

Recurrent Abdominal Pain in Children Attending Paediatrics OPD

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Abstract

Background: Recurrent abdominal pain (RAP) is common in children. One to two of every 10 children will experience it at some time. Children with recurrent abdominal pain are often anxious or depressed. The original definition of RAP, published in 1958, included both organic and functional pain. **Subjects and Methods:** This is prospective, descriptive and observational study conducted at Viswa Bharathi Medical College and General Hospital from September 2017 to May 2018 among 90 children with RAP. Patients of age group of 4 to 14 years attending the paediatric OPD of tertiary care teaching hospital was included in the study. Children with age less than 4 years and more than 14 years not meeting the criteria of RAP were excluded from the study. Children with organic causes of RAP have been treated according to corresponding reason. **Results:** Occurrence of abdominal pain every day in ORAP was 10 and 32 NORAP children, and once per week in organic ORAP was 3 and 14 NORAP children. Duration of a pain episodes most of the day in ORAP was 11 and 21 NORAP children. Severe pain can see in 9 ORAP and 24 NORAP, and mild pain in 2 ORAP and 19 NORAP. Whereas, site of pain especially in periumbilical region in ORAP was 5 and 28 NORAP children, and lower abdomen pain in organic ORAP was 4 and 23 NORAP children. Moreover, 2 months duration of disease in ORAP was 17 and 3 NORAP children. In addition, presence of bloating in ORAP was 6 and 22 NORAP children, and absence of bloating in ORAP was 11 and 51 NORAP children. Presence of early satiety in in ORAP was 8 and 19 NORAP children, and absence of satiety in ORAP was 9 and 54 NORAP children. **Conclusion:** Recurrent abdominal pain (RAP) in children with careful history and examination, clear explanation and follow-up and a commitment from parent and child to stop the condition limiting normal activities, good results are obtained for children without referral, drugs or extensive testing.

Keywords: Recurrent abdominal pain, Organic pain, Functional pain.

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Introduction

Recurrent abdominal pain (RAP) is common in children. One to two of every 10 children will experience it at some time. Children with recurrent abdominal pain are often anxious or depressed. The original definition of RAP, published in 1958, included both organic and functional pain.^[1] RAP is most often considered functional (nonorganic) abdominal pain, but an organic cause is found in 5% to 10% of cases. It presents commonly in general practice and it causes a great deal of school absence and considerable anxiety. RAP is believed to be a functional gut-brain interaction disorder (FGID) caused by altered feedback mechanisms between the gut and central pain pathways. There are several defined RAP patterns in children, of which paediatric irritable bowel syndrome (IBS) is the most common.^[2]

Further workup is warranted in children who have RAP and fever, vomiting, blood in the stool, more than three alarm symptoms, or a history of urinary tract infections. Physical examination findings that should prompt further workup

include weight loss or failure to grow; jaundice; costovertebral tenderness or back pain with lower extremity neurologic symptoms; liver, spleen, or kidney enlargement; an abdominal mass; or localized tenderness on abdominal examination.^[3] Workup may include complete blood count, erythrocyte sedimentation rate, C-reactive protein level, fecal guaiac testing, fecal ova testing and urinalysis. Abdominal radiography can be helpful for diagnosing obstruction or constipation.^[4] Abdominal ultrasonography identifies an abnormality in up to 10% of children with RAP who meet criteria for further workup, compared with 1% of those who do not meet these criteria. Functional abdominal pain is a clinical diagnosis and no workup is needed.^[5]

Management of functional abdominal pain focuses on improving quality of life, reducing parent and child concerns about the seriousness of the condition, and reducing the disability associated with pain rather than complete resolution of pain. Although evidence is lacking for most pharmacologic treatments of functional abdominal pain, psychological therapies such as cognitive behavior therapy and hypnotherapy have been shown to be beneficial.

Subjects and Methods

This is prospective, descriptive and observational study conducted at Viswa Bharathi Medical College and General Hospital from September 2017 to May 2018 among 90 children with RAP attending the paediatric OPD of tertiary care teaching hospital.

Inclusion criteria

Patients of age group of 4 to 14 years of either gender study with RAP.

Exclusion criteria

Children with age less than 4 years and more than 14 years not meeting the criteria of RAP were excluded from the study. Children with organic causes of RAP have been treated according to corresponding reason. Organic RAP was said to be present when;

- There was an organic cause documented
- There was both clinical and laboratory improvement with treatment and
- There was sustained clinical remission for at least three months after therapy.

The patients who did not satisfy the above criteria were considered to have Non-organic RAP and were compared with an equal number of age and sex-matched controls, that comprised of children attending the Paediatric Outpatient Department

A detailed history and clinical examinations, complete haemogram, urine for routine analysis as well as culture and stool examination were done in all cases. Other investigations like chest X-ray, ultrasonography performed where ever necessary.

Statistical Analysis:

All the data obtained were presented in percentages using Microsoft excel.

Results

Out of 90 patients of RAP, sex distribution is unequal with male predominance (67.7%) and less female (32.3%).

Table 1: Distribution of the Gender

Gender	N=90 (Percentage of cases)
Male	61 (67.7%)
Female	29 (32.3%)

Table 2: Distribution of Age group.

Age group (in years)	N=90 (Percentage of cases)
4-6	43 (47.7%)
7-10	28 (31.1%)
11-14	19 (21.1%)

Although in this study, age group was in the following order by decreasing 4-6 years old (47.7%), followed by 7-10 years old (31.1%) and 11-14 years old (21.1%).

[Table 3] In our study, Occurrence of abdominal pain every day in ORAP was 10 and 32 NORAP children, and once per week in organic ORAP was 3 and 14 NORAP children. Duration of a pain episodes most of the day in ORAP was 11 and 21 NORAP children. Severe pain can see in 9 ORAP and 24 NORAP, and mild pain in 2 ORAP and 19 NORAP. Whereas, site of pain especially in periumbilical region in ORAP was 5 and 28 NORAP children, and lower abdomen pain in organic ORAP was 4 and 23 NORAP children. Moreover, 2 months duration of disease in ORAP was 17 and 3 NORAP children. In addition, presence of bloating in ORAP was 6 and 22 NORAP children, and absence of bloating in ORAP was 11 and 51 NORAP children. Presence of early satiety in in ORAP was 8 and 19 NORAP children, and absence of satiety in ORAP was 9 and 54 NORAP children.

Furthermore, in our results loss of appetite in ORAP was 11 and 52 NORAP children. Presence of nausea in ORAP was 6 and 14 NORAP children. Presence of vomiting in ORAP was 6 and 16 NORAP children. Defecation of loose stools in ORAP was 9 and 14 NORAP children. Interference with sleep in ORAP was 12 and 29 NORAP children, and non-interference with sleep in ORAP was 5 and 44 NORAP children. Headache in ORAP was 6 and 16 NORAP children. School absenteeism in ORAP was 12 and 29 NORAP children. Photophobia was seen in ORAP was 13 and 59 NORAP children. Finally, pallor was seen in ORAP was 4 and 14 NORAP children.

Discussion

Recurrent abdominal pain (RAP) in children is defined as at least three episodes of pain that occur over at least three months and affect the child's ability to perform normal activities. However, with careful history and examination, clear explanation and follow-up and a commitment from parent and child to stop the condition limiting normal activities, good results are obtained for children without referral, drugs or extensive testing.^[6]

The pathophysiology involves a dysregulation of visceral nerve pathways, leading to visceral hyperalgesia. Infective, inflammatory or psychological triggers may initiate this sensitisation.^[7,8] The onset of paediatric IBS frequently follows an episode of acute gastrointestinal inflammation (infectious or non-infectious).^[9] RAP is additionally affected by temperament and by family and school environments (the bio-psychosocial model). Less effective mechanisms of coping with stress may contribute to pain and to associated anxiety and depression Poor diet, poor fluid intake and lack of exercise can contribute to RAP.^[10]

For all types of RAP in children, the primary goals of management are improving quality of life, reducing parent and child concern about the seriousness of the condition, and

reducing disability associated with pain rather than complete resolution of pain.^[11] It is important to validate the child's pain but reassure the family when there is no evidence of serious underlying pathology. Support and reassessment should be offered if alarm symptoms arise. Parents should be encouraged to avoid reinforcing RAP symptoms with secondary gain, such as missing school or removal from routine activities because of pain, and to return to a normal routine when possible.^[12] If appropriate, the child should be included in identifying psychological factors that might worsen the symptoms, such as bullying; peer coercion; stress or anxiety; sexual, emotional, or physical abuse; or domestic violence.^[13]

Table 3: Characteristics: Organic RAP Versus Non-organic RAP

Parameters	Organic RAP n=17 (%)	Non-organic RAP n=73 (%)
Occurrence abdominal pain		
Once per week	3 (17.6%)	14 (19.1%)
Several times per week	4 (23.5%)	27 (36.9%)
Everyday	10 (58.8%)	32 (44.3%)
Duration of a pain episodes		
Less than 1 hour	1 (5.8%)	24 (32.8%)
1-2 hours	2 (11.7%)	21 (28.7%)
3- 4 hours	3 (17.6%)	7 (9.5%)
Most of the day	11 (64.7%)	21 (28.7%)
Severity of pain		
Mild	2 (11.7%)	19 (26.0%)
Moderate	6 (35.2%)	30 (41.0%)
Severe	9 (52.9%)	24 (32.8%)
Site of pain		
Upper abdomen	2 (11.7%)	5 (6.8%)
Periumbilical	5 (29.4%)	28 (38.3%)
Lower abdomen	4 (23.5%)	23 (31.5%)
Other	6 (35.2%)	17 (21.9%)
Duration of the disease		
2 months	17 (100%)	3 (4.1%)
3 months	0	5 (6.8%)
4-11 months	0	3 (4.1%)
More than 12 months	0	62 (84.9%)
Bloating		
Yes	6 (35.7%)	22 (32.0%)
No	11 (64.2%)	51 (69.8%)
Early satiety		
Yes	8 (47.0%)	19 (26.0%)
No	9 (52.9%)	54 (73.9%)
Anorexia		
Yes	11 (64.2%)	52 (71.2%)
No	6 (35.7%)	21 (28.7%)
Nausea		
Yes	6 (35.7%)	14 (19.1%)
No	11 (64.2%)	59 (80.8%)
Vomiting		
Yes	6 (35.7%)	16 (21.9%)
No	11 (64.2%)	57 (78.0%)
Constipation		
Yes	5 (29.4%)	52 (71.2%)
No	12 (70.5%)	21 (28.7%)
Loose stools		
Yes	9 (52.9%)	14 (19.1%)
No	8 (47.0%)	59 (80.8%)

Interference with sleep		
Yes	12 (71.4%)	29 (39.7%)
No	5 (28.5%)	44 (60.2%)
Disturbance in daily activities		
Yes	13 (76.4%)	33 (45.2%)
No	4 (23.5%)	40 (54.7%)
Headache		
Yes	6 (35.2%)	16 (21.9%)
No	11 (64.7%)	57 (78.0%)
School absenteeism		
Yes	12 (71.4%)	29 (39.7%)
No	5 (28.5%)	44 (60.2%)
Photophobia		
Yes	13 (76.4%)	59 (80.8%)
No	4 (23.5%)	14 (19.1%)
Pallor		
Yes	4 (23.5%)	14 (19.1%)
No	13 (76.4%)	59 (80.8%)

In children with functional abdominal pain, the use of probiotics, such as Lactobacillus, reduces the intensity and frequency of abdominal pain and is safe in children.^[14] There is a lack of evidence for the relative biologic activity and effectiveness of different commercial preparations.^[15] Synbiotics are dietary supplements that combine probiotics and prebiotics (a supplement that alters resident bacteria). Lactol, a synbiotic that includes Bacillus coagulans (probiotic) and fructooligosaccharides (prebiotic), shows mixed results for functional abdominal pain, with initial improvement but no difference after 12 weeks.^[16] Lactol with pH-dependent peppermint oil (187 mg three times per day) may have benefit.^[17]

Although treatment focused on a diagnosis does not reliably improve RAP, the following interventions may be beneficial in conjunction with supportive management.^[18]

Acid Reflux: Antacids and histamine H2 antagonists are used in children, although their benefit has not been well studied.

Dyspepsia: Proton pump inhibitors, including lansoprazole and pantoprazole are safe and effective for the treatment of dyspepsia in children and adolescents with improved pain in more than 70% of patients.^[19]

Celiac Disease: A gluten-free diet should be initiated. Children with inflammatory bowel disease should be referred to a pediatric gastroenterologist for anti-inflammatory medications and biologics.^[20]

Chronic Constipation: Treatment includes dietary interventions, such as increased fluids, fiber, and prune, pear, and apple juices; behavioral interventions, including regular toilet time for five or 10 minutes after meals and use of stool diaries; reward systems; and parental education.^[21]

Conclusion

The main aim of management of children with RAP is to teach the child to cope with the pain and to improve the child's quality of life. A multidisciplinary team approach is

the most ideal in dealing with this type of complex problem. Medical treatment with GI prokinetic or antispasmodic medications has been proven to be disappointing. Both the child and the parents should be counselled on stress coping strategies and provided with ample reassurance that there is no serious organic disease.

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