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Brandy Warmsbecker

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CHANGING CONSTIPATION IN THE PEDIATRIC POPULATION

by

Brandy A. Warmbecker

Bachelor of Science in Nursing, Minot State University, 2008

An Independent Study

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MANAGING CONSTIPATION
IN THE PEDIATRIC POPULATION

Submitted to Advance for NPs & PAs (January 20, 2013)

Brandy A. Warmsbecker, BSN, RN, CNOR, RNFA, FNP-S

Family Nurse Practitioner Student

University of North Dakota, Grand Forks, North Dakota

brandy.warmsbecker@my.und.edu

3620 6th Ave E, Williston, ND, 58801

701-770-5311

MANAGING CONSTIPATION IN THE PEDIATRIC POPULATION

Introduction

Constipation is a common complaint in the pediatric population accounting for approximately 3% of general pediatric outpatient visits and 25% of pediatric gastroenterology visits.¹⁻³ Nurse practitioners in primary care will be treating pediatric patients with complaints of constipation. This article will focus on the treatment and management of constipation in the pediatric population.

Clinical Practice Guidelines

Current practice guidelines are based on the best evidence available and expert opinions.^{2,4-6} However, the lack of quality studies performed in the pediatric population makes the guidelines based more on authority than evidence.⁶ They do provide a framework from which to start treating and the individual provider can adjust treatment as necessary based on the patient's needs. The American Academy of Nurse Practitioner guidelines published in 2010⁴ are based on the Constipation Guideline Committee of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (CGCNASPGHAN) guidelines updated in 2006.² The National Institute for Health and Clinical Excellence (NICE) guidelines were issued in 2010.⁵

Methods

In order to provide the most current information available, a comprehensive literature search of CINAHL, PubMed, Cochrane, AHRQ, ICSI, National Guideline Clearinghouse, and reference lists was performed. The keywords used included: constipation, encopresis, fecal incontinence, treatment, therapy, drug therapy, diet therapy, laxatives, and cathartics. Limits included age (0-18 years), publication date (January 2006-December 2012), and English language.

Defining Constipation

There are several variations on the definition of constipation. CGCNASPGGAN has defined constipation as "a delay or difficulty in defecation, present for 2 or more weeks, and sufficient to cause significant distress to the patient".² Other definitions may include specific signs, symptoms, and timeframes, but they are all similar to this one.

Constipation can be either organic or functional. Functional constipation has no medical cause; it is frequently the result of withholding behavior brought on by a previous painful bowel movement.³ It is by far the most common type with over 90% of pediatric constipation cases having no organic cause.¹ Organic constipation can be caused by Hirschsprung's disease, cerebral palsy, hypothyroidism, sacral agenesis and cystic fibrosis to name a few.²⁻⁵ This article will focus on treatment of functional constipation, as organic constipation management would include treating the causative medical condition.

Constipation becomes chronic when lasting for more than 8 weeks. Chronic constipation can cause adverse health effects to sufferers including colonic distention, anal fissures, involuntary soiling, and abdominal discomfort; it may also hinder growth and development.³

Encopresis or fecal incontinence is caused by chronic constipation and is involuntary.⁷ Encopresis is the liquid stool that leaks around the hard stool retained in the colon; the psychological ramifications for the child can be devastating.

Diagnosing

A thorough history and physical exam are essential and usually sufficient to diagnose functional constipation.^{2,4-6} According to CGCNASPGHAN, a constipation history should include the following components:

Frequency and consistency of stools, pain or bleeding with passing stools, abdominal pain, waxing and waning of symptoms, age of onset, toilet training, fecal soiling, withholding behavior, change in appetite, nausea or vomiting, weight loss, perianal fissures, dermatitis, abscess, or fistula, current treatment, previous treatment.²

The available clinical guidelines have different suggestions regarding the physical exam. CGCNASPGHAN recommends a digital rectal exam (DRE) be performed at least once.² They also recommend a fecal occult blood test for every infant presenting with constipation.² NICE recommends a DRE only be performed by a provider "competent to interpret features of anatomical abnormalities or Hirschsprung's disease."⁵

Any of the history and physical findings listed in Table 1 are considered "red flags" and would suggest an organic cause for the constipation. These findings warrant additional workup and possible pediatric gastroenterologist referral when appropriate.² This was just a brief overview of diagnosing as the focus of this article is management.

Management

Education. Education is an essential component in managing pediatric constipation. Parents need to understand what a normal bowel movement is for their child. Frequency changes throughout childhood and differs from child to child. Infants younger than one year of age have bowel movements two to five times per day.⁹ In children ages one to four, bowel movements can vary as frequently as once or twice per day to once every two or three days.^{2,4,8,9} Caliber and consistency also need to be addressed. An explanation of the basic pathophysiology can help the parents understand the problem and help take away blame and negative implications from fecal incontinence. Diet, exercise, and toilet training advice should also be provided. Encouraging toilet time 5-10 minutes after meals to utilize the gastro-colonic reflex, putting stickers on a calendar that can also be used as positive reinforcement and brought to their visits, and ensuring the child is ready for toilet training are a few suggestions to help the family through this problem.^{1,2,4,7-10}

Disimpaction. If the presenting child is found to have a fecal impaction, it is imperative for the impaction to be evacuated in order for treatment to be successful. If the rectum is not cleared of the retained stool, oral laxative treatment at maintenance dosing may cause increased fecal incontinence and abdominal pain.^{1,3} NICE recommends using oral medications before advancing to rectal medications; they also recommend against manual disimpaction unless all other treatment options have been exhausted.⁵ CGCNASPGHAN recommends oral medications, rectal medications, or a combination of both, depending on the patient; the rectal approach is faster but invasive and the oral approach is not invasive but there is

a chance for decreased compliance.² The two organizations couldn't reach a consensus regarding manual disimpaction and therefore neither recommend or discourage it.²

Oral medications used for disimpaction include high dose polyethylene glycol (PEG) 3350 (MiraLax), polyethylene glycol/electrolytes (GoLytely), or high dose mineral oil.^{2,9} Other osmotic and stimulant laxatives have been used with success; however, there are no controlled trials to support their use.² Laxatives may be used alone or in combination with rectal therapy. CGCNASPGHAN recommendations regarding rectal therapy include: saline enemas, phosphate soda enemas, or a mineral oil enema followed by a phosphate enema.² Tap water, soap suds, and magnesium enemas may cause toxicity and should not be used for disimpaction.² If oral, rectal, or combination therapy are not successful within seven days, the patient would need to be treated in-patient with oral lavage.⁹

Maintenance. Maintenance therapy should begin as soon as the impaction has been resolved. Diet, behavior modification, and stool softeners or laxatives are all important components in preventing reoccurrence. Providers should stress the importance of a balanced diet with sufficient fluids, fruits, and vegetables. A balanced diet would include an adequate amount of fiber to maintain regular bowel movements. High fiber foods include: whole grains, raisins, prunes, berries, kidney beans, lima beans, cabbage, spinach, broccoli, and cauliflower. There are conflicting opinions on fiber supplementation in this population; however, increased fiber should not be added to the diet until the constipation has resolved.^{7,9} Behavior modification was addressed with education and includes scheduled toilet times and positive reinforcement with a calendar, diary, or reward system. Stool softeners or laxatives are used to prevent a relapse; a list of common medications used is listed in Table 2.

Infants

Neonates and infants younger than one year require special consideration when treating constipation. It is appropriate to increase fluid intake, including fruit juices containing sorbitol (apple, pear, and prune).² In infants older than six months, rice cereal may be replaced by barley cereal.⁹ The use of glycerin suppositories is also appropriate; however, mineral oil, stimulant laxatives and enemas should be avoided.^{2,9}

Treatment Considerations

In the patient with chronic constipation, the overstretched rectal wall desensitizes to the sensation of being full and the patient doesn't recognize the need to empty their bowels.^{1,7} Once the rectum has been successfully disimpacted, laxatives may need to be used for an extended period of time in order to prevent relapse and allow proper size and function to return.⁷ There are several treatment options and they should be discussed with the family. Compliance is crucial for successful treatment and if one treatment doesn't work, another should be chosen.

Among laxatives, PEG appears to be most effective.^{6,9,11,12} However, the other drugs listed are all comparable to each other.⁹ There is a lack of high quality studies to support the definitive recommendation of one agent above another. There are considerations to be made when discussing the options with the family. PEG is flavorless, which makes it more palatable to children; however, it is expensive.⁹ Mineral oil is inexpensive, but there is an aspiration risk and it has poor palatability.⁹ Stimulant laxatives may cause bowel dependence; they are usually

reserved for "rescue" therapy and can be used for one to three days to prevent impaction.^{1,9} Probiotics, prebiotics, fiber supplements, and fluid supplements all lack high quality studies to confirm efficacy.^{14,15}

Medication doses should be titrated to achieve desired effect; this can range from a minimum of three soft easily passed stools per week or may be as frequent as daily.^{7,13} Treatment should continue for several weeks past the return of normal bowel habits and may need to continue for six months or more.^{5,7} Treatment should not be stopped abruptly, but should be tapered gradually.^{5,7}

Conclusion

Constipation in the pediatric population is a common problem that nurse practitioners will manage. Most cases of pediatric constipation are functional and have no organic cause. A thorough history and physical is essential for diagnosing. Management includes a combination of education, disimpaction, and maintenance therapy. Managing constipation in infants requires special consideration. Educating the patient and parents is crucial for treatment success. Treatment options should be discussed with the family to improve compliance.

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