pain-predominant functional gastrointestinal (GI) disorder in children, affecting between 4.9% and 5.4% of school-aged children and 8% of adolescents worldwide.^{1,2} Other functional GI disorders include abdominal pain, dyspepsia, and abdominal migraines.² Irritable bowel syndrome is a long-standing condition that negatively impacts a child's daily activities and quality of life, and can often persist into adulthood.^{1,3} It accounts for more than 25% of all emergency consultations for pediatric abdominal pain, and yet, for most children, there is no identifiable organic cause.² The condition is diagnosed using the Rome IV criteria and is defined by abdominal pain at least once weekly over a minimum of 3 consecutive months, in addition to 2 of the following criteria: pain related to defecation, change in stool frequency, and change in stool appearance.^{4,5} Other symptoms of IBS include nausea, vomiting, headaches, anorexia, and arthralgia. Comorbidities often seen in children and adolescents with IBS include anxiety and depression.³

The pathophysiology for IBS is not well understood. Current literature suggests a multifactorial pathogenesis consisting of brain-gut axis dysregulation, GI autonomic nervous system abnormalities, some intestinal inflammation, increased bowel sensitivity, decreased pain thresholds, and psychological factors such as stress and anxiety.³

Treatment options

Despite the prevalence of IBS, there is no definitive treatment and care is centred around symptom management.³ Main treatments include dietary changes, pharmacologic treatment, probiotic supplementation, and cognitive-behavioural therapy (CBT). First-line pharmacotherapy includes amitriptyline, a tricyclic antidepressant; however, its efficacy in IBS treatment for the pediatric population has not been widely studied.⁶ Available literature suggests that amitriptyline has a significant effect on the adolescent population. In a study of adolescents aged 12 to 18 years randomized

to either amitriptyline or placebo, after 6 and 10 weeks, respectively, adolescents taking amitriptyline reported better quality of life ($P=.19$ and $P<.005$, respectively) and decreased IBS-related diarrhea ($P=.29$).⁶ However, there is no reported significant effect of amitriptyline on reducing IBS symptoms in school-aged children.⁷ Furthermore, nonpharmacologic treatment options are often accepted by parents and children to avoid medication side effects.⁴

Nonpharmacologic treatments for IBS mostly include using the *Lactobacillus* genus, which has been shown in 2 studies with small sample sizes to be effective in reducing pain.^{8,9} In a study of 37 children, treatment with *Lactobacillus* was associated with elimination of pain compared with placebo (33% vs 5%, respectively; number need to treat=4; 95% CI 2 to 36).⁸ Among 141 children treated with either *Lactobacillus rhamnosus* GG or placebo for 8 weeks, *L. rhamnosus* GG was associated with reduction of frequency ($P<.01$) and severity ($P<.01$) of abdominal pain, even after another 8 weeks of follow-up ($P<.02$ and $P<.001$, respectively).⁹ However, more research is needed.¹⁰

There is some weak evidence supporting dietary modifications, such as increasing fibre intake, as monotherapy.^{3,11}

Cognitive-behavioural therapy

Cognitive-behavioural therapy is a psychotherapeutic treatment focusing primarily on providing psychological support by addressing maladaptive behaviour, negative emotions, and reactions to distress. This is done by participating in a series of goal-oriented procedures focused on refining cognitive processes surrounding the impact of a patient's condition on their quality of life and by teaching stress reduction techniques for symptom management.⁴ In the treatment of IBS, psychologists use CBT to target functional improvement and lifestyle adaptation instead of exclusively focusing on pain.^{3,4,7}

A Cochrane systematic review analyzed the effectiveness of CBT for symptom management of IBS in school-aged

children by comparing children receiving standard care with those on a waitlist as control.² The CBT consisted of weekly sessions with children and parents and addressed techniques for episodic symptom management, coping skills such as deep breathing exercises, distractions, and relapse prevention training. These sessions provided parents and children with verbal and written instructions for implementation between sessions. Standard pediatric care included weekly appointments with the child's primary care provider and mainly consisted of follow-ups and assessment of the child's nutrition.² The results of 5 of 6 studies (total of 167 children aged 5 to 18 years old) suggested an improvement in pain scores among children receiving CBT compared with the 2 control groups. More specifically, in a study comparing CBT with standard pediatric care, there was an 86.7% decrease in abdominal pain frequency after 1 month of CBT (2 episodes of abdominal pain per month 1 month after treatment compared with 15 episodes per month before treatment) compared with a 33.3% decrease in the control group (8 episodes of abdominal pain per month compared with 12 episodes) ($P=.001$).¹² Sanders et al reported that among 38 children in a CBT group (children completed a pain journal and parents reported their observations), 66.7% of children were pain free after 6 months compared with 27.8% of those being treated by standard care.¹³ In another study, 6 out of 8 (75%) children receiving CBT reported being pain free compared with only 2 out of 8 (25%) children in the waitlist control group (odds ratio=9.00 after treatment and 11.67 at 3 months' follow-up).¹⁴

Internet-based CBT


Internet-based CBT primarily uses exposure-based treatment strategies.¹⁵ In the context of IBS, this strategy emphasizes exposure to GI symptoms and GI-related anxiety to reduce avoidance behaviour.¹ Internet-based CBT is an effective treatment for adults with IBS and was therefore studied in school-aged children and adolescents.¹⁶ Among 101 adolescents aged 13 to 17 years, those receiving Internet-based CBT reported a greater decrease in GI symptoms as measured by the Gastrointestinal Symptom Rating Scale (GSRS-IBS) after 10 weeks of treatment compared with a waitlist control group (GSRS-IBS score decrease of 6.42 points in the Internet-based CBT group; $P<.005$, effect size Cohen $d=0.45$; 95% CI 0.12 to 0.77).¹⁶ It has been shown that avoidance behaviour accounts for 67% of the effect of Internet-based CBT on decreasing GI symptoms in adolescents.¹ This may be explained by the increased prevalence of avoidance behaviour in adolescents with IBS compared with school-aged children with IBS.¹⁶ The reported decrease in avoidance is concordant with the adolescents' perceived decreases in anxiety and increased positive perceptions of quality of life.^{1,13,17} Furthermore, in a meta-analysis comparing Internet-based CBT to mindfulness-based therapy, standard care, and waitlist control, 3 out of 5 studies suggested that

the online treatment was more effective in decreasing IBS symptom severity, with a pooled mean difference of -9.63 points on the GSRS-IBS for the Internet-based CBT group compared with the control groups ($P<.005$; 95% CI -16.8 to -3.08).¹⁸ Adolescents reported a preference for Internet-based CBT over traditional in-office CBT.¹⁶ Other advantages of this online treatment include increased access to treatment in remote areas and decreased absences from school and work.^{3,17}

Gut-directed hypnotherapy

Gut-directed hypnotherapy is a type of CBT that has been shown to reduce pain in children with IBS.^{7,19} Among 49 participants, 68% of those receiving year-long gut-directed hypnotherapy were in remission (80% or more improvement in pain scores) compared with 20% of those receiving standard pediatric care ($P=.005$); pain frequency also decreased ($P<.01$).²⁰ Long-term (5 years) outcomes included reduced GI symptom severity ($P<.005$).²⁰ Gut-directed hypnotherapy can either be administered by a qualified psychologist or therapist, or through self-led exercises with the use of recorded audio; outcomes are similar.^{7,19}

Conclusion

Irritable bowel syndrome is the most common pediatric pain-predominant functional GI disorder. Traditional CBT and its subtypes, including Internet-based CBT and gut-directed hypnotherapy, are more effective in treating IBS in children compared with other standard treatments. Cognitive-behavioural therapy should therefore be discussed with patients and their families as a viable treatment option for pediatric IBS. 

Competing interests

None declared

Correspondence

Dr Ran D. Goldman; e-mail rgoldman@cw.bc.ca

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