FUNCTIONAL PAIN ABDOMEN IN CHILDREN

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Abstract

Background: Chronic abdominal pain is one of the most common problem dealt in day to day practice by paediatricians. In most of these children, no cause can be identified. Although it is common but its definition, pathophysiological mechanisms and predisposing factors are not completely understood & there is need for large well performed clinical trials for evidence based treatment.

Methods: Hospital based prospective case control study conducted at Department of Paediatric. The study was commenced after obtaining clearance from institutional ethical committee. Written consent were taken from the parents for this study and those who were not willing excluded from study. Patients of age group 5 to 15 yrs of any gender presenting to paediatrics hospital (who fulfill inclusion and exclusion criteria) with >3 episodes of abdominal pain in preceding year were enrolled for study.

Results: Most common site of pain was upper abdomen present in 72% children, followed by lower abdomen in 22% children and generalized pain abdomen in 8% children. Prevalence of functional GI Disorders in children with RAP. 92% children had FGIDs while rest 8% children had organic or infectious aetiology.

Conclusion: This study reports higher prevalence of FGIDs in children with RAP and also identifies the variables associated with increased risk of this disorder in children with RAP. Female gender, school going children, psychological stress, traumatic life event and lower socioeconomic status increase the prevalence.

Keywords: Recurrent abdominal pain (RAP), Functional abdominal pain (FAP), Chronic abdominal pain.

Introduction

Chronic and recurrent abdominal pain in children did not receive much attention in paediatric literature before the late 1950s¹. In 1958 Apley and Naishe published results from a population-based study of schoolchildren, and introduced the term "recurrent abdominal pain" (RAP) defined as at least three episodes of pain, severe enough to affect activities, over at least three months in the preceding year². This definition soon became common in use and has been applied in clinical paediatric practice and research since then. With enhanced knowledge and understanding, both clinicians and researchers have recognised weaknesses with this term that RAP is a description, not a diagnosis. The definition is wide and general and includes heterogeneous disorders of abdominal pain, including those with organic and non-organic etiology. The vast majority of children and adolescents with RAP have non-organic abdominal pain³. This heterogeneity of RAP has made research and treatment difficult. To make a distinction from organic disease, the term "functional gastrointestinal disorders" (FGIDs) has been established. These are chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities⁴. The term

"functional abdominal pain" (FAP) encompasses the pain related FGIDs⁴⁻⁵. Chronic abdominal pain is one of the most common problems dealt in day to day practice by paediatricians. In most of these children, no cause can be identified. Although it is common but its definition, pathophysiological mechanisms and predisposing factors are not completely understood & there is need for large well performed clinical trials for evidence based treatment.

Material and Methods

Study Design: Hospital based prospective case control study.

Study duration: 12 months (January 2018 to December 2018).

Study Population: All children aged 5 to 15 years in routine OPD and indoor patient fulfilling the inclusion criteria.

Sampling method: Convenience sampling

Inclusion criteria:

1. Children aged 5 to 15 years.
2. Apley and Naish criteria defined by at least three episodes of abdominal pain severe enough to affect activities over at least 3 months in the preceding year.

Exclusion criteria:

Children aged 5 to 15 years with following warning symptoms in childhood:

Method of study

The study was commenced after obtaining clearance from institutional ethical committee. Written consent was taken from the parents for this study and those who were not willing excluded from study. Patients of age group 5 to 15 yrs of any gender presenting to paediatrics hospital (who fulfill inclusion and exclusion criteria) with >3 episodes of abdominal pain in preceding year were enrolled for study. For diagnosis of FAP, ROME criteria III will be used. A comprehensive history taking, physical examination and lab investigations were carried out and data was collected in pre-designed Performa. Patients were classified according to ROME criteria.

OBSERVATIONS

Table 1: Socio-demographic variable

Age	9.32±2.31 Yrs
Male : Female	44:56

In the present study, female children were more than male

Table 2: Distribution of Cases According to Socioeconomic Status (Modified Kuppuswamy Scale)

Socioeconomic status	No. of Cases	Percentage
Class1(upper)	0	-
Class 2 (upper middle)	23	23
Class 3 (lower middle)	71	71
Class 4 (upper lower)	6	6.0
Class 5 (lower)	0	-
Total	100	100

This table shows that 71 children belong to lower middle class, followed by 23 children in upper middle class while 6 children belong to upper lower class.

Children's socioeconomic status was decided by Modified Kuppuswamy Scale.

Table 3: Distribution of Cases According to Detailed Clinical History

Clinical History	No. of Cases	%
Site of Pain	Upper abdomen	70
	Lower abdomen	22
	Generalized	8
Frequency/year	3-6	83
	6-8	14
	>8	3
Duration of pain	>25% of the day	61
	<25% of the day	39
Association with altered bowel habits	Yes	53
	No	47
Intensity	Moderate	66
	Severe	25
	Mild	9
Interfere with daily activities	No	63
	Yes	37
Significant Weight Loss (>10% of body weight)	No	98
	Yes	2

This table shows that most common site of pain was upper abdomen present in 72% children, followed by lower abdomen in 22% children and generalized pain abdomen in 8% children.

Table 4: Distribution of Cases According to Social Behavior

Presence of Stressor	No. of cases	Percentage
Yes	31	31.0
No	69	69.00
Total	100	100

In this table 31 children had associated negative life event, while the rest had no associated life stressor.

Table 5: Distribution of Cases According to Final Diagnosis

Final Diagnosis	No. of Cases	Percentage
Functional	92	92.0
Organic/infectious	8	8.0
Total	100	100

This table shows prevalence of functional GI Disorders in children with RAP. 92% children had FGIDs while rest 8% children had organic or infectious aetiology.

Discussion

In our present study, we found Female predominance over males. Gender prevalence was found in 24 studies. In 1958 Apley and Naish⁵ done a epidemiological study on RAP and found that girls were affected more often than boys. In year 1990 Lundby et al⁶ observed that in general there was no significant difference in the frequency of RAP in boys and girls but a preponderance of girls with RAP after the age of ten years were found. Girls have a higher prevalence of FAP than boys (female/male ratio1.4:1) with a female predominance seeming to become evident around puberty.

In the present study, out of 100 cases, 2/3 of children were from families with lower family income. In the year 2000, Boey et al⁷ did a study to determine the prevalence of recurrent abdominal pain (RAP) among Malaysian school children aged from 11 to 16 years. They observed that there was higher prevalence of RAP in rural school children (P = 0.008; odds ratio (OR) 1.58), in those with a lower family income (P < 0.001; OR 2.02) and in children whose fathers have a lower educational attainment (P = 0.002; OR 1.92). There are significant differences in the prevalence of RAP between children from rural and urban schools, among children with different family incomes and among children whose parents have different educational backgrounds, which correlates with our study.

Upper abdominal pain was most common presentation (70%) followed by lower abdominal pain (22%) and 2/3rd of children had longer duration of pain (>25% of the day).

In the year 2002, Abd El-Mageid et al⁸ observed that Non-organic RAP was described as mild (68.2%), gradual

(64.3%), poorly localized (79.6%) pain, that was experienced more or less on daily basis (79%), and lasts for shorter duration (68.5%) [less than 15 minutes]. It was commonly associated with headaches (46.9%), diarrhea (36.9%), and other pains all over the body (13.4%) Devnarayana et al²¹ did a study on 734 children and observed that out of them, 58.4% had periumbilical pain.

Conclusion

This study reports higher prevalence of FGIDs in children with RAP and also identifies the variables associated with increased risk of these disorder in children with RAP. Female gender, school going children, psychological stress, traumatic life event and lower socioeconomic status increase the prevalence.

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