



ORIGINAL ARTICLE

Clinical Characteristics of Pediatric Constipation in Bangladesh

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Abstract

Background: Constipation is a common pediatric problem worldwide. **Objective:** This study aims to decide the clinical characteristics of pediatric constipation in Bangladesh according to gender and age group. **Methodology:** All patients with constipation managed at Pediatric Department of Shaheed Tajuddin Ahmad Medical College Hospital, Gajipur, Bangladesh were included between January 2020 to December 2020. Demographic data, clinical characteristics and final diagnosis were recorded. Data were analyzed according to gender and the following age group: infants, pre-school, school age and adolescents. **Results:** During the study period 64 patients were enrolled. The number (percentage) of patients according to age were the following infants 21(32.8), preschool, 28(43.8), school age 12(18.8) and adolescents 3(4.7). Males made up 35(54.7) of the study population. There was no statistical gender difference in any age group. The most common symptom in all age groups was dry, hard stool. Infrequent defecation was found in almost half of the patients. Fecal incontinence was more common in school aged children compared to pre-school aged children. Abdominal pain was seen in almost 37.5% of the constipated children. Fecal mass in the rectum was the most common physical finding. **Conclusion:** Clinical characteristics of constipation in children vary according to age group and gender. Older children had less frequent bowel motions, a longer duration of symptoms and a higher prevalence of long-standing constipation complication (fecal incontinence and abdominal pain). [*Journal of Current and Advance Medical Research, July 2021;8(2):110-113*]

Keywords: Constipation, Infants, preschool, school age, adolescent

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Introduction

Constipation is a common symptom in children accounting for 3.0% of general pediatric outpatient visits and up to 25.0% of visits to pediatric gastroenterologists¹⁻². Estimates of the worldwide prevalence of childhood constipation vary from 0.3% to 28.0% cases³⁻⁶. Most of the increase was in children younger than 2 years of age⁴. The reason for this increase is not well known, but may be due to changing patterns in toilet training, diminished dietary fiber intake or greater access to health care services⁷⁻⁸.

Constipation has a significant impact on the use and cost of medical services⁹. Childhood constipation is a family issue that negatively affects children's physical, social, emotional and school functioning¹⁰. As normal bowel habits differ with age¹¹ features of constipation are expected to differ between age groups. Prevalence and symptoms of constipation are often different in very young children than in older children. It peaks at the age of toilet training³. A longer duration of constipation before diagnosis has been associated with complications like fecal incontinence and poorer long-term outcome like persistent of symptoms and continuous need for laxatives³.

The clinical profile of childhood constipation has been well described in developed countries^{3,12-14}; however, new reports indicate that the pattern of constipation is not limited to developed countries. Constipation also seems to be more prevalent in families with lesser education and lower socioeconomic status¹⁵⁻¹⁶. A community based survey from Sri-Lanka using Rome III criteria reported that constipation affects 10.6% of children 10 to 16 years old¹⁰ [10]. Another report from Iran reported that childhood constipation is the cause of 15.6% of pediatric gastroenterology clinic visits⁹. In Bangladesh, the prevalence of pediatric constipation is unknown. No epidemiological studies have been performed to identify the problem. So, this study was undertaken to evaluate the etiology and clinical characteristics of patients with constipation according to age group and gender.

Methodology

Consecutive children with constipation (organic and non-organic) who presented to the outpatient department of pediatrics at Shaheed Tajuddin Ahmad Medical College, Gazipur, Bangladesh between January 2020 and December 2020 were included in this cross-sectional study. Consent and

ethical committee approved. Exclusion criteria were patients with constipation for less than 2 weeks and these with insufficient data. At their first visit in OPD, the patient's detailed history was documented either by the patient if appropriate and /or by the patient's caregivers. Constipation was diagnosed when a delay or difficulty in defecation was present for 2 or more weeks that was sufficient to cause significant distress to the patient¹⁷. The patients complete case records were reviewed in detail. Data collected included age, gender, duration of constipation, symptoms and signs such as bowel motion frequency, bowel motion consistency, pain with defecation, stool withholding behavior, presence of blood with bowel motion, fecal incontinence, and the presence of fecal impaction or an abdominal mass. Clinical evaluation (history and physical examination) of all patients was done by the same physician. Digital rectal examination was deferred in cases of active anal fissures and parent or patient refusal. Laboratory and radiological investigations were performed according to the patient's presentation. Hypothyroidism, celiac disease, Hirsch sprung disease, allergy to cow's milk protein and neurological disorders were diagnosed with appropriate investigation and were excluded. For data analysis and comparison, we categorized the patients according to gender and age, infants (0 to 23.9 months), preschool (24.0 to 71.9 months), school age (72.0 to 120 months) and adolescents (121 to 192months). The SPSS software was used. Results were expressed as the means with ranges. Categorical data were tested using Fisher's exact test and continuous data were tested using t-test, p-value <0.05 were considered significant.

Results

During the study period total 64 patients of whom had constipation were enrolled. Of the 64 patients 35(54.7%) were male. Pre-school children (n=28, 43.8%), were the most commonly affected age group followed by infants (n=21, 32.8%), school-age children (n=12, 18.8%) and adolescents (n=3, 4.7%). The average duration of constipation prior to consultation significantly increased with age (2.76, 3.86, 5.92, 11.00 months) for infants, pre-school, school age and adolescents respectively (Table 1). The most common symptom in all age groups was dry, hard stool. Infrequent defecation was found in almost half of the patients. Fecal incontinence was more common in school aged children compared to pre-school aged children. Abdominal pain was seen in almost 37.5% of the constipated children (Table 2). Fecal mass in the rectum was the most common physical finding (Table 3).

Table 1: Patients distribution by age, sex, Duration of Constipation Prior to Consultation and Treatment Exposure

Variables	Infants (0-23.9m)	Preschool (24.0-71.9m)	School (72-120m)	Adolescent (121-192m)	Total	P value
Patient	21(32.8)	28(43.8)	12(18.8)	3(4.7)	64(100.0)	
Male	13(61.9)	15(53.6)	5(41.7)	2(66.7)	35(54.7)	0.694 ^{ns}
Female	8(38.1)	13(46.4)	7(58.3)	1(33.3)	29(45.3)	
Duration of constipation prior to consultation(month)	2.76±2.10 (1-9)	3.86±4.07 (1-21)	5.92±7.48 (1-22)	11.00±11.36 (3-24)	4.22±5.08 (1-24)	0.032 ^s
Treatment exposure	10(47.6)	9(32.1)	6(50.0)	2(66.7)	27(42.2)	0.484 ^{ns}

Table 2: Clinical Characteristics of Bowel Motion and Associated Symptoms

Variables	Infants (n=21)	Preschool (n=28)	School (n=12)	Adolescent (n=3)	Total (n=64)	P value
≤2 evacuation/week	9(42.9%)	15(53.6%)	6(50.0%)	2(66.7%)	32(50.0%)	0.824 ^{ns}
Hard stool	20(95.3%)	25(89.3%)	11(91.7%)	3(100.0%)	59(92.2%)	0.836 ^{ns}
Fecal incontinence	0(0.0%)	8(28.6%)	8(66.7%)	2(66.7%)	18(28.1%)	0.001 ^s
Withholding behavior	9(42.9%)	14(50.0%)	1(8.3%)	0(0.0%)	24(37.5%)	0.041 ^s
Abdominal pain	3(14.3%)	11(39.3%)	8(66.7%)	2(66.7%)	24(37.5%)	0.016 ^s

Table 3: Physical findings in patient with constipation

Variables	Infants (n=21)	Preschool (n=28)	School (n=12)	Adolescent (n=3)	Total (n=64)	P value
Abdominal Distension	8(38.1%)	11(39.3%)	6(50.0%)	0(0.0%)	25(39.1%)	0.469 ^{ns}
Abdominal mass	2(9.5%)	3(10.7%)	2(16.7%)	0(0.0%)	7(10.9%)	0.845 ^{ns}
Fecal mass in rectum	10(47.6%)	15(53.6%)	4(33.3%)	3(100.0%)	32(50.0%)	0.210 ^{ns}
Abnormal perianal exam (fissure,tag)	10(47.6%)	10(35.7%)	1(8.3%)	0(0.0%)	21(32.8%)	0.074 ^{ns}

Discussion

The study showed the prevalence of constipation among children treated in outpatient department of Pediatrics in Shaheed Tajuddin Ahmad Medical College Hospital, Gazipur, Bangladesh. Patients were categorized into four pediatric age groups; infants, preschool, school-age children and adolescents. This study showed that older children had less frequent bowel motion, a longer duration of symptoms, and higher prevalence of long standing constipation complications like fecal incontinence and abdominal pain. Preschool and school children were most common affected age group.

Two or fewer bowel motions per week is a used definition of constipation and was reported by only half of our patients. Using only this definition will lead to under-diagnosis of constipation¹³. Hard, dry

stool and painful defecation appear to be more sensitive indicators. More than 90% of constipated children in all age groups described their bowel motions as dry, hard and painful. This is consistent with the work of Loening- Baucke¹⁴, who concluded that using stool consistency and painful bowel motion to define constipation is more sensitive than using symptom duration or frequency of bowel motions.

Fecal incontinence has a significant influence on children and their families. Retentive fecal incontinence has a significant influence on children and their families. Retentive fecal incontinence (associated with constipation) has been reported in upto 85% of constipated children¹⁸. In this study school-aged children exhibited the highest rate of fecal incontinence, which was significantly different compared to preschool children (p=0.001).

Stool withholding is usually misinterpreted as staining, which aims to prevent anal relaxation rather than pushing the stool down. Rasquin et al¹⁹ reported these retentive behaviors in up to 60.0% of children with functional constipation. On the other hand, a study from India reported withholding in 27% patients²⁰. In our study the rate was 50.0% in preschool children showed a significantly higher prevalence rate compared with older children. Abdominal pain was reported in about one-third of constipated children²¹. In this study almost 37.5% of our patients had abdominal pain and the prevalence rate increased with age ($p=0.016$).

On physical exam, a fecal mass in the rectum was the most common finding in all age groups. Adolescents showed the highest rate (100%) and may reflect the long standing constipation in this age groups. On the other hand younger age groups showed a higher prevalence of an abnormal perianal examination.

Conclusion

This study described the clinical profile of childhood constipation in Bangladeshi children according to age group and gender. The clinical characteristics differed according to age group. These differences need to be considered when treating constipated children. Further studies are needed to explain the epidemiology, management and outcome in children with constipation.

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