Nutritional Interventions in Chronic Intestinal Pseudoobstruction

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KEYWORDS

• Chronic intestinal pseudo-obstruction • Gastrointestinal dysmotility
• Venting gastrostomy • Cecostomy • Parenteral nutrition • Intestinal transplant

KEY POINTS

- Chronic intestinal pseudo-obstruction is a rare disorder; its spectrum of disease ranges from abdominal bloating to severe gastrointestinal dysfunction.
- Goals should be to improve motility, when possible, and provide sufficient hydration and nutrition, orally, enterally, and/or parenterally.
- It is important to screen patients for nutrient deficiencies, especially if there is either chronic poor intake or evidence of malabsorption.
- Intestinal transplant is an option when all other conservative measures fail.

INTRODUCTION

Chronic intestinal pseudo-obstruction (CIPO) is a rare disorder that is characterized by the simulation of mechanical obstruction of either the small or large bowel when no anatomic explanation can be found. It is a motility disorder that is associated with dilation that differentiates itself from the small bowel disorder of chronic intestinal dysmotility or the colonic entities of slow transit constipation and colonic inertia.[1] Although etiologies can involve myopathic, neuropathic, or intestinal cells of Cajal, they can be primary or secondary to another disease or idiopathic. Further discussion of the etiology or the diagnostic work up are beyond the scope of this article. CIPO can also occur in both pediatric and adult patients; however, most of the comments will be concentrated on the adult population.

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CLINICAL MANIFESTATIONS

The most common symptoms include abdominal pain and distension with high associations of nausea, vomiting, and constipation.[2–4] Because of the nonspecific nature of these symptoms, delays in diagnosis with significant testing and/or unneeded surgery are common. Diarrhea may be seen in up to 20% of patients, but is usually seen with small intestinal bacterial overgrowth or in patients who have undergone surgical resections resulting in short bowel syndrome. Abdominal pain and distension are worse during exacerbations, which may wax and wane or in the most severely affected may be a more chronic feature.[4] The normal provision of nutrition may be difficult, because eating may be associated with worsening symptoms that then results in food avoidance. The most difficult issue is the unpredictable nature of acute and intermittent exacerbations that have no detectable causation and vary widely from patient to patient.[5] This wide spectrum of disease can result in delays in action on the physician's part and can contribute to the worsening of nutritional status, which clinicians should strive to prevent.

MEDICAL AND NUTRITIONAL THERAPIES

Joly and colleagues[6] have nicely summarized the 2 main goals in treating CIPO as follows: "(1) improvement of intestinal propulsion and (2) maintenance of adequate nutritional status including fluid and mineral balances." These 2 goals are very much interrelated, as improvement in motility may allow oral or a form of enteral therapy, whereas failure to improve the GI motility and symptoms may preclude the use of the gastrointestinal (GI) tract for feeding and necessitate the need for parenteral nutrition (PN) with the possibility of intestinal transplantation in some.

Medications and Other Therapies

Medications are often the first treatment attempted to try to ameliorate symptoms and improve nutritional intake. However, there are few true motility medications that are available for use in the United States. **Table 1** lists the medications that have been used, but many have either limited usefulness or are not available in the United States except under special US Food and Drug Administration (FDA) protocol for compassionate usage or off-label usage.[7–26] An in-depth discussion of these medications is beyond the scope of this article, but trials of some of these medications may be required to help ameliorate symptoms before resorting to either parenteral nutrition or an intestinal transplant.

The most common symptom is abdominal pain. Different classes of medication have been used including prokinetics like prucalopride and somatostatin, pain modulators such as tricyclic antidepressants, serotonin-norepinephrine reuptake inhibitors, and GABA analogues, in addition to narcotics.[16,19,20,23,24] Special attention should be used to look for potential side effects of these medications that can worsen some of the symptoms of CIPO, such as nausea and constipation.

Nausea is a common symptom, sometimes occurring on daily basis, and it can be associated with vomiting during episodes of exacerbations, interfere with oral intake, and impact quality of life. Antiemetics are used with variable efficacy and should be individualized based on the clinical presentation.

Antibiotics are often used to treat bacterial overgrowth syndrome.

Fecal transplant is an intriguing potential treatment. Gu and colleagues[26] prospectively studied 9 adult patients for 8 weeks after receiving fecal transplant from volunteer donors via nasojejunal tube (NJT) daily for 6 days after 3 days of daily NJT administration of 500 mg of liquid vancomycin. This reportedly resulted in significant