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Constipation in Children with Cancer

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Abstract

Constipation is a common symptom in children with cancer that has a negative effect on quality of life. Although it has been widely observed clinic setting there have been limited studies conducted on the subject. According to the limited number of research studies 2-31% of children with cancer have constipation. Constipation is a symptom that causes stress and has a negative effect on quality of life and needs to be kept under control like other side effects in children with cancer. Nurses and other health care professionals strive to provide care for patients that are based on rigorous research. The purpose of this article is to discuss the constipation in children with cancer in relevant literature.

Keywords: Constipation; Cancer; Children

Introduction

Having cancer and living with cancer is a difficult journey for the child and family. On this journey coping with what is felt after the diagnosis is made as well as with the side effects that can develop during treatment are very important. Side effects are very common in children being treated for cancer. The majority of these children experience complex, developmental and illness-related needs for many years as a result of scientific and medical developments [1]. Technologic advancements have not prevented the negative effect of cancer or cancer treatment-related side effects on children's quality of life. The majority of children with cancer complain of side effects from cancer and its treatment, such as pain, nausea and vomiting, fatigue, and constipation [2]. Constipation is a symptom which has a negative effect on daily life, social acceptance, self-confidence and quality of life [3,4]. This review will provide an overview of constipation in pediatric oncology patients and discuss constipation with regard to its definition, epidemiology, causes and management.

Definition of constipation

Constipation, which is common in the pediatric population, is not an illness but a symptom [5-8]. The word constipation derives from the Latin constipate which means "to crowd together" [9]. It means different things to different people and is a subjective symptom [10]. Owing to the subjectivity of constipation, no universally accepted definitions exists [11,12]. Constipation is difficult to define [10] because of a huge variation in bowel habits, especially if patients are unaware that daily bowel habit does not necessarily equate with a normal bowel action [11,12]. Definitions of constipation vary in childhood, but there is general acceptance that it is abnormal to have a stool frequency of less than three times per week, hard painful defecation, periodic passage of very large amounts of stool at least once every 7-30 days, or palpable abdominal or rectal mass on physical examination [13]. Recently reported Rome III criteria are widely used in children and researchers assessed these criteria in their patients. The constipation by Rome III criteria is defined as presence of 2 or more criteria for at least 2 months [14]. However children on chemotherapy could develop constipation within days.

Epidemiology of constipation

Constipation is widely seen in every age group of patients with cancer, and, although not known for sure, approximately 50% of patients in every age group and gender are affected by constipation [4,15]. There have only been a limited number of studies conducted on constipation in children. In studies by Smith [4] and Collins et al. [16] it was determined that as many as 30% of children with cancer have experienced constipation [4,16]. Smith's study was very small and actually looked the number of admission resulting from constipation. Another retrospective study was conducted with the parents of 32 children with cancer in Holland one to three years after their children had died. In this study it was determined that 31% of the children had constipation in the palliative phase of their cancer [17]. When the effect of lifestyle, eating habits and medications that are being used on the development of constipation are taken into consideration, the frequency of constipation in children with cancer may be even higher.

Causes of constipation

Various factors may cause or increase the likelihood of constipation in children with cancer. Constipation can occur from primary, secondary or iatrogenic causes [7,18]. The development of constipation in children with cancer can be explained as a kind of vicious cycle. Other than physiological and psychological factors in constipation development the most important factors are immobility, eating low fiber, low calorie foods and inadequate fluid intake [11,12]. Opioids and antiemetics used in children with cancer can also cause constipation, but not using these medications leads to pain and nausea and vomiting. Opioids cause constipation by reducing bowel motility and secretions and by increasing colon transit time, resulting in increased fluid absorption in the colon [19]. Having a poor appetite as a result of the illness as well as the chemotherapy interferes with the consumption of high calorie foods and fluids, and for reasons such as fatigue and pain children limit their movement. All of these reasons as well as the effect of culture and development on frequency of defecation and not speaking with nurses or other members of the health care team are potential factors in the development of constipation in children with cancer.

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Assessment

Before constipation develops it is necessary to obtain a detailed patient history and identify risks so that preventive measures can be implemented. Oncology nurses have a key position to play in the assessment of bowel elimination however the difficulty in assessing bowel elimination may be exacerbated by the sensitive nature of the subject. Asking the patient how she/he defines constipation allows the nurse to understand constipation from the patient's perspective [6]. It is widely accepted that patient assessment is an essential aspect of care planning [20]. Identification of the risk of constipation provides nurses with an opportunity to plan individualized care for patients, with specific interventions for bowel elimination. Assessing constipation is essential in determining the cause and developing effective management strategies [18]. For this reason, it is important to take a detailed history from the parent, and where possible, the child, including taking note of relevant dietary, family, social and environmental factors [13]. Assessment is an important aspect of prevention and management of constipation in children with cancer. However there is a need for an objective measurement tool for the diagnosis of the subjective symptom of constipation. The lack of an appropriate assessment tool has impeded our understanding of its prevalence and significance, specifically in children with cancer. To our knowledge only one assessment tool for the definition constipation in children with cancer has been reported in the literature. An instrument developed by Woolery et al. [18] for the definition of constipation in adults has been adapted for children and its validity and reliability have been tested. It is important to prevent the development of constipation in patients at high risk for development of constipation, particularly those with cancer, and if it develops, it is important for its causes and severity to be defined. Constipation can be defined with the use of a clinical pathway. The pathway for diarrhea and constipation developed by Gibson [21] for adult patients can be adapted for use with children on pediatric oncology units. This probability may test with pilot study.

Management of constipation

Although it is known that there is a possibility of constipation developing and that it does develop in children with cancer, there is no evidence based approach to the management of constipation. The only literature that specifically addressed pediatric constipation in the oncology population was the National Comprehensive Cancer Network Clinical Practice Guidelines: Pediatric Cancer Pain [22], which review interventions for the management of opioid induced constipation. In a study conducted by Selwood [10] on 22 pediatric oncology units in United Kingdom (with a 54% response rate) in only 33% of these units was there a written guide for the management of constipation and only 25% of these were specifically for the pediatric population [10]. An effective prevention program is important in constipation management. The key to prevention is determining individuals who are at risk. Children with cancer are at risk because of their lifestyles, eating habits, fluid intake, and use of medication. The important steps in the prevention of constipation are monitoring intestinal functioning, providing a high fiber diet, and increasing exercise [6]. However children with cancer have problems with loss of appetite, fatigue, pain and depression that interfere with their consumption of a high calorie and high fiber diet. To improve these situation meals can be offered to children in a way that is appealing to them according to their developmental level. Ensuring that children with cancer have adequate nutrition is a priority in their nursing care. Along with adequate nutrition, to encourage children to maintain their toilet habits under hospital conditions it is recommended that they sit on the toilet this situation meals (in the correct position) for 10-15 minutes after meals because the gastrocolic reflex is stimulated at the highest level within the first 20-30 minutes after meals [8,23]. Bedrest and immobility can weaken the abdominal wall muscles. This can make it difficult to increase intra-abdominal pressure and constipation can develop [11,12] Encouraging children with cancer to move around as much as possible (taking short walks several times a day) can be beneficial in the prevention and treatment of constipation. Children may be too embarrassed or lack the self-confidence to tell health care personnel, or even their family, that they are constipated. Nurses can encourage children to talk about constipation while they give them care by using effective communication techniques [13]. Woolery et al. [24] synthesized that although pharmacologic studies have not been conducted in the oncology population, for children, mineral oil may be more effective than senna-based laxatives but less effective than osmotic laxatives. As noted previously, stimulant laxatives are not recommended for maintenance therapy but can be used for acute constipation, for patients who have failed other protocols, and for children receiving opioids [24].

Conclusion

Constipation is a symptom that causes stress and has a negative effect on quality of life and needs to be kept under control like other side effects in children with cancer. Pediatric oncology nursing practice focuses on implementing treatment protocols, providing supportive care, educating patient and their families about side effects of therapy. Pediatric oncology nurses and other health care professionals strive to provide care for patients that are based on rigorous research. The development of a valid and reliable diagnostic tool that is specifically prepared for children and using it widely, increasing the evidence based studies in this area to fill the void, and preparing written guidelines for prevention and treatment according to children's developmental stage can guide health care professionals in the prevention and treatment of constipation.

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