

# A Patient-Centered Approach to Managing IBS-C and CIC

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doi: 10.12788/jfp.0514

## CONTINUING MEDICAL EDUCATION

### LEARNING OBJECTIVES

At the end of the activity, participants will be able to:

- Implement a staged strategy for the diagnostic evaluation of irritable bowel syndrome with constipation (IBS-C) and chronic idiopathic constipation (CIC) based on history and physical examination, including the Rome IV criteria.
- Discuss the evidence and guideline recommendations for self-care as well as over-the-counter (OTC) and prescription therapies to treat IBS-C and CIC.
- Individualize treatment for IBS-C and CIC emphasizing patient-centered care to address patient concerns, improve outcomes, and enhance quality of life.

### KEY TAKEAWAYS

- Most patients with IBS-C or CIC do not seek medical care and few patients use appropriate therapies to control symptoms.
- By establishing a positive patient-provider relationship, primary care practitioners can encourage a more open discussion of bowel symptoms.
- The diagnosis of IBS-C and CIC is based on the Rome IV criteria, which differentiates the 2 conditions by small variations in symptom presentation.
- Effective treatment of IBS-C and CIC, can involve nonpharmacologic interventions, OTC medications, and prescription medications.
- For treating IBS-C, the American Gastroenterological Association (AGA) strongly recommends linaclotide and conditionally suggests tenapanor, plecanatide, lubiprostone, tricyclic antidepressants, polyethylene glycol laxatives, and antispasmodics.
- Treatment selection should address the patient's primary complaints and help them achieve their treatment goals.

### TARGET AUDIENCE

Family physicians (FPs), general internal medicine physicians, and other primary care practitioners.

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### ACKNOWLEDGMENT

Editorial support was provided by Austin Ulrich, PharmD, BCACP, of the Primary Care Education Consortium.

### SUPPORTER

This article is supported by an educational grant from Takeda Pharmaceuticals U.S.A., Inc.

## INTRODUCTION

Irritable bowel syndrome with constipation (IBS-C) and chronic idiopathic constipation (CIC) are similar, but distinct, gut-brain disorders with overlapping symptoms. IBS-C can be defined as recurrent abdominal pain accompanied by a change in defecation, with constipation as the prevailing stool pattern.<sup>1</sup> CIC, also known as functional constipation, is generally diagnosed after excluding IBS-C.<sup>1</sup> CIC can be described as the presence of straining or incomplete evacuation, which can be accompanied by bloating or abdominal pain or discomfort, in patients who do not meet criteria for IBS-C.<sup>1</sup> Both IBS-C and CIC are defined by the Rome IV criteria (**TABLE 1**).<sup>1,2</sup>

IBS-C and CIC both cause a significant health burden to individuals and society. Approximately 4.1% of the global population is affected by irritable bowel syndrome (IBS), and about one-third of IBS patients are classified as having IBS-C.<sup>3</sup> Notably, this may underestimate the true prevalence, since the Rome IV criteria likely define a more severe population of patients with IBS than previous definitions.<sup>1</sup> The estimated global prevalence of IBS-C is 1.3%, and CIC is estimated to affect 11.7% patients worldwide.<sup>3</sup> These conditions pose a significant economic impact to the healthcare system, as patients with IBS-C and CIC have a significantly higher use of outpatient services, diagnostics, and imaging.<sup>4</sup> The total annual constipation-related healthcare costs in the United States are estimated to be more than \$230 million per year.<sup>5</sup>

Both disorders of chronic constipation disrupt normal physiologic functioning of the gut. IBS-C can have multiple possible mechanisms, including altered motility, abnormal gut-brain interaction, bacterial overgrowth, carbohydrate malabsorption, and intestinal inflammation.<sup>6</sup> The pathophysiology of CIC remains unclear, but disruption of peristaltic activity and fluid secretion play a role in some patients.<sup>7</sup> IBS-C and CIC significantly impair patients' quality of life; the most bothersome symptoms are difficult bowel movements, bloating, and abdominal discomfort and pain.<sup>5</sup>

## THE ROLE OF THE PRIMARY CARE PRACTITIONER

Despite the significant health burden of IBS-C and CIC, few patients use appropriate medications to control symptoms, though about 48% take medications to manage constipation.<sup>8</sup> Additionally, most patients with constipation do not seek medical care. Of those who do report using medication to help with constipation, 94% take over-the-counter (OTC) treatments, 1% take prescription medications, and 5% take a combination of OTC and prescription therapies.<sup>8</sup> Primary care practitioners (PCPs) are well positioned to establish a healthy patient-provider relationship that can be instrumental in effectively treating IBS-C and CIC.

**TABLE 1. Rome IV diagnostic criteria for IBS-C and CIC<sup>1,2</sup>**

IBS-C	<p>Recurrent abdominal pain, on average, <math>\geq 1</math> day per week in the last 3 months, associated with <math>\geq 2</math> of the following:</p> <ul style="list-style-type: none"> <li>• Related to defecation</li> <li>• Change in frequency of stool</li> <li>• Change in form (appearance of stool)</li> </ul> <p>Hard/lumpy stools <math>\geq 25\%</math> Loose/watery stools <math>&lt; 25\%</math></p>
CIC	<p>Must include <math>\geq 2</math> of the following:</p> <ul style="list-style-type: none"> <li>• Straining</li> <li>• Lumpy or hard stools (Bristol Stool Form Scale 1-2)</li> <li>• Sensation of incomplete evacuation</li> <li>• Sensation of anorectal obstruction/blockage</li> <li>• Manual maneuvers to facilitate <math>&gt; 25\%</math> of defecations</li> </ul> <p><math>&lt; 3</math> spontaneous bowel movements per week</p>

Self-reporting of history and symptoms is essential to a correct diagnosis and determining a therapeutic response for IBS-C and CIC.<sup>9</sup> Symptom reporting is influenced by age, sex, and health literacy level, and a negative patient-clinician relationship and dissatisfaction with the care plan can result in worse outcomes.<sup>9</sup> As PCPs build relationships with their patients over time, it is natural to adopt an individualized, patient-centered communication style that ultimately benefits disease management of both IBS-C and CIC. Additionally, implementing a personalized approach to treatment allows the patient to help choose a treatment that aligns with their preferences and goals and addresses their concerns.

As part of a patient-centered approach, clinicians should be aware of potential differences in perceptions about symptom control. The BURDEN IBS-C and BURDEN-CIC studies evaluated differences between patients' and clinicians' perceptions about disorders of chronic constipation.<sup>10,11</sup> Overall, these studies found that, compared to clinicians, patients reported greater acceptance, less frustration and obsession, and better control of IBS-C or CIC symptoms. This may indicate that patients tend to have a more positive outlook on their constipation symptoms than clinicians, and clinicians should recognize this possibility when managing patients with IBS-C or CIC.

It is also important to consider differences in emotional burden and symptoms; women are more likely to report shame and embarrassment associated with their bowel habits than men.<sup>5</sup> Additionally, women report more abdominal

bloating and distension than men.<sup>5</sup> Concomitantly managing comorbid conditions can be challenging and highlights the need for individualized therapy. In IBS-C, functional dyspepsia and depression are common comorbidities.<sup>12</sup> In CIC, functional dyspepsia, diabetes, and depression are commonly comorbid.<sup>12</sup> Overall, clinicians should utilize a patient-centered approach for managing IBS-C and CIC while accounting for demographic and cultural differences, comorbidities, and available therapies.<sup>5</sup>

### CASE SCENARIO

LY is a 38-year-old female being seen for routine follow-up in her PCP's office for migraine headaches. History and physical examination show her migraines are infrequent and generally well controlled with a triptan. During her visit, she appears to be in some abdominal distress and mentions she's had trouble with constipation lately.

Upon further questioning, LY reveals that she has been too embarrassed to bring up her constipation problems before. She explains that she is able to defecate about twice a week, these bowel movements only occur with straining, and the result is lumpy, hard stools. She denies significant abdominal pain.

### DIAGNOSTIC EVALUATION FOR IBS-C AND CIC

Although IBS-C and CIC are separate diagnoses, they share many common symptoms, including abdominal discomfort, difficulty with defecation, bloating, and abdominal distension.<sup>5</sup> Symptoms of functional bowel disorders exist along a spectrum, and patients with constipation can fluctuate between IBS-C and CIC (FIGURE 1).<sup>5</sup> Due to this overlap and symptom fluctuation, it can be challenging to establish a diagnosis of either IBS-C or CIC, especially at the first visit. Ultimately, selecting a single diagnosis may be less important than initiating effective treatment to alleviate patients' symptoms, especially given the overlap of these 2 conditions.<sup>5</sup>

To proceed with a diagnostic workup of IBS-C and CIC, clinicians can use an algorithm incorporating components such as a thorough medical history, physical examination, and the Rome IV criteria (FIGURE 2).<sup>13</sup> The presence of abdominal or bowel symptoms can present in a variety of ways, including pain, discomfort, bloating, distension, constipation, straining, incomplete evacuation, and manual maneuvers to help defecation.<sup>14</sup> After discussing the presenting symptoms, a thorough patient assessment should be performed, which should include a careful symptom history, identification of comorbidities, a review of previous investiga-

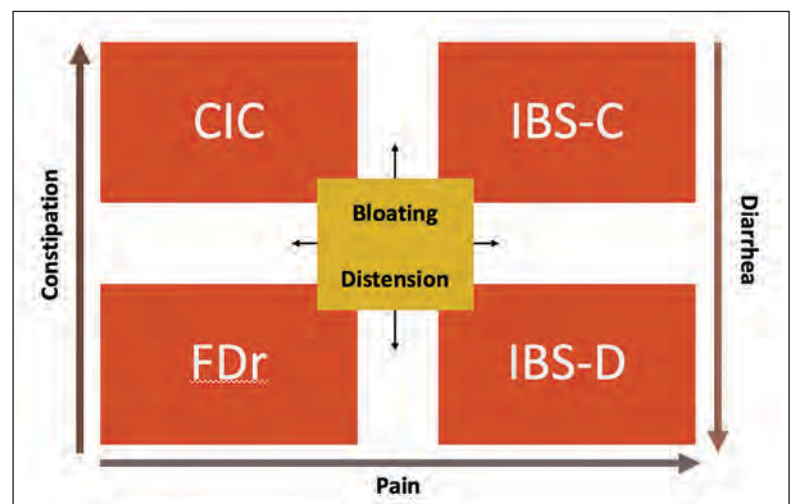
tions and treatments, and a thorough physical examination.<sup>14</sup> A digital rectal examination can be helpful to investigate the possibility of a pelvic floor disorder contributing to constipation symptoms.<sup>2</sup> Routine laboratory testing such as a metabolic panel, thyroid-stimulating hormone (TSH), and complete blood count may be performed.

Once a diagnosis is suspected, PCPs should assess for alarm features, which, if present, may necessitate further diagnostic workup or referral.<sup>14</sup> An abnormal physical exam finding or intolerance or lack of response to standard treatment can also be indications for referral.<sup>15</sup> Alarm features include<sup>13</sup>:

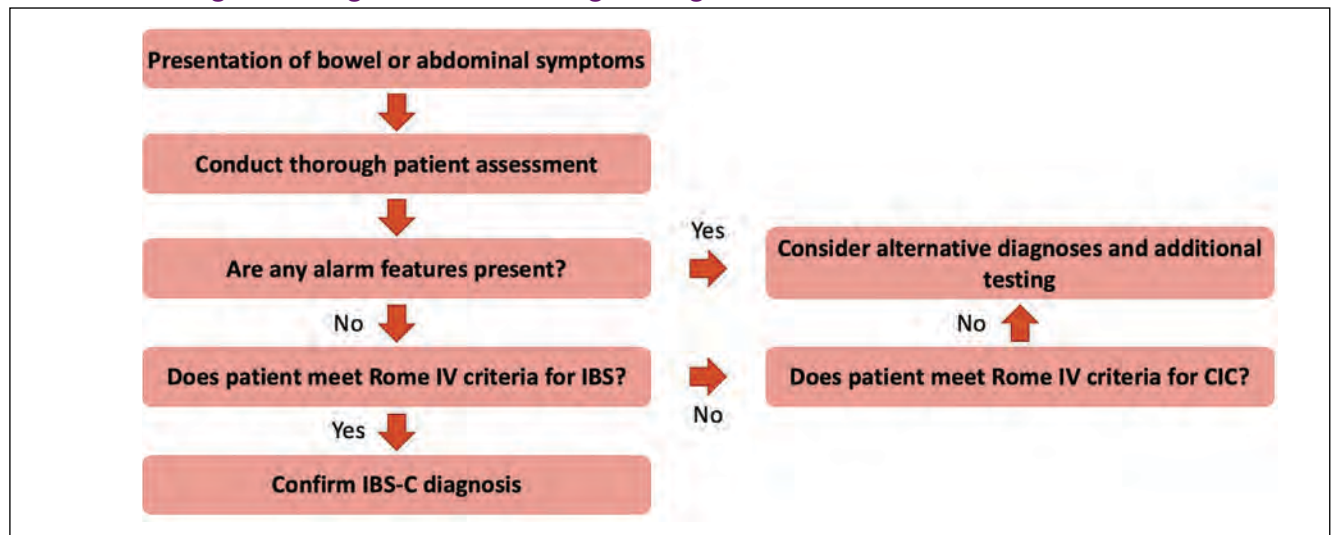
- Age >45 without prior colon cancer screening
- Overt gastrointestinal bleeding
- Nocturnal stool passage
- Recent change in bowel habits
- Anemia
- Fever
- Unintentional weight loss
- Family history of celiac disease, colon cancer, or inflammatory bowel disease
- Palpable lymphadenopathy, ascites, or an abdominal mass
- Recent antibiotic use

If alarm symptoms are absent, the next step is to identify whether the patient's presentation meets Rome IV criteria for IBS (TABLE 1). If so, and if symptomatology is consistent with constipation, a diagnosis of IBS-C can be established at the time of the first visit. If the patient's presentation does not meet Rome IV criteria for IBS, the next step is to determine whether the presentation meets Rome IV criteria for

**FIGURE 1. Continuum of gut-brain disorders with primarily abdominal symptoms<sup>1</sup>**



**Abbreviations:** FDr, functional diarrhea; IBS-D, irritable bowel syndrome with diarrhea.

**FIGURE 2. Diagnostic algorithm for distinguishing IBS-C and CIC<sup>14</sup>**

CIC (TABLE 1). If so, a CIC diagnosis can be confirmed. If not, further testing and alternative diagnosis and/or referral to a specialist may be necessary. Further testing might include celiac serologies, C-reactive protein, fecal calprotectin, thyroid-stimulating hormone (TSH), serum calcium, and colonoscopy, depending upon the patient's symptoms, history, review of symptoms, and physical exam findings.<sup>13,14</sup>

In the patient case scenario above, the patient meets at least 2 of the Rome IV criteria for CIC (straining, lumpy or hard stools, <3 spontaneous bowel movements per week). Her presentation is also not consistent with the Rome IV criteria for IBS-C, given the absence of recurrent abdominal pain, so the PCP should consider a diagnosis of CIC.

### TREATMENT OF IBS-C AND CIC

Treatment goals for IBS-C and CIC should target improvement in global symptoms and overall severity, and individualized treatment plans should educate and encourage self-management as part of a patient-centered approach.<sup>9</sup> Therapeutic intervention should be selected based on the patient's primary complaints. Nonpharmacologic, OTC, and prescription treatments can be effective for treating both IBS-C and CIC (FIGURE 3).

#### Nonpharmacologic interventions

Nonpharmacologic therapy to improve symptoms in IBS-C and CIC primarily focuses on lifestyle adjustment. Effective interventions can include exercise, stress reduction, adequate hydration, improving sleep, maintaining a routine bathroom schedule, a diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAP), and eliminating medications that can cause or worsen

constipation (opioids, iron or calcium supplements, anticholinergics, etc.).<sup>1,14</sup>

Implementing a low-FODMAP diet can be effective but also challenging for the patient. Multiple studies support the use of a low-FODMAP diet to treat symptoms of IBS.<sup>16,17</sup> However, since the diet consists primarily of excluding certain grains, fruits, and vegetables, the diet is complex and difficult to adhere to. It can also worsen constipation if fiber sources are not replaced with alternatives. Involving a nutritionist is strongly recommended to properly implement a low-FODMAP diet.<sup>17</sup>

#### OTC agents

OTC medications to treat IBS-C and CIC include fiber (psyllium, polycarbophil), stimulant laxatives (bisacodyl, sennosides), osmotic laxatives (polyethylene glycol, lactitol), and anionic surfactants (stool softeners such as docusate).<sup>2,18</sup> A systematic review of 41 studies identified good evidence for treating chronic constipation with polyethylene glycol and sennosides, which may be more effective than other OTC agents.<sup>19</sup> However, the overall quality of evidence supporting OTC agents is relatively low. Regardless, due to ease of access, many patients initially prefer to use these treatments.

OTC treatments can improve stool consistency and frequency but do not improve pain or global symptoms.<sup>2</sup> This is worth mentioning to patients, as abdominal pain is the most common reason patients seek medical advice. Adverse events of OTC agents include abdominal pain, diarrhea, nausea, flatulence, vomiting, and electrolyte imbalances.<sup>2,18</sup>

#### Prescription medications

US Food and Drug Administration (FDA)-approved prescription therapies for IBS-C and CIC include prosecretory agents,



serotonin 5-HT<sub>4</sub> receptor agonists, and a sodium-hydrogen exchanger isoform 3 (NHE3) inhibitor.<sup>2,13,18</sup> Antidepressants such as selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs) have been studied and are sometimes recommended for treatment, although this constitutes off-label use.<sup>20</sup> The American Gastroenterological Association (AGA) has provided recommendations for the use of certain prescription and OTC medications for IBS-C in their 2022 guideline (TABLE 2).<sup>21</sup> This guideline strongly recommends using linaclotide for IBS-C and conditionally suggests use of other agents for IBS-C such as tenapanor, plecanatide, lubiprostone, TCAs, polyethylene glycol laxatives, and antispasmodics.

**Prosecretory agents.** Lubiprostone, linaclotide, and plecanatide are secretagogues that act on chloride channels to increase luminal fluid content.<sup>22</sup> These agents have overall good evidence for use in IBS-C and CIC.<sup>2</sup> Lubiprostone is approved for CIC and for women with IBS-C (but not men); linaclotide and plecanatide are approved for IBS-C and CIC.<sup>18</sup>

**Serotonin 5-HT<sub>4</sub> receptor agonists.** Prucalopride and tegaserod are prokinetic agents that act on 5-HT<sub>4</sub> receptors in the gut to help initiate peristaltic reflex, resulting in decreased colonic transit time and improved bowel movement frequency.<sup>2,23</sup> Prucalopride is approved for CIC and tegaserod is approved for IBS-C in women <65 years of age without a history of cardiovascular ischemic events.<sup>18</sup> **Note:** tegaserod was withdrawn from the market as of June 30, 2022 as a business

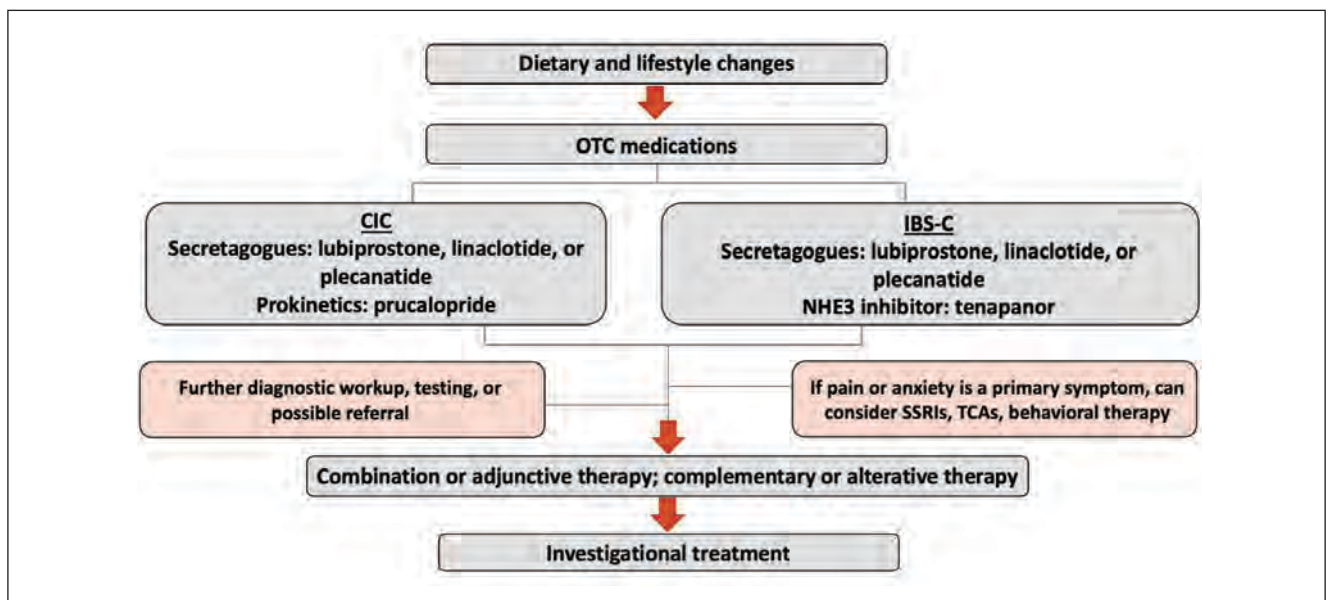
decision and not due to concerns about efficacy, safety, or a product recall.

**NHE3 inhibitors.** Tenapanor is a type of secretagogue that increases luminal content by blocking the sodium-hydrogen exchanger on the epithelial surface and is approved for IBS-C.<sup>18,24</sup>

Clinicians considering initiating pharmacologic therapy might consider the following when making a treatment selection<sup>25</sup>:

- Patients often self-treat with OTC remedies prior to seeking medical care
  - Perceived failure of OTC therapies can be a turning point for patients to seek medical care and potentially escalate to prescription treatment
- Prescription agents are generally regarded by certain experts as interchangeable, with optimal treatment determined after trial and error<sup>25</sup>
  - No agent has demonstrated comparative superiority due to lack of head-to-head comparisons
  - However, in a meta-analysis comparing secretagogues, linaclotide 290 mcg daily was numerically superior for symptom control<sup>26</sup>
- Ideally, symptoms are managed with prescription agent monotherapy, but some patients may require combination therapy for complete symptom resolution
- The time course of treatment response can be variable

**FIGURE 3. Treatment algorithm for IBS-C and CIC<sup>25</sup>**



**Abbreviations:** NHE3, sodium-hydrogen exchanger isoform 3.

**TABLE 2. AGA recommendations and strength of evidence for medications to treat IBS-C<sup>21</sup>**

Medication	Strength of recommendation	Certainty of evidence
Tenapanor	Conditional	Moderate
Plecanatide	Conditional	Moderate
Linaclotide	Strong	High
Lubiprostone	Conditional	Moderate
Polyethylene glycol laxatives	Conditional	Low
TCAs	Conditional	Low
Antispasmodics	Conditional	Low

- Stool frequency tends to improve in hours to days, while pain, discomfort, and bloating can last many weeks before some patients notice benefit

**CASE SCENARIO (CONT'D)**

LY admits she’s been using OTC laxatives and stool softeners “on and off” recently and she would be interested in a prescription medication “if there’s one that can help.”

In this scenario, the patient should be educated about lifestyle changes that can help her symptoms. The PCP might consider prescribing a secretagogue or prokinetic agent with demonstrated benefit in CIC, and the choice of agent should be consistent with the patient’s treatment goals and clinical characteristics.

**SUMMARY**

IBS-C and CIC cause significant health burden for patients, who are frequently not appropriately treated for their symptoms. PCPs are positioned to build strong patient-provider relationships to help patients feel comfortable disclosing information related to bowel habits, which is essential to diagnosing and monitoring chronic constipation. Clinicians should implement a systematic approach for diagnosis and treatment that incorporates patients’ characteristics, needs, and treatment goals. ●

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