

# Clinical Profile of Paediatric Patients Undergoing Treatment for Constipation: An Institutional Based Study

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## ABSTRACT

**Background:** Constipation is a very common presentation, both in primary and secondary care. Prevalence of functional constipation in children ranges from 4-36%. Hence; the present study was conducted for assessing the profile of paediatric patients undergoing treatment for constipations.

**Materials & Methods:** A total of 60 subjects with age upto 17 years were enrolled. Only those subjects were enrolled that reported with constipation. Complete demographic and clinical details of all the patients were obtained. A Performa was made and complete clinical profile of all the subjects was evaluated. Radiographic findings were assessed. Treatment profile was also evaluated. All the results were recorded and analysed by SPSS software.

**Results:** A total of 60 subjects with mean age of 8.65 years were enrolled; among which 55 percent were males while the remaining 45 percent were females. Abdominal pain, abdominal Distention and straining were seen in 90 percent, 15 percent and 16.7 percent of the patients respectively. Majority of the subjects had history of intake of cow milk. History of bottle feeding was present in 41.7 percent of the patients. On peri-anal region examination, stool in rectum, Perianal faecal soiling and increased anal sphincter tone were seen in 28.3 percent of the patients each. On performing X-ray abdomen,

faecal loading was seen in 60 percent of the patients. Dulcolax sup was used by 5 percent of the patients while PEG was used in 95 percent of the patients.

**Conclusion:** Constipation is a routine pediatric problem impacting significant proportion of children population worldwide. Exact etiology is unclear in the majority and is thought to be functional in origin. Constipation is a clinical diagnosis and investigations are rarely needed.

**Key words:** Constipation, Pediatric.


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## INTRODUCTION

Constipation is a very common presentation, both in primary and secondary care. Prevalence of functional constipation in children ranges from 4-36%. In the hospital setting, paediatric constipation forms 3% of all referrals to paediatric practice and up to 25% to paediatric gastroenterologists. Outside of the neonatal period, childhood constipation is usually functional (i.e., there is no evidence of an organic condition). Functional constipation is most commonly caused by painful bowel movements that prompt the child to voluntarily withhold stool.<sup>1-3</sup> To avoid the passage of another painful bowel movement, the child will contract the anal sphincter or gluteal muscles by stiffening his or her body, hiding in a corner, rocking back and forth, or fidgeting with each urge to defecate. Parents often confuse these withholding behaviors as straining to defecate. Withholding of stool can lead to prolonged

fecal stasis in the colon with reabsorption of fluid, causing the stool to become harder, larger, and more painful to pass. Over time, as the rectum stretches to accommodate the retained fecal mass, rectal sensation decreases, and fecal incontinence may develop. This cycle commonly coincides with toilet training, changes in routine or diet, stressful events, illness, or lack of accessible toilets, or occurs in a busy child who defers defecation.<sup>4-6</sup> Hence; the present study was conducted for assessing the profile of paediatric patients undergoing treatment for constipations.

## MATERIALS & METHODS

The present study was conducted in the Department of Paediatrics, Rajshree Medical Research Institute & Hospital,

Bareilly, UP (India) for assessing the profile of paediatric patients undergoing treatment for constipation. A total of 60 subjects with age upto 17 years were enrolled. Only those subjects were enrolled that reported with constipation.

Subjects with celiac disease, hypothyroidism, vit d intoxication, hirschsprung disease, drug and metal ingestion, hypokalemia, hypercalcemia, trauma and spinal cord anomalies were excluded from study.

Complete demographic and clinical details of all the patients were obtained. A Performa was made and complete clinical profile of all the subjects was evaluated. Radiographic findings were assessed. Treatment profile was also evaluated. All the results were recorded and analysed by SPSS software. Chi-square test was used for evaluation of level of significance.

## RESULTS

A total of 60 subjects with mean age of 8.65 years were enrolled; among which 55 percent were males while the remaining 45 percent were females. Abdominal pain, abdominal Distention and straining were seen in 90 percent, 15 percent and 16.7 percent of the patients respectively. Recurrent history of vomiting was seen in 55 percent of the patients. Stool frequency was daily in 38.3 percent of the patients while it was bi-weekly in 35 percent of the patients. 10 percent of the patients reported presence of blood in stools. School performance was average in 61.7 percent of the patients. Majority of the subjects had history of intake of cow milk. History of bottle feeding was present in 41.7 percent of the patients. On peri-anal region examination, stool in rectum, Perianal faecal soiling and increased anal sphincter tone were seen in 28.3 percent of the patients each. On performing X-ray abdomen, faecal loading was seen in 60 percent of the patients. Dulcolax sup was used by 5 percent of the patients while PEG was used in 95 percent of the patients. Abdominal pain was more common in patients using cow milk (p- value < 0.001). Straining was more common seen in patients on breast milk. Stool frequency was higher among patients on cow milk.

**Table 1: Gender wise distribution of study subjects**

	n	%
Female	27	45.0
Male	33	55.0

**Table 2: Descriptive statistics of age parameter (years) among study subjects**

Minimum	Maximum	Mean	Std. Deviation
2.00	17.00	8.65	4.54

**Table 3: Frequency distribution of study subjects according to symptoms related to abdomen**

Abdominal Pain	n	%
Yes	54	90.0
No	6	10.0
<b>Abdominal Distention</b>		
Yes	9	15.0
No	51	85.0
<b>Straining</b>		
Yes	10	16.7
No	50	83.3

**Table 4: Frequency distribution of study subjects according to history of vomiting**

	n	%
1-2 episode	13	21.7
Not Present	14	23.3
Recurrent	33	55.0

**Table 5: Frequency distribution of study subjects according to symptoms related to stool**

Stool Frequency	n	%
Alternate	3	5.0
Bi-weekly	21	35.0
Daily	23	38.3
Weekly	13	21.7
<b>Blood In Stool</b>		
Yes	6	10.0
No	54	90.0

**Table 6: Frequency distribution of study subjects according to symptoms related to appetite**

	n	%
Decreased	34	56.7
Good	6	10.0
Normal	13	21.7
Poor	7	11.7

**Table 7: Frequency distribution of study subjects according to history of drug**

	n	%
No	54	90.0
Prednisolone	3	5.0
Valparin	3	5.0

**Table 8: Frequency distribution of study subjects according to history of bed wetting**

	n	%
Yes	3	5.0
No	57	95.0

**Table 9: Frequency distribution of study subjects according to history of allergy**

	n	%
No	57	95.0
Egg	3	5.0

**Table 10: Frequency distribution of study subjects according to school performance**

	n	%
Above average	20	33.3
Average	37	61.7
Below Average	3	5.0

**Table 11: Frequency distribution of study subjects according to habit of television watching**

	n	%
Yes	53	88.3
No	7	11.7

**Table 12: Frequency distribution of study subjects according to TOTT**

	n	%
Morning	11	18.3
Not Fixed	49	81.7

**Table 13: Frequency distribution of study subjects according to Type of milk intake**

	n	%
Breast Milk	20	33.3
Buffalo Milk	3	5.0
Cow Milk	37	61.7

**Table 14: Frequency distribution of study subjects according to habit of bottle feeding**

	n	%
Yes	25	41.7
No	35	58.3

**Table 15: Frequency distribution of study subjects according to fibre intake in food**

	n	%
Yes	23	38.3
No	37	61.7

**Table 16: Frequency distribution of study subjects according to findings during peri anal region examination**

	n	%
Increased anal sphincter tone	17	28.3
Normal	9	15.0
Perianal faecal soiling	17	28.3
Stool in Rectum	17	28.3

**Table 17: Frequency distribution of study subjects according to findings during x ray abdomen**

	n	%
Excessive Faecal loading	9	15.0
Faecal Loading	36	60.0
N	12	20.0
SAIO	3	5.0

**Table 18: Parameters analysed by blood investigations**

	Minimum	Maximum	Mean	SD
TLC	4.60	87.00	15.55	19.85
Hb level	8.80	13.90	11.40	1.66
TSH level	.82	6.20	4.39	1.37
Vit D level	6.13	21.60	14.07	4.53

**Table 19: Frequency distribution of study subjects according to Potassium level categories**

	n	%
<500	31	51.7
>500	29	48.3

**Table 20: BMI related parameters among study subjects**

	Minimum	Maximum	Mean	SD
Weight	9.2	48.0	25.10	12.32
Height	70.0	149.0	112.13	21.67
BMI	11.2	23.6	18.34	4.27

**Table 21: Frequency distribution of study subjects according to treatment modality used**

	n	%
Dulcolax sup	3	5.0
PEG	57	95.0

**Table 22: Cross tabulation of abdominal signs with the type of milk**

		Type of milk			Chi Square value	p value
		Breast Milk	Buffalo Milk	Cow Milk		
Abdominal pain	Yes	17	0	37	31.66	<0.001*
	No	3	3	0		
Abdominal Distention	Yes	3	0	6	0.57	0.751
	No	17	3	31		
Straining	Yes	7	3	0	27.24	<0.001*
	No	13	0	37		

**Table 23: Cross tabulation of stool signs with the type of milk**

		Type of milk			Chi Square value	p value
		Breast Milk	Buffalo Milk	Cow Milk		
Stool frequency	Alternate	0	0	3	17.34	0.008*
	Bi-weekly	4	0	17		
	Daily	13	3	7		
	Weekly	3	0	10		
Blood in stool	Yes	0	0	6	4.14	0
	No	20	3	31		

**Table 24: Cross tabulation of abdominal signs with the potassium level categories**

		Potassium level		Chi Square value	p value
		<500	>500		
Abdominal pain	Yes	28	26	0.007	0.031
	No	3	3		
Abdominal Distention	Yes	4	5	0.221	0.638
	No	27	24		
Straining	Yes	4	6	0.654	0.419
	No	27	23		

Table 25: Cross tabulation of abdominal signs with fibre intake

		Fibre intake		Chi Square value	p value
		Yes	No		
Abdominal pain	Yes	17	37	10.73	0.001*
	No	6	0		
Abdominal Distention	Yes	3	6	0.11	0.738
	No	20	31		
Straining	Yes	7	3	5.09	0.024*
	No	16	34		

Table 26: Cross tabulation of stool signs with fibre intake

		Fibre intake		Chi Square value	p value
		Yes	No		
Stool frequency	Alternate	0	3	39.20	<0.001*
	Bi-weekly	0	21		
	Daily	20	3		
	Weekly	3	10		
Blood in stool	Yes	0	6	4.14	0.042*
	No	23	31		

## DISCUSSION

The practicing physician should be up to date with the principles of management. Recently published data from Virginia (USA) suggested that up to 86% of the primary care physicians had no awareness of the published clinical guidelines for constipation in children. After 2 months of treatment, nearly 40% of children remained symptomatic; which was improved by improved parental understanding and regular laxatives.<sup>7-9</sup> Hence; the present study was conducted for assessing the profile of paediatric patients undergoing treatment for constipations.

A total of 60 subjects with mean age of 8.65 years were enrolled; among which 55 percent were males while the remaining 45 percent were females. Abdominal pain, abdominal Distention and straining were seen in 90 percent, 15 percent and 16.7 percent of the patients respectively. Recurrent history of vomiting was seen in 55 percent of the patients. Stool frequency was daily in 38.3 percent of the patients while it was bi-weekly in 35 percent of the patients. 10 percent of the patients reported presence of blood in stools. School performance was average in 61.7 percent of the patients. Tabbers MM et al charged the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition with the task of developing a uniform document of evidence-based guidelines for assisting medical care providers in the evaluation and management of children with functional constipation. Nine clinical questions addressing diagnostic, therapeutic, and prognostic topics were formulated. A systematic literature search was performed from inception to October 2011 using Embase, MEDLINE, the Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Clinical Trials, and PsychInfo databases. The approach of the Grading of Recommendations Assessment, Development and Evaluation was applied to evaluate outcomes. For therapeutic questions, quality of evidence was assessed using the Grading of Recommendations, Assessment, Development, and Evaluation system. Grading the quality of evidence for the other questions was performed according to the classification system of the Oxford Centre for Evidence-Based Medicine. During 3 consensus meetings, all recommendations were discussed and finalized. The group members voted on each recommendation, using the

nominal voting technique. Expert opinion was used where no randomized controlled trials were available to support the recommendation. Their evidence-based guideline provides recommendations for the evaluation and treatment of children with functional constipation to standardize and improve their quality of care. In addition, 2 algorithms were developed, one for the infants <6 months of age and the other for older infants and children.<sup>10</sup>

In the present study, majority of the subjects had history of intake of cow milk. History of bottle feeding was present in 41.7 percent of the patients. On peri-anal region examination, stool in rectum, Perianal faecal soiling and increased anal sphincter tone were seen in 28.3 percent of the patients each. On performing X-ray abdomen, faecal loading was seen in 60 percent of the patients. Dulcolax sup was used by 5 percent of the patients while PEG was used in 95 percent of the patients. Abdominal pain was more common in patients using cow milk (p- value < 0.001). Straining was more common seen in patients on breast milk. Stool frequency was higher among patients on cow milk. Evacuation of feces accumulated in the rectum is the key therapeutic step in successful management of constipation. Several studies have assessed the value of polyethylene glycol (PEG) in fecal disimpaction. One study proved that PEG 3350 without electrolytes has cleared fecal impaction in 75% of children with constipation and children using higher doses had more clearance than those using lower doses. In agreement with this, Pashanker et al showed that, after 8 weeks of treatment with PEG without electrolytes, children had less fecal soiling, painful defecation, fecal impaction and rectal dilatation. Another study showed that PEG 3350 plus electrolytes is more effective in disimpaction compared to suppositories or rectal enemas.<sup>91</sup> In addition, health costs and hospital admissions were reduced when using PEG compared to enemas and suppositories. Furthermore, PEG 3350 plus electrolytes was effective in clearing fecal retention in chronic treatment resistant constipation. In another study, 90% of children with treatment resistant constipation were successfully treated with PEG. Administration of enemas to relieve rectal fecal loading has long been practiced in management of childhood constipation. It is important that clinicians use the rectal route, only when oral drugs have failed. Insertion of rectal enema may be extremely

disturbing to the child who might already have anal fissures. Therefore, it needs to be given under sedation to minimize pain and psychological effects. Otherwise, it may disturb the good relationship and understanding between clinician and child, which is essential in the long term management.<sup>11-14</sup>

## CONCLUSION

Constipation is a routine pediatric problem impacting significant proportion of children population worldwide. Exact etiology is unclear in the majority and is thought to be functional in origin. Constipation is a clinical diagnosis and investigations are rarely needed. Key steps in the management include education, rectal disimpaction, maintenance and follow-up.

## REFERENCES

1. Koff SA, Wagner TT, Jayanthi VR: The relationship among dysfunctional elimination syndromes, primary vesicoureteral reflux and urinary tract infections in children. *J Urol* 1998, 160:1019-22.
2. Yazbeck S, Schick E, O'Regan S: Relevance of constipation to enuresis, urinary tract infection and reflux. A review. *Eur Urol* 1987, 13:318-21.
3. Misra S, Lee A, Gensel K: Chronic constipation in overweight children. *JPEN J Parenter Enteral Nutr* 2006, 30:81-4.
4. Corazziari E, Staiano A, Miele E, Greco L; Italian Society of Pediatric Gastroenterology, Hepatology, and Nutrition. Bowel frequency and defecatory patterns in children: a prospective nationwide survey. *Clin Gastroenterol Hepatol.* 2005; 3(11): 1101-06.
5. Fontana M, Bianchi C, Cataldo F, et al. Bowel frequency in healthy children. *Acta Paediatr Scand.* 1989;78(5):682-4.
6. Bardisa-Ezcurra L, Ullman R, Gordon J; Guideline Development Group. Diagnosis and management of idiopathic childhood constipation: summary of NICE guidance. *BMJ.* 2010;340:c2585.
7. van der Wal MF, Benninga MA, Hirasing RA. The prevalence of encopresis in a multicultural population. *J Pediatr Gastroenterol Nutr.* 2005;40(3):345-8.
8. Whitlock-Morales A, McKeand C, DiFilippo M, Elitsur Y: Diagnosis and treatment of constipation in children: a survey of primary care physicians in West Virginia. *W V Med J* 2007, 103:14-6.
9. Borowitz SM, Cox DJ, Kovatchev B, Ritterband LM, Sheen J, Sutphen J: Treatment of childhood constipation by primary care physicians: efficacy and predictors of outcome. *Pediatrics* 2005, 115:873-7.
10. Tabbers MM, DiLorenzo C, Berger MY, Faure C, Langendam MW, Nurko S. Evaluation and Treatment of Functional Constipation in Infants and Children: Evidence-Based Recommendations From ESPGHAN and NASPGHAN. *JPGN* 2014;58: 258-74.
11. Loening-Baucke V, Swidsinski A. Constipation as cause of acute abdominal pain in children. *J Pediatr* 2007;151:666-9.
12. Pashankar DS, Bishop WP. Efficacy and optimal dose of daily polyethylene glycol 3350 for treatment of constipation and encopresis in children. *J Pediatr* 2001;139:428-32.
13. Guest JF, Candy DC, Clegg JP, et al. Clinical and economic impact of using macrogol 3350 plus electrolytes in an outpatient setting compared to enemas and suppositories and manual evacuation to treat paediatric faecal impaction based on actual clinical practice in England and Wales. *Curr Med Res Opin* 2007;23:2213-25.
14. Candy DC, Edwards D, Geraint M. Treatment of faecal impaction with polyethylene glycol plus electrolytes (PEG + E) followed by a double-blind comparison of PEG + E versus lactulase as maintenance therapy. *J Pediatr Gastroenterol Nutr* 2006;43:65-70.

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