

Evaluation of Management of Functional Constipation in Children among South Indian Population - Cross Sectional Study

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Abstract

Functional constipation is a common bowel disorder in the community which affects one in six children. The overall prevalence of constipation was 14.7% and 4.6% for FC while only 1.8% of respondents reported laxative use every day. The aim of this study is to evaluate the current trend of diagnosing and treatment of functional constipation among children. After getting informed consent, we reviewed the prescription of these patients, and data was collected using a semi-structured pre-validated questionnaire. Data were entered in Microsoft excel 2010 and statistical analyses were done using SPSS 17. The total number of cases included in the study was 138. Of which majority of cases are in the age group of below 5 years with a female preponderance. Almost all the cases reported laxatives use for the relief of constipation along with few dietary modifications. Lactulose and PEG played a major role in FC. Dietary habits and physical activity also played an important role as FC children reported low fruit and vegetable consumption, high fast-food consumption, and low levels of physical activity.

INTRODUCTION

Constipation is one of the most common childhood problems that occur regularly in paediatric emergency services. The prevalence of constipation depends on the age group. The highest incidence of constipation occurs between the ages of 2 and 4.1 Constipation is defined as "a delay or difficulty in defecation that lasts for more than 2 weeks and is sufficient to cause significant distress to the patient."² Constipation often causes more pain to parents and other caregivers than to affected children. Many caregivers are worried that constipation in their children is a sign of serious medical problems.³ Constipation is defined as functional constipation in the absence of an underlying organic cause, which occurs in up to 95% of children. It is not usually due to an underlying systemic cause or an anatomical defect. It often has many factors including environmental conditions, stress, diet, coping skills, and social support.⁴

Holding stool in the colon often dehydrates the stool and makes it harder and harder to pass stools and leads to straining of the bowel wall. This cycle of stool retention, water removal, and stretching of the intestinal wall results in hard stools and additional retention.⁵ Functional constipation is a clinical diagnosis based on history and physical examination. Parents often describe hard and small stools as "like small pebbles," while others describe large, infrequent stools as "so large that I can't believe it's coming out of my child". Medical history should include questions about neurological abnormalities, surgery, and any chronic

conditions such as hypothyroidism, Hirschsprung disease, or cystic fibrosis that may be contributing to bowel difficulties. A complete physical examination is needed for making the correct diagnosis.

TSH can screen for hypothyroidism and lead levels which can be helpful for lead poisoning. Hirschsprung disease is always something to consider, especially in very young, persistent, or atypical cases. Contrast enema may aid in the diagnosis, and referral for biopsy is also an option that will more firmly rule out the diagnosis of Hirschsprung's disease.⁶ Imaging studies may be helpful in excluding other suspicious disorders but are not necessary for the diagnosis of functional constipation. Abdominal x-rays can help diagnose fecal compression, especially in children who have difficulty with abdominal examination but are not routinely performed.⁷⁻¹⁰

The first stage of treatment involves the elimination of hard stools from the colon, also known as disimpaction. Eliminating hard, impacted stool allows the colon to begin returning to normal size and function. In the past, manual excision, suppository placement, and enema were common methods during this phase of treatment, followed by oral maintenance therapy.¹¹

The aim of this study is to evaluate the current trend of diagnosing and treatment of functional constipation among children of the south Indian population.

Aim & objectives

- i. To evaluate the current trend of diagnosing and treating functional constipation among children of the south Indian population.

Secondary Objectives

- i. To assess the incidence of adverse drug reactions to chronic use of laxatives in functional constipation cases.
- ii. To analyze dietary modification in children with functional constipation
- iii. To assess the pattern of using other remedies in functional constipation

Methodology

This is an observational study conducted among the south Indian population between September 2021 to February 2022 and approved by an institutional ethical committee. Those who were diagnosed with functional constipation and already on treatment for FC between 1-12 years of age were included in the study. The prescriptions of these patients were reviewed, and primary data were collected using proforma. Secondary data was collected using a semi-structured pre-validated questionnaire to their parents or guardians of respective cases. All the details were noted down in the specially structured proforma including demographic data, drugs prescribed, frequency, route, formulation, duration, brand or generic drugs, adverse events due to use of laxatives, investigation, dietary modifications, and use of other alternative remedies. Data were entered in Microsoft excel 2010 and statistical analyses were done using SPSS 17.

Results and discussion

The total number of cases included in the study was 138. Of which majority of cases are in the age group of below 5 years (Fig-1) with a female preponderance (Fig-2)

FIG 1- AGE DISTRIBUTION

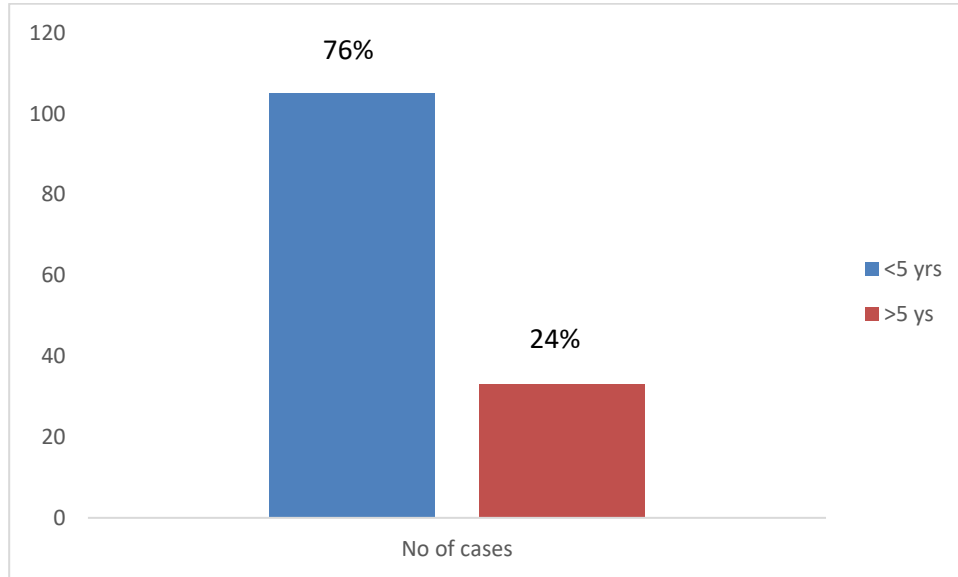
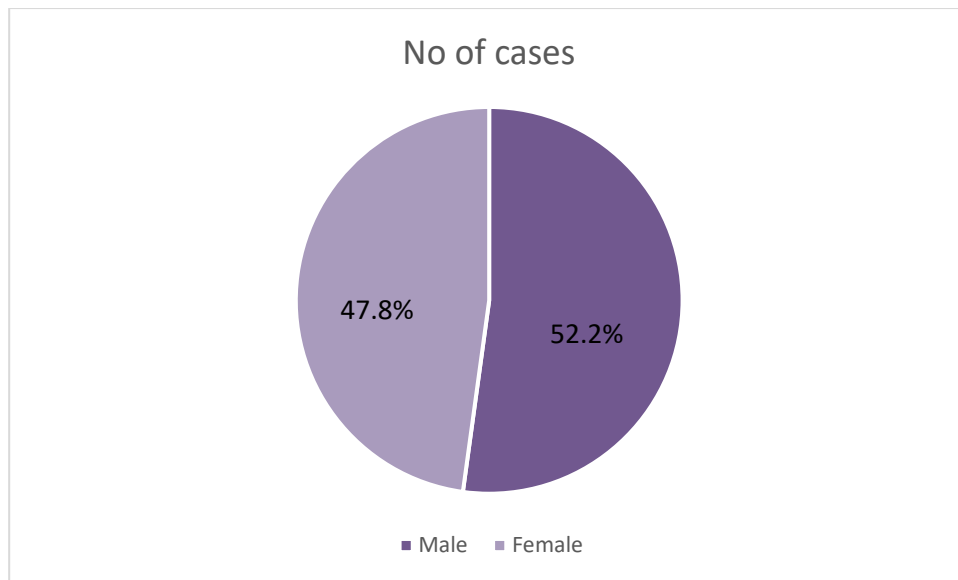


FIG 2 - GENDER DISTRIBUTION

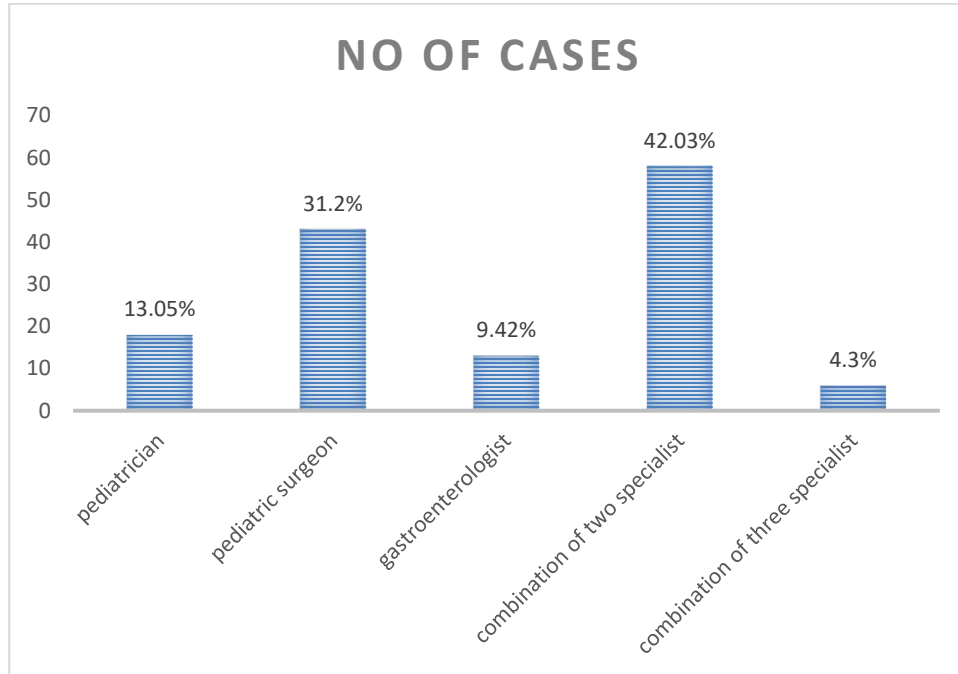


In our study, the diagnosis was made by history and examination alone but many of the cases went for thyroid function test (Tab -1). So, it implies that thyroid disorder should be ruled out for pediatric constipation. Most of the cases consulted a combination of specialists for treatment (Fig-3).

TABLE 1 – INVESTIGATIONS UNDERWENT FOR DIAGNOSIS

Investigations	No of cases	Percentage
Thyroid function test	52	37.6%
USG abdomen & pelvis	32	23.2%
X-ray abdomen	9	6.5%
Barium study	2	1.5%
No investigations Only history, symptoms, and signs	43	31.2%

FIG 3 – SPECIALIST CONSULTED



For the treatment of pediatric functional constipation most common drugs used are lactulose and polyethylene glycol (PEG) and even a few are treated with multiple combinations of drugs (Tab-2). Oral liquid drugs are preferred over the rectal route (Fig-4) and were given twice a day dose for most of the cases (Fig-5). Duration for the treatment of functional constipation varies from 6 months to two years but in our study the greatest number of cases treated for a year (Fig-6) and have experienced abdominal pain and cramps as a common adverse effect (Fig-7).

TABLE 2 – LAXATIVES USED

Drugs used	No of cases	Percentage
Lactulose	37	26.8%
PEG	34	24.6%
Lactitol	8	5.8%
Milk of magnesia + liquid paraffin	12	8.7%
Enema + lactulose	4	2.9%
Dulcolax + lactulose	7	5.1%
Combination of 3 drugs	36	26.1%

FIG 4 – ROUTE OF DRUG ADMINISTRATION

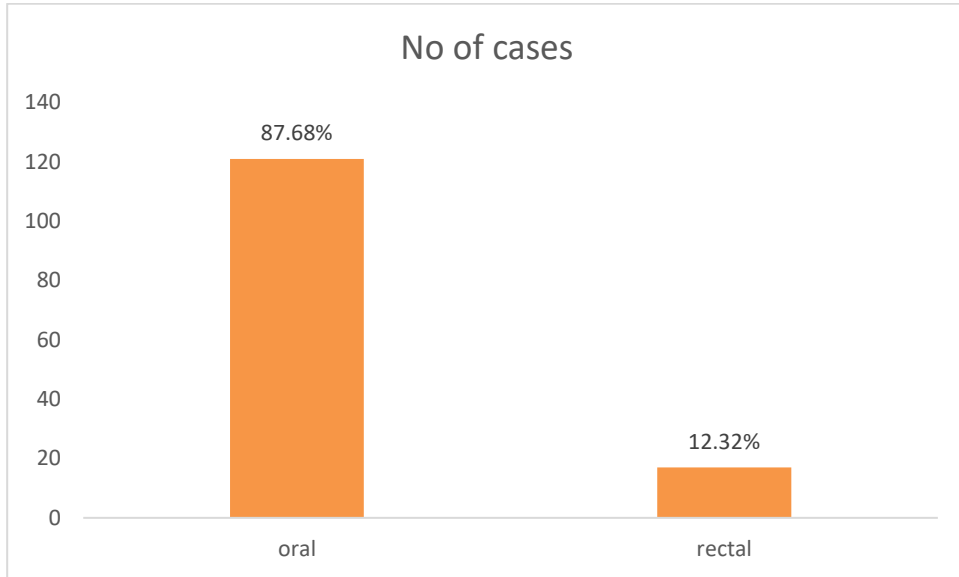


FIG 5 - FREQUENCY OF DRUG ADMINISTRATION

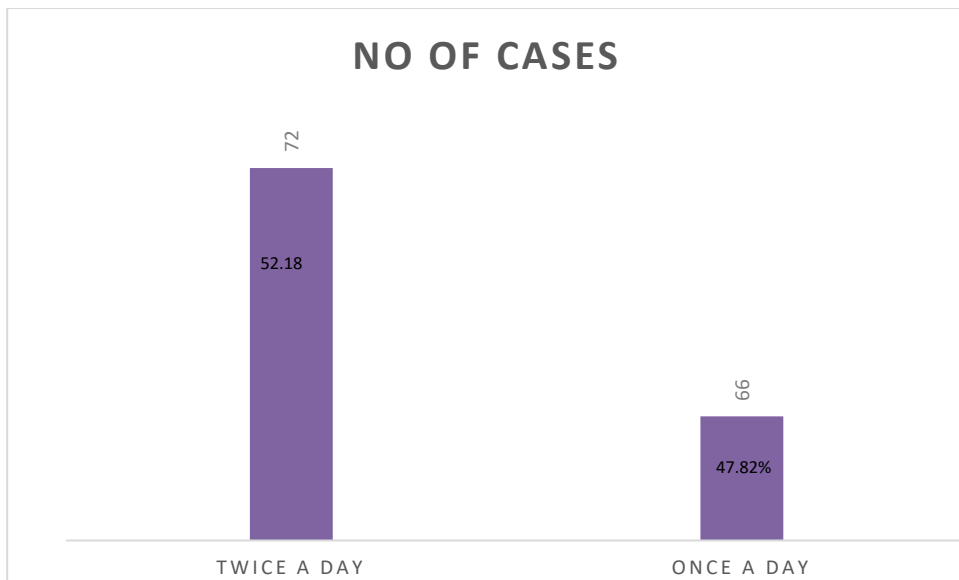


FIG 6 – DURATION OF TREATMENT

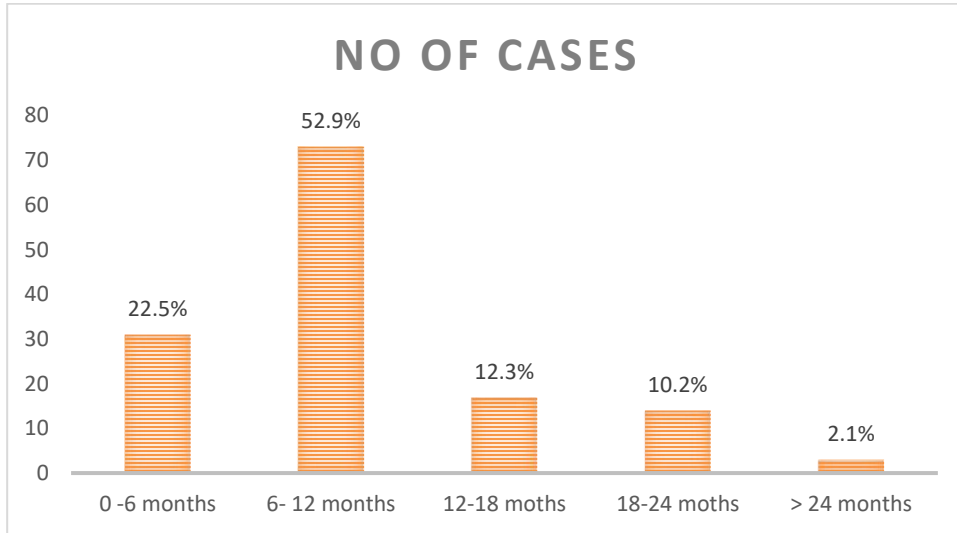
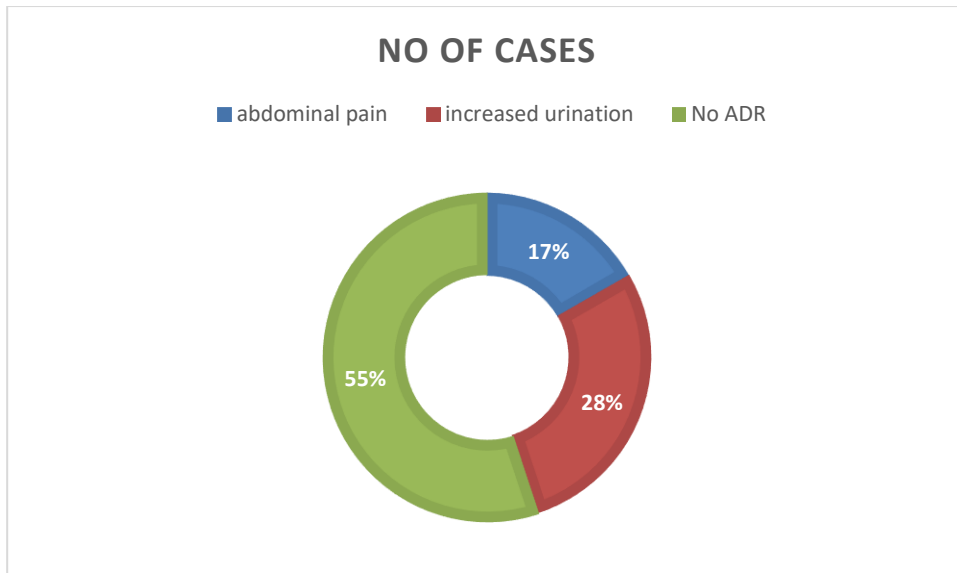


FIG 7 – ADVERSE DRUG REACTIONS



In this study, modification in the diet was also followed by many cases like decreased milk intake, avoided refined flour recipes, and increased fiber diet which was even advised by the consultant (Tab-3). Few cases in our study shifted to other medical practices or even continued along with allopathic medicines like Ayurveda and homeopathy (Tab-4).

TABLE 3 – DIETARY MODIFICATIONS

Dietary modifications	No of cases	Percentage
Reduced milk intake	57	41.35
Stopped biscuits	17	12.3%
Reduced bakery items and stopped refined flour recipes	21	15.2%
Increased fiber diet	15	10.9%
Increase intake of hot water	19	13.8%
No diet modification	9	6.5%

TABLE 4 – ALTERNATIVE PRACTICES

Alternative medications	No of cases	Percentage
Ayurvedic preparation	39	28.2%
Home remedies	41	29.7%
Homeopathy	22	15.9%
No alternative medications	36	26.2%

Conclusion

Functional constipation is one of the emergency conditions in the pediatric age group which has to be treated immediately and promptly. Thorough physical examination and history hold promising results in diagnosing functional constipation for 99% of cases. But before starting treatment the patients must be excluded from organic diseases like thyroid disorder, Hirschsprung diseases, etc. The mainstay of treatment is by use of laxatives like lactulose and polyethylene glycol. Even though laxatives are safe but long-term side effects must be monitored.

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Ethical approval: The study was approved by the Institutional Ethics Committee

Conflict Of Interest

The authors declare no conflict of interest.

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