|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 8; August: 2021; Page No. 208-210

FUNCTIONAL PAIN ABDOMEN IN CHILDREN: EPIDEMIOLOGY AND ETIOPATHOLOGY

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MD Pediatrics

Article Info: Received 09 June 2021; Accepted 09 August 2021
DOI: https://doi.org/10.32553/ijmbs.v5i8.2113
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Conflict of interest: No conflict of interest.

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 on 100 children aged 5 to 15 years in routine OPD and indoor patient fulfilling the inclusion criteria.

Conclusion: Female gender, school going children, psychological stress, traumatic life event and lower socioeconomic status increase the prevalence of pain abdomen in children.

Keywords: Functional abdominal pain (FAP), Chronic abdominal pain. Children

Introduction

By definition, chronic or recurrent abdominal pain must occur at least 4 times each month for at least 2 months. Abdominal pain complaints begin as soon as a child can provide an accurate pain history, usually around age 7 years but occasionally younger. Before that age, children have difficulty separating emotional distress from physical pain. The differential diagnosis of child and adolescent abdominal pain is unrelated to age.[1]

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 pain[3]. 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 abnormalities[4]. The term "functional abdominal pain" (FAP) encompasses the pain related FGIDs[4].

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.

Material and Methods

Hospital based prospective case control study conducted on 100 children aged 5 to 15 years in routine OPD and indoor patient fulfilling the inclusion criteria.

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.

Data Analysis:

Data was recorded as per Performa. The data analysis was computer based; SPSS-22 was used for analysis. For categoric variables chi-square test was used. For continuous variables independent samples's *t*-test was used. *p*-value <0.05 was considered as significant.

Observations

Table 1: Demographic profile wise distribution of Cases of RAP

Mean age	11.13±2.16 Yrs
Male : Female	36 : 64

In the present study, Out of 100 cases, 64 children were female and 36 children were male. 69 children belong to lower middle class, followed by 22 children in upper middle class while 9 children belong to upper lower class.

Table 2: Distribution of Cases According to Detailed Clinical History

Clinical History		No. of Cases	%
Site of Pain	Upper abdomen	72	72.00
	Lower abdomen	21	21.00
	Generalized	5	5.00
Association with altered bowel habits	Yes	51	51.00
	No	49	49.00
Intensity	Moderate	65	65.00
	Severe	27	27.00
	Mild	8	8.00
Interfere with daily activities	No	68	68.00
	Yes	32	32.00
Significant Weight Loss (>10% of body weight)	No	98	98.0
	Yes	2	2.0

This table shows that most common site of pain was upper abdomen present in 72 children, followed by lower abdomen in 21 children and generalized pain abdomen in 5 children. Out of 100 cases, 51 children had associated altered bowel habits and rest 49 children had no alteration in bowel habits.

Table 3: Distribution of Cases According to Final Diagnosis

Final Diagnosis	No. of Cases	Percentage
Functional	91	91.00
Organic/infectious	9	9.00
Total	100	100

This table shows prevalence of functional GI Disorders in children with RAP. 91 children had FGIDs while rest 9 children had organic or infectious aetiology.

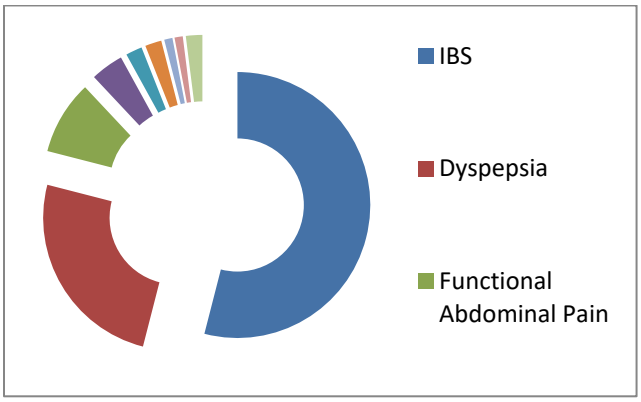

Figure 1: Distribution of Cases According to Disease

In this table, cases were classified according to ROME III criteria. According to clinical symptoms and investigations, 54 children had symptoms suggestive of IBS, 25 children had Dyspepsia, 9 children had Functional pain abdomen, 4 children had FAPS, 1 children had Giardiasis, 1 children had right ovarian cyst, 2 children had coeliac disease, 2 children had cystitis and 2 children had gastritis.

Discussion

In our present study, we found Female predominance over males with . Gender prevalence was found in 24 studies. In 1958 Apley and Naish[5] done a epidemiological study on RAP and found that girls were affected more often than boys. In year 1990 Lundby et al[6] 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. According to

Kuppuswamy scale, 69 children belong to lower middle class, followed by 22 children in upper middle class while 9 children belong to upper lower class. In the year 2000, Boey et al[7] did a study to determine the prevalence of recurrent abdominal pain (RAP) among Malaysian school children. 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).

Most common site of pain was upper abdomen present in 72 children, followed by lower abdomen in 21 children and generalized pain abdomen in 5 children. Out of 100 cases, 51 children had associated altered bowel habits and rest 49 children had no alteration in bowel habits.

In the year 2002, Abd El-Mageid et al[8] 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%).

In the year 2002, Abd El Mageid[8] did a study to investigate the possible relation between the occurrence of RAP and family and school related problems and observed that RAP was mostly non-organic in origin (65.7%). It was commonly associated with family troubles (59.7%) and school related problems (40.3%).

In the year 2005, Chitkara et al[1] did a study about the prevalence, incidence, natural history and co-morbid conditions of childhood RAP in western countries. They concluded that RAP is a common complaint of childhood with associated familial, psychological, and co-morbid conditions. There are numerous studies which showed an increase in prevalence of abdominal pain in children with high stress levels[9-10].

Conclusion

Female gender, school going children, psychological stress, traumatic life event and lower socioeconomic status increase the prevalence.

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