

Study of Recurrent Abdominal Pain in Children Below 18 Years in North Karnataka Population

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Abstract:

Background: Recurrent abdominal pain is a quite common health problem for 10 to 15% of school-going children and affects their everyday activities and careers. There are multiple aetiologies associated with RAP. Hence, a detailed study is essential to rule out the cause.

Method: 130 school-going children of both sexes under the age of 18 years. Blood examination included CBC, LFT, urine analysis, culture, stool examination for cyst, ova, and parasite; Radiological examinations (x-ray, USG, and CT scan of the GIT if necessary) were carried out.

Results: Clinical manifestations were: 40 (28.8%) had pallor, 28 (21.5%) had constipation, 31 (23.8%) had lymphadenopathy, 22 (16.9%) had UTI, 7 (5.38%) had hepatomegaly, and 2 (1.53%) had splenomegaly.

Conclusion: In this pragmatic study, there are much different and interacting aetiology. Asymptom-based sub classification may be helpful for clinical management, and the encouragement of family members will also play a vital role in curing RAP in children.

Keywords: Recurrent Abdominal Pain (RAP), Apley's Criteria, Irritable Bowel Syndrome (IBS), LFT, Psychogenic.

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Introduction

Recurrent abdominal pain in children below 18 years old is perhaps the most common painful healthy problem among school-going children in India and abroad. J. Apley, a British paediatrician, studied the abdominal pain among the children extensively and observed that approximately 10 to 15% of school-going children get recurrent episodes of abdominal pain [1]. He named these complex symptoms as recurrent abdominal pain (RAP) syndrome. He also suggested at least three episodes of abdominal pain, severe enough to affect the activities of children for longer than three months [2]. Even the term chronic was also used when referring to RAP. Each episode of pain is distinct and separated by periods of well-being.

Female children were affected more than male children [3]. Abdominal pain is sometimes a threatening disease. It can also have harmless

causes, but it can impair the children's self-perception of health or interfere in every day activity [4]. This affects their studies, hobbies like sports, and careers. It is considered non-organic, psychogenic origin, and becomes a challenge to paediatricians. Hence, an attempt was made to evaluate it by using USG, CT scan, and haematological examination.

Material and Method

130 children of both sexes regularly visited the paediatrics department of the ESI Medical College hospital in Kalaburgi (585105), Karnataka were studied.

Inclusive Criteria: Children having recurrent abdominal pain (RAP) aged between 6-18 years who fulfilled Apley's criteria for RAP were selected for study.

Red flags on history	Red flags on physical examination
Localized pain away from umbilicus	Loss of weight or growth retardation
Pain awakening the child at night	Organomegaly
Pain associated with changes in bowel habits, dysuria, rash arthritis	Localized abdominal tenderness particularly away from the umbilicus

Occult bleeding	Joint swelling, tenderness or warmth
Repeated vomiting especially bilious	Pallor rash hernias of the abdominal wall
Constitutional symptoms like recurrent fever, loss of appetite, lethargy	

Exclusion Criteria: Children with congenital anomalies like volvulus, megacolon, or retroviral diseases were excluded from the study.

Methods: Blood examination, CBC, LFT, urine analysis, culture, stool examination for cyst ova, parasite, x-ray, USG abdomen, and lower GIT investigations were carried out if necessary. Moreover, classification of RAP by symptomatology according to Rome-II criteria, viz., functional dyspepsia, IBS (Irritable Bowel Syndrome), functional abdominal pain, and abdominal migraine Aerophagia was also taken into consideration.

The duration of the study was from November 2019 to December 2020.

Statistical analysis: anthropological parameters of BMI and dietary habits of various diseases were classified and grouped by percentage. The ratio of male and female children was 2:1.

Observation and Results

Table 1: Anthropological parameters in RAP children

- Height – 76 (58.4%) had 147-150 cm, 54 (41.52%) had 151-157
- Weight (Kg) – 76 (58.4%) had 40 to 44 kg, and 46 (35.3%) 45 to 48 kg.
- BMI - 82 (63.07%) had 18.2 to 19.2, 40 (36.92%) had 19.3 to 20.2.

Table 2: Study of dietary habits

- 43 (33%) vegetarian, 37 (28.4%) non-vegetarian, 50 (38.4%) mixed food habits.

Table 3: Clinical Manifestations of RAP children

- 40 (30.7%) pallor, 28 (21.5%) constipation, 31 (23.8%) Mesenteric lymphadenopathy, 22 (16.9%) urinary tract infections, 7 (5.38%) hepatomegaly, and 2 (1.53%) splenomegaly.

Table 1: Anthropological parameters in RAP Children (No of patients 130)

Sl No	Parameters	No of patients	Percentage
1	Height a - 147 to 150	76	58.4
	b - 151 to 157	54	41.5
2	Weight a - 40 to 44	84	64.6
	b - 45 to 48	46	35.3
3	BMI (Body mass Index) 18.2 to 19.2	82	63.07
	19.3 to 20.2	48	36.92

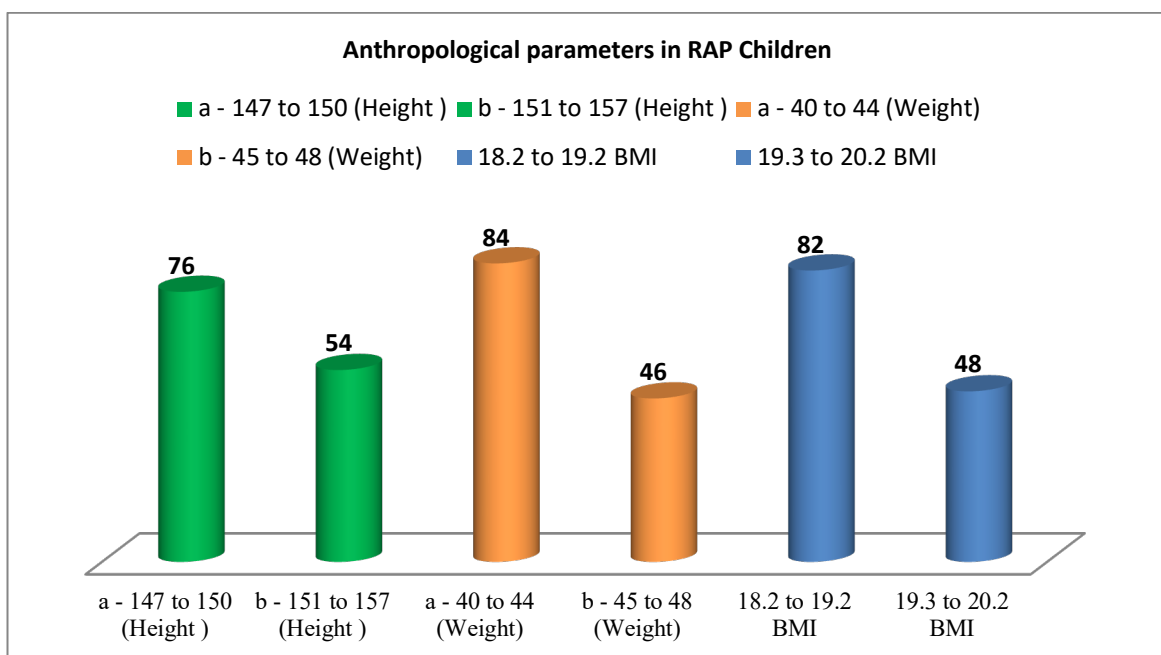


Figure 1: Anthropological parameters in RAP Children

Table 2: Study of Dietary habits in RAP children (No of patients 130)

Sl No	Dietary habit	No of patients	Percentage
1	Vegetarian	43	33.07
2	Non-vegetarian	37	28.4
3	Mixed food habits	50	38.4

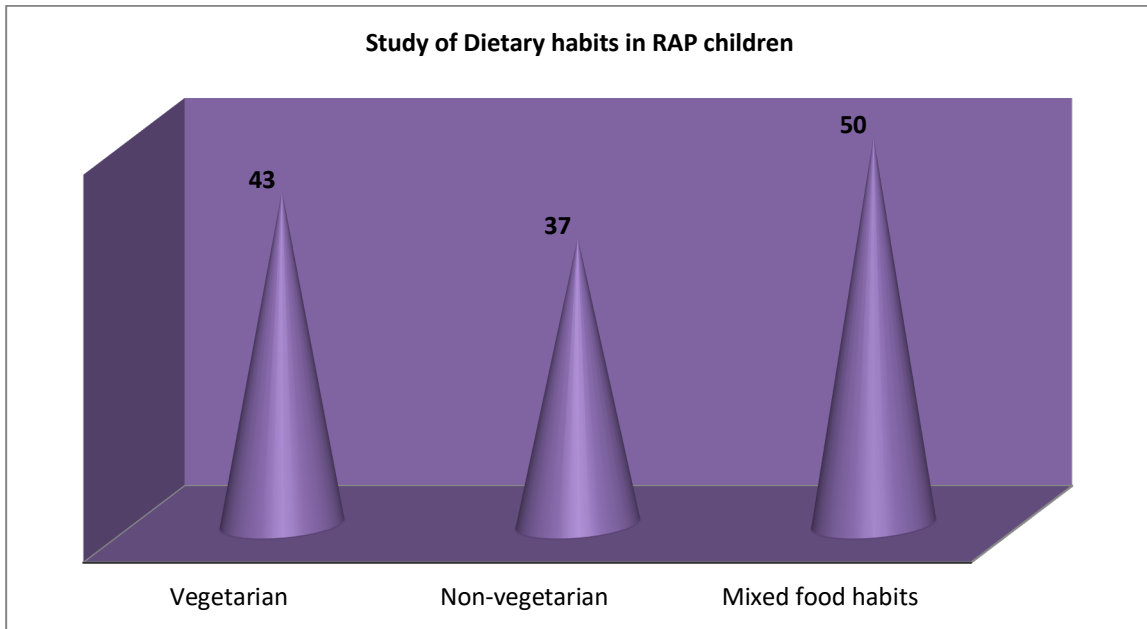


Figure 2: Study of Dietary habits in RAP children

Table 3: Clinical Manifestations of RAP in children (No of patients 130)

Sl. No	Clinical manifestations	No of patients	Percentage
1	Pallor	40	30.7
2	Constipation	28	21.5
3	Mesenteric lymphadenopathy	31	23.8
4	Urinary tract Infection (UTI)	22	16.9
5	Hepatomegaly	7	5.38
6	Splenomegaly	2	1.53

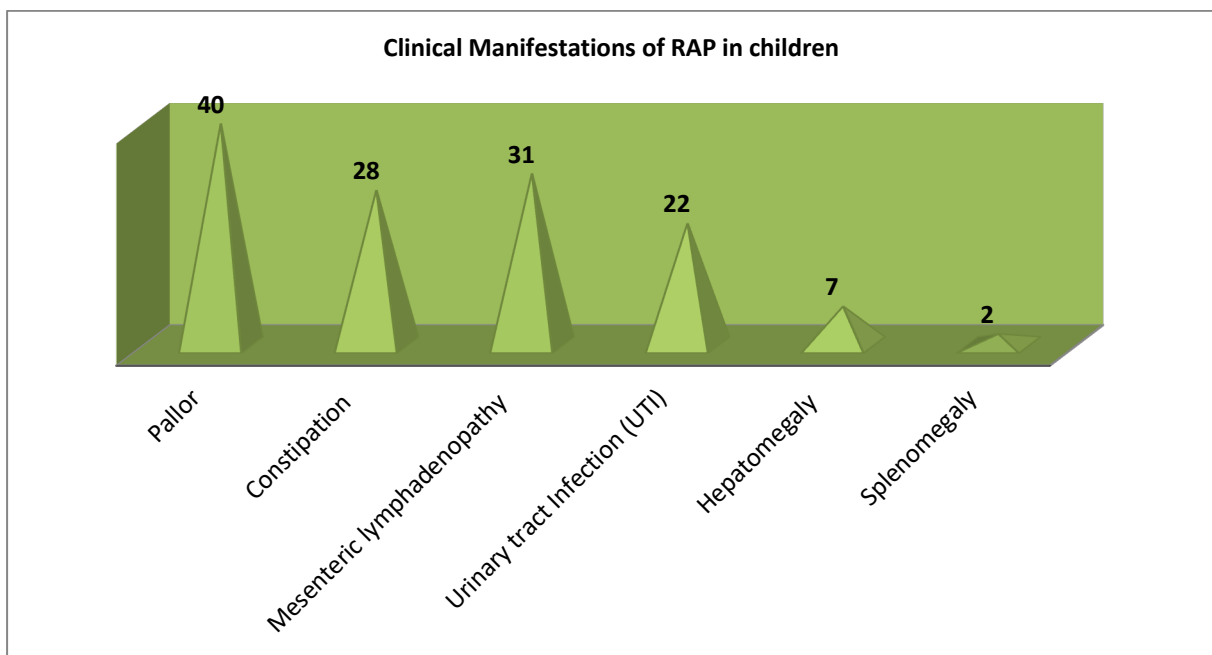


Figure 3: Clinical Manifestations of RAP in children

Discussion

In the present study of RAP in north Karnataka Population. Anthropological parameters were Height (cm) 76 (58.4) had 147 to 150 cm, and 54 (41.5%) had 151 to 157 cm. The weight (kg) 84 (64.6%) had 40–44 kg, 46 (35.3%) had 45–48 kg, The BMI study found that 82 (63.07%) had 18.2 to 19.2, and 48 (36.9%) had 19.3 to 20.2 BMI (Table 1). In the study of dietary habits, 43 (33.07%) were vegetarian, 37 (28.4%) were non-vegetarian, and 50 (38.4%) had mixed food habits (Table 2).

The clinical manifestations of RAP children were: 40 (30.7%) had pallor, 28 (21.5%) had constipation, 31 (23.8%) had mesenteric lymphadenopathy, 22 (16.9%) had urinary tract infection, 7 (5.38%) had hepatomegaly and 2 (1.53%) had splenomegaly (Table 3). These findings are more or less in agreement with previous studies [5,6,7]. Pallor is associated with tiredness, anorexia, dizziness, headache, vomiting, fever, diarrhoea, and constipation as [8]. Intact RAP does not lend itself to a single model of causation. Organic pathology cannot be identified in the majority of children with RAP [9]. Organic disorders observed in RAP were UTI inflammation (chron's disease) or distension of the abdomen, as well as intestinal parasites [10]. It is also noted that repeated eating habits, consumption of junk foods, and the burden of school studies may be the causative factors of RAP.

The abdomen is also called the magic box because it consists of many systems, like the vascular, urogenital, exocrine, and endocrine systems. Hence, it's a challenge for clinicians to diagnose RAP without haematological and radiological support. RAP does not occur in pre-school children or children below 5 years old. Hence, RAP might be aggravated by psychological difficulties experienced by children during school [8].

It was also confirmed that RAP was least observed during summer holidays, and many children got symptoms on their return to school after vacation [11]. It was also reported that such patients will develop irritable bowel syndrome (IBS) in the future. About 25 to 29% cases of RAP patients were recorded during school days.

Hence, apart from medical treatment, sympathy, affection, and love by the teachers and non-teaching staff towards school-going children will have a better prognosis in treating RAP.

Summary and Conclusion

The present study of RAP in children below 18 years had GIT diseases, but in the majority of cases

of RAP, prokinetic or anti-spasmodic medications have proven to be disappointing.

Hence, both children and parents should be counselled on stress coping strategies and assured that RAP is not a serious organic disease. Modification of lifestyle and dietary habits is quite helpful in treating RAP in children.

Limitation of study: Due to the tertiary location of the research centre, the small number of patients, and the lack of the latest techniques, we have limited findings and results.

This research paper has been approved by the ethical committee of ESI Medical College Hospital Kalaburgi (585105).

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