

Small bowel obstruction mechanisms and research studies



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Small Bowel Obstruction

Small bowel obstructions (SBO) are a common cause for emergency medical care and result in over 350, 000 hospital admissions annually, reported by Edwards, Kuppler, Croft & Eason-Bates (2018). This leads to 960, 000 days of inpatient care and a cost of \$2. 3 billion dollars in medical expenditures in the United States. Adhesions are the most common cause of SBO and are a considerable burden to the patient. Understanding what an SBO is and how it may develop will help to better treat the problem. A recent study indicates using a manual physical therapy method to treat adhesions, may be promising and negate the need for emergency or surgical intervention.

Mechanisms of Acute Disease Progression

Small bowel obstructions (SBO) may develop from mechanical or functional problems of the body and may be partial or complete, pointed out by LeMone, Burke, Bauldoff and Gubrud (2015). Examples of mechanical factors include adhesions or hernias outside of the intestine, and tumors or inflammatory bowel disease within the intestine. Functional obstruction happens when peristalsis stops functioning and contents can not be propelled through the intestinal tract as they normally should, known as paralytic ileus or ileus. When there is an obstruction in the small intestine gas, waste matter and fluid accumulate proximal to where the blockage is, leading to a distended bowel. Sodium and water are also pulled into the bowel lumen, contributing to fluid accumulation and distention. If this progresses vascular fluid volume decreases, resulting in fluid and electrolyte imbalance, hypovolemia, hypokalemia, renal impairment, and shock. If the

distension of the bowel is significant enough perfusion will be compromised leading to necrosis, perforation, sepsis and death (LeMone et al., 2015).

To protect against developing a SBO a healthy diet and lifestyle are top priority. LeMone et al. (2015) emphasized that increasing dietary fiber intake, drinking plenty of fluids, and daily exercise can help to prevent the disorder, especially in older adults. Certain dietary restrictions are recommended for those who have had a SBO in the past, including not eating popcorn. Cleveland Clinic (2019) reported adhesions that form after abdominal or pelvic surgery are the leading cause for mechanical SBO, making the surgery a predicting factor for development of the problem. Hernias are the second highest predictive factor for mechanical SBO. According to LeMone et al. (2015), Some predicting conditions that lead to functional SBO are renal colic, spinal cord injuries, uremia, and hypokalemia. Additionally, some medications like narcotics, anticholinergic drugs, and antidiarrheal medications produce functional SBO. There are not any genetic or environmental factors that directly cause a SBO, but secondary causes, such as colon cancer or inflammatory bowel disease can have genetic and environmental causes. Cleveland Clinic (2019) explained clients will experience abdominal cramps and pain, bloating, vomiting, nausea, dehydration and lack of appetite.

Studies and Research

A research study done by Rice et al. (2016), examined using a non-invasive manual physical therapy treatment to prevent postsurgical adhesive SBO in subjects that have a history of the disorder. The purpose of the research is to

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improve pain and quality of life for this population and prevent recurrent obstructions. Rice et al. (2016) research also pointed out in 2010, 42, 126 patients of 381, 364 who had surgery for adhesions were readmitted within 30 days. Then of those readmissions 100, 335 patients required surgical small bowel resection. This is a significant use of hospital's resources and expenses each year.

Rice et al. (2016) study included 27 subjects with a history of adhesive SBO and not having body mass index over 36, active infection, ovarian cysts, surgery within the last 90 days, bleeding disorders and active or end stage cancer. The design of the study was to assess the changes in quality of life for subjects after completing the treatment. The results were measured through a questionnaire the subjects completed prior to treatment and then again 90 days after treatment. The questions analyzed six areas related to SBO; diet, pain, gastrointestinal symptoms, medication, quality of life, and pain severity. The manual physical therapy treatment used was the clear passage approach, using 200 therapy techniques to attempt to deform or detach adhesions. Subjects underwent this treatment for four hours a day for five days, totaling twenty hours of manual physical therapy. Results showed in the areas of pain, quality of life and pain severity there was significant improvement after treatment. The area of gastrointestinal there was a very minimal improvement, and in diet and medication domains not improvements. Overall this study introduced the option of a less invasive approach to treat adhesions that cause SBO, with fewer risks that come with surgical repair (Rice et al., 2016).

Implications of Research

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The research done by Rice et al. (2016) suggested using the manual therapy approach will improve quality of life and pain for patients with recurrent adhesive SBO. It does not provide evidence of actually reducing the episodes of SBO. Current evidence based practice, argued by Yang et al. (2017), is surgical management for those who have had three hospital admissions for adhesive SBO. Furthermore, evidence shows conservative management before the third reoccurrence is appropriate if no bowel ischemia is present. Their research showed 84% of patient's symptoms improved without operating after first admission and 78% following second admission (Yang et al., 2017). Best nursing practice based on this evidence is to educate the patients with adhesive SBO of the option to try manual physical therapy before surgery. Informing them it can be effective and safe to improve quality of life and pain while managing the disorder. Also educating if conservative measures are not working and reoccurrence continues, surgical intervention may be needed. This approach in nursing care provides options for the patient to decide what will be best for them, based on their values, goals and preferences, to provide the best outcome.

Pros and Cons of Studies and Research

A pro for this study is it may provide a new treatment method for those suffering with SBO. It possibly will provide a promising option that has less risks and side effects than surgical options. Another pro is the outcome for this study was positive for all participants, all showed improvement and no decline in their symptoms. Cons include a small number of participants, outcome was measured by subjective, self-reported symptoms and length of study. A gap in this study is no radiological diagnostic tests were done at the <https://assignbuster.com/small-bowel-obstruction-mechanisms-and-research-studies/>

beginning of treatment to assess the severity or presence of the adhesion. There is a gap in the race of participants, of the 27 subjects 26 were Caucasian. Future possibilities for research is to perform pre and post imaging tests to visualize the adhesion and determine if it improved physiologically as well as symptomatically. Enrolling a larger number of people of more races will provide better evidence of this approach working. Also, continued follow up with the participants, to how effective the treatment is long term.

Conclusion

Research has indicated a possible new approach to treating those who suffer with recurrent SBO's using a minimally invasive manual physical therapy method. Knowing that adhesions are the most common cause helps to determine the best evidence based approach to ensure this population can have the best quality of life. With further research this treatment could potentially benefit patients and the cost to hospitals.

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