FREQUENCY OF IDIOPATHIC FUNCTIONAL CONSTIPATION IN INFANTS AND CHILDREN WITH OVERFLOW DIARRHEA PRESENTING TO HAYATABAD MEDICAL COMPLEX, PESHAWAR

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ABSTRACT

OBJECTIVE: To determine the frequency of idiopathic functional constipation in infants and children aged six months to 18 years presenting with overflow diarrhea.

METHODOLOGY: This study was conducted in Pediatric Department in Hayatabad Medical Complex, Peshawar. A cross-sectional study design was used in this study. The data collected from March 16, 2017 to October 16, 2017. Total of 156 cases were studied according Rome III criteria. All those children having history-based evidence of functional constipation were examined for fecal impaction and were confirmed by abdominal X ray. Abdominal ultrasound was performed in those cases that had abdominal pain and qualified the Rome III criteria on questionnaire.

RESULTS: The mean age of the sample population was 10 ± 2.6 years. Male ratio was slightly higher (55%) than female (45%). It was found that 42% had Idiopathic functional constipation.

CONCLUSION: Constipation is common pediatric problem with diverse abdominal manifestations. Based on the results frequency of idiopathic functional constipation (according to pattern of clinical presentations) was common in Pediatric population aged 6 months to 18 years. Pediatricians can avoid unnecessary investigations by focusing on history and examination.

KEY WORDS: idiopathic functional constipation, overflow diarrhea, infants and children.

INTRODUCTION

Constipation is one of the common problems being presented to the Pediatricians. Prevalence of functional constipation in children ranges from 4-36%[1]and 1.9% to 27.2% in United Kingdom (UK) and United State of America (USA)[2]. Peak incidence of constipation occurs at 2 – 3 years of age, the time of toilet training[1].

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Both the sexes are equally involved below 5 years, girls are more affected after 13 years of age[1]. 33% of children with chronic constipation have no specific abdominal pain[3]. Painful defecation occurs in 92% of constipated children[1-2]. Painful defecation, chronic fecal impaction and fecal incontinence in constipated kids has been observed in different studies[2, 4-7].

Diarrhea in constipated children is due to spurious overflow[1]. Constipation may present with rectal bleeding but in infancy cow milk protein allergy is a more common cause[1, 6]. 9 to 13% of children with chronic constipation had urinary incontinence [1,2].Finding of hard stools in rectum correlates with X ray finding, with sensitivity and positive predicted value exceeding 90%[1, 8-9].

There is increased incidence of overflow diarrhea secondary to idiopathic functional constipation in Pakistan which is mistakenly investigated and treated as chronic diarrhea. The findings of this study would help the pediatrician in treating overflow diarrhea and would reduce the prescription of antibiotic and entamoeba drugs. It would also result in

reduction economic burden on hospital and on patients.

METHODOLOGY

This was a descriptive cross-sectional study conducted in Pediatric Ward, Hayatabad Medical Complex, Peshawar. The duration of the study was six months (*March 16, 2017 to October 16, 2017)*. Non-probability consecutive sampling technique was used to identify target sample. Children ranging from six months to 18 years who presented with constipation withover-flow diarrhea (≤ 8 soft stool per day, followed by the last seven days) with optimum health and no signs of dehydration were included in the study. Children were selected having chronic constipation according to Rome III criteria(for infant and toddlers and 4years to 18 years of age). Children with failure to thrive, any organic cause or constipation as a side effect of drugs were excluded from the study. Similarly, children, in the state of emergency with signs of dehydration and unconsciousness; having abdominal pain, tenderness or distention; non retentive fecal incontinence; worm's manifestation; or abnormal finding on X-ray were all not included in the study. The purpose and benefits of the study were explained to the care-takers and consent was taken from them. All children included in the study were subjected to detail history and examination. Abdominal X-Ray was performed if fecal impaction was found on abdominal examination. Abdominal ultrasound was performed in those cases that had pain abdomen and qualifying the Rome III criteria on the questionnaire. All these information were recorded on a predesigned proforma. Confounder and bias in the study were strictly considered for exclusion.

Statistical analysis was carried out through statistical software SPSS v.20. Mean and standard deviation was calculated for numerical variable like age. Clinical pattern of constipation was categorized based on respondents' age and gender to observe the effect of the variation. The findings at uni-variate level were presented through frequencies and percentages distribution however, chi-square was conducted at bi-variate level where the p-value <0.05 was considered the significance level for this study.

RESULTS

A total of 156 children were included in the study. The results based on statistical analysis were as follows:

The result in Table-1 illustrates the frequencies and percentages distribution based on gender and age of the given population, the mean age of the given population was 10 years with 2.637 SD. The ratio of male subjects was slightly higher than female subjects.

The result displayed in Table-2 shows the IFC frequencies and percentages of the both gender.

Table-3 shows the categorical distribution of IFC with reference to age and gender while simultaneously highlighted the probability value which was less than 0.05 with chi-square test.

Table 1: Demographic parameters of the study population (n=156)

Age, Mean ± SD	10±2.637
Gender, No. (%)	
Male	86 (55%)
Female	70 (45%)
Age, No. (%)	
6 months to year (Male)	13 (15%)
6 months to year (Female)	10 (15%)
2 to 10 years (Male)	58 (66%)
2 to 10 years (Female)	45 (66%)
11 to 18 years (Male)	15 (19%)
11 to 18 years (Female)	15 (19%)

TABLE-2 IDIOPATHIC FUNCTIONAL CONSTIPATION

IFC	FREQUENCY	PERCENTAGES
Yes	66	42%
No	90	58%
Total	156	100%

TABLE – 3 STRATIFICATIONS OF IDIOPATHIC FUNCTIONAL CONSTIPATION BASED ON AGE AND GENDER

IFC based on Age	Yes	No	Total
6 month -1 years	10	13	23
2- 10 years	43	60	103
11- 18 years	13	17	30
IFC based on Gender			
Male	36	50	66
Gender	30	40	90

(P-value = <0.05)

Chi-Square Test

	Value	df	P-value
Pearson Chi-Square	0.016	1	0.03
Linear-by-linear association	1.68	2	0.06

DISCUSSION

Pediatric constipation account for 3-5% of all reference to hospitals and upto 25% pediatric gastroenterologist[1,5]. Worldwide prevalence of constipation in general population ranges from 0.7 to 29.6% in some studies and is frequently associated with encporesis[4,6]. An American study suggested cost of 3.9 billion dollar in a year for management of 5.4 million constipated children[10].

Soylu OB[11]studied 335 constipation children with male to female ratio 167/168, which is almost comparable to our study. Mean age in his study was 4.3 ± 3.5 years and 91% case had functional constipation, which contrast with our study[11].

In study of Khanna et al[12] among 138 case of constipation 85% were found to have functional constipation[12]. 330 constipated children were observed by Amendola S[13], 270

(82%) cases had functional constipation. He suggested that constipation is common among toddlers and preschool children, and in 14% of cases constipation started in infancy. This is comparable in our study as 15% cases were under 1 year and 66% cases were 2-10 years old.

Similarly, frequency of Idiopathic functional constipation was 68% in study by Loening-Baucke et al[14].

CONCLUSION

42% of our patients had functional constipation in children less than 18 years with overflow diarrhea irrespective of the gender group. Pediatricians can avoid unnecessary investigations by focusing on history and examination, which ultimately will benefit the patient and reduce the resources of hospital.

REFERENCES

1. Afzal N, Tighe M, Thomson M. Constipation in children. Ital J Pediatr. 2011;37(1):28.
2. Dehghani, Seyed Mohsen et al. “Clinical Manifestations among Children with Chronic Functional Constipation.” Middle East J Digestive Dis.2015;7(1):31–35.
3. Chang S, Park K, Kang S, Kang K, Na S, Yang H et al. Prevalence, Clinical Characteristics, and Management of Functional Constipation at Pediatric Gastroenterology Clinics. JKoreanMedSci. 2013;28(9):1356
4. Nice.org.uk. Constipation in children and young people: diagnosis and management | Guidance and guidelines | NICE [Internet].
5. Nurko S, Scott S. Coexistence of constipation and incontinence in children and adults. Best Practice & Research Clinical Gastroenterology. 2011;25(1):29-41.
6. Tabbers, Merit M. “Constipation in Children.” BMJ Clinical Evidence 2010 (2010): 0303.
7. Rajindrajith S, Devanarayana N. Constipation in Children: Novel Insight Into Epidemiology, Pathophysiology and Management.JNeurogastroenterolMotil. 2011;17(1):35-47.
8. Pensabene L, Buonomo C, Fishman L, Chitkara D, Nurko S. Lack of Utility of Abdominal X-rays in the Evaluation of Children With Constipation: Comparison of Different Scoring. Methods. JPediatrGastroenterolNutr. 2010;51(2):155-159.
9. Chang L, Lembo A, Lavins B, Shiff S, Hao X, Chickering J et al. The impact of abdominal pain on global measures in patients with chronic idiopathic constipation, before and after treatment With linaclotide: a pooled analysis of two randomized, double-blind, placebo-controlled, phase 3 trials. Alimentary Pharmacology & Therapeutics. 2014;40(11-12):1302-1312
10. Guerra P. Pediatric functional constipation treatment with Bifidobacterium -containing yogurt: A crossover, double-blind, controlled trial. World J of Gastroenterol 2011;17(34):3916.
11. Soylu OB. Clinical Findings of Functional and Secondary Constipation in Children. Iranian J Peds.2013;23(3):24
12. Khanna V, Poddar U, Yachha SK. Constipation in Indian children: need for knowledge not the knife. Indian Pediatr J. 2010;47:1025-30.
13. Amendola S, De-Angelis P, Dall’Oglio L, Di Abriola GF, Di Lorenzo M. Combined approach to functional constipation in children. J Pediatr Surg. 2003;38:819-23
14. Loening-Baucke V. Constipation in early childhood: Patient characteristics, treatment and long-term follow up. Gut 1993;34:1400-4.