

Research article

Study of profile of children with chronic abdominal pain attending a tertiary care centre

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ABSTRACT

Introduction: Despite decades of clinical observations, the subject of long lasting constant or intermittent abdominal pain in childhood remains one of ambiguity and concern for most pediatric health care professionals. American Academy of Pediatrics and the North American Society for Pediatric Gastroenterology, Hematology & Nutrition (NASPGHN) in 2005 recommended that the term “Recurrent Abdominal Pain” (RAP). Should be replaced by a more appropriate term “Chronic Abdominal Pain”, which is defined as long lasting intermittent or constant abdominal pain that is functional or organic (disease based). In clinical practice, it is generally believed that pain that exceeds for 2 month duration can be considered chronic ⁽²⁾.

As there is no consensus with regards to etiology, investigation and management of this common problem. The present study was planned to address some issue regarding etiology, investigation and management of this common problem.

Materials & Methods: The study was conducted in Department of Paediatrics, Bharati Vidyapeeth Deemed University Medical College & Hospital, Sangli, which was sanctioned by Institutional Ethical Committee (BVDUMC&H/Sangli/IEC/Dissertation/2014-15/85). Patients meeting the requirements of inclusion and exclusion criteria were enrolled in this study after taking an informed written consent

Results: Out of the 107 patients 60.7% had organic cause of CAP and 39.3% had functional causes. , In functional group females were more than males. There were more number of patient in age group 10-14 years in organic group. Most common symptoms of organic pain were fever, nausea, vomiting and diarrhoea while common symptoms of functional pain were diarrhoea and constipation. School performance was affected in 45.2% cases with functional abdominal pain. Abdominal pain was significantly more in cases of mixed diet in both organic and functional cases.

Conclusion: Chronic abdominal pain is a common complain of childhood with associated organic and functional causes. Study of Profile in CAP may offer information on the evolution of Organic and Functional bowel disorder

Keywords: Children, Chronic Abdominal Pain, Functional Abdominal pain

INTRODUCTION

Despite decades of clinical observations, the subject of long lasting constant or intermittent abdominal pain in childhood remains one of ambiguity and concern for most pediatric health care professionals. J Apley a British Pediatrician observed that approximately 10% of school aged children get recurrent episode of abdominal pain. He named his symptom complete as recurrent abdominal pain syndrome and defined it as the “occurrence of three or more episodes of abdominal pain of such severity as to interfere with a child’s normal activity over a 3 month period” ⁽¹⁾.

However, the American Academy of Pediatrics and the North American Society for Pediatric Gastroenterology, Hematology & Nutrition (NASPGHN) in 2005 recommended that the term “Recurrent Abdominal Pain” (RAP). Should be replaced by a more appropriate term “Chronic Abdominal Pain”, which is defined as long lasting intermittent or constant abdominal pain that is functional or organic (disease based). In clinical practice, it is generally believed that pain that exceeds for 2 month duration can be considered chronic ⁽²⁾.

Chronic abdominal pain has been reported as the most common entity in school age children & young adolescent. Its prevalence in community based studies ranges from 0.5% to 19% and varies according to age. As there is no consensus with regards to etiology, investigation and management of this common problem. The present study was planned to address some issue regarding etiology, investigation and management of this common problem.

MATERIALS AND METHODS

Study Type & Area: A Observational-prospective study was conducted at Department of Paediatrics of a tertiary care centre during July 2014 to August 2016.

Inclusion Criteria: All children age 5 years to 14 years with pain in abdomen intermittent or continuous that exceeds 1 months in duration

Exclusion Criteria:

1. Acute abdominal pain episodes was excluded.
- 2.Children less than 5 years & Above 14 years was excluded.
- 3.Children with repeated admission was enrolled only once

Sample Size: Consecutive type of non-probability sampling was used for the selection of study subjects. A total of 107 diagnosed pediatric patients of Chronic Abdominal Pain admitted in our hospital were taken for study after informed consent from parents.

Statistical Test: To find out statistical significance between the groups, Z test was applied between the highest group and 2nd highest group in organic and functional groups separately.

Clinical protocol :

- 1) All children age 5 years to 14 years having intermittent or constant pain in abdomen that exceeds 1 month in duration were included in study and their informed consent was taken.
- 2) Patient & their care taker who has seen the patient consistently were interviewed.
- 3) On history taking pain abdomen was evaluated thoroughly location of the pain is important paraumbilical pain suggest functional disorder, umbilical pain suggest organic origin similarly upper abdominal pain suggest upper GI pathology and lower abdominal pain suggest lower pelvic pathology. Further evaluation was done
- 4) Red flags in history like pain awaking the child at night, occult bleeding, chronic severe diarrhea were recorded.
- 5) Detail dietary H/O was recorded, to know the symptoms which causes lactose intolerance.
- 6) A history of abdominal distension , involuntary weight loss, deceleration of liner growth, prolonged fever, bile stained or persistent vomiting, chronic diarrhea, dysphasia, nocturnal symptom, family history of inflammatory bowel disease & pain persistently located away from the central abdominal area was taken.

- 7) History of recent medication like antibiotics antidepressants which causes oesophgitis diarrhea & constipation respectively was record.
- 8) Family history of peptic diseases irritable or inflammatory bowel disease, pancreatitis, biliary disease or migraine was determined.
- 9) Influence of pain on Childs daily activity was assessed through questions about school attendance, play activity & peer relationship.
- 10) On examination anthropometric data of weight, height and growth velocity are documented. Blood pressure in recorded and the weight for height to assess malnutrition or obesity.
- 11) On abdominal examination liverspan, spleen, kidney size was assessed
- 12) Rectal examination was done to identify constipation, perianal inflammatory lesion, Crohn's disease . Abdominal tumor, also pelvic examination was done to rule out gynecologic problem in female child.
- 13) Red flag signs of organic disease include localized tenderness in Right upper or lower quadrants, localized fullness or palpable mass or organomegaly was examine.
- 14) Functional cases of CAP was classified as per ROME III criteria

RESULTS;

Table:1 DISTRIBUTION OF NUMBER OF CASES ON BASIS OF DIAGNOSIS

Diagnosis	N	%
Organic	65	60.7%
Functional	42	39.3%
Total	107	100.0%

Table : 2 AGEWISE DISTRIBUTION

Age group (yrs.)	Final Diagnosis		Total
	Functional	Organic	
<= 5 years	2	4	6
	4.8%	6.2%	5.6%
6-10 years	19	19	38
	45.2%	29.2%	35.5%
> 10 years	21	42	63
	50.0%	64.6%	58.9%
Total	42	65	107
	100.0%	100.0%	100.0%
Z Value	0.4369	4.0421	
P Value	0.6599	0.000	

Table: 3 SEX DISTRIBUTION

Sex	Final Diagnosis		Total
	Functional	Organic	
Female	29	35	64
	69.0%	53.8%	59.8%
Male	13	30	43
	31.0%	46.2%	40.2%
Total	42	65	107
	100.0%	100.0%	100.0%
Z Value	3.4915	0.8771	
P Value	0.0004	0.3788	

Table : 4 ORGANIC CAUSES OF CAP

Organic	N	%
RENAL CALCULUS	24	36.9%
CHRONIC APPENDICITIS	12	18.5%
PARASITIC INFECTION	7	10.8%
UTI	6	9.2%
CHRONIC PANCREATITIS	5	7.7%
PID	3	4.6%
ACUTE INTERMITTENT PORPHYRIA	1	1.5%
CHOLEDOCHAL CYST	1	1.5%
COARACTATION OF AORTA	1	1.5%
DIRECT INGUINAL HERNIA	1	1.5%
IBD	1	1.5%
MALROTATED KIDNEY	1	1.5%
PUJ OBSTRUCTION	1	1.5%
SMALL BOWEL OBSTRUCTION	1	1.5%
Total	65	100.0%
Z Value	2.352	
P Value	0.018	

Out of the 107 patient 77 (72.0%) were IPD and 30 (28.0%) were OPD. Out of the 107 patient 65 (60.7%) had organic cause of CAP and 42 (39.3%) had functional cause. Out of the 42 patients of functional abdominal pain 29(69.0%) were females, 13(31.0%) were males. Females are significantly more than males. Out of the 65 patients of organic causes of abdominal pain 35(53.8%) were females, 30(46.2%) were males. There is no

statistically significant difference in sex distribution in organic causes of abdominal pain. Out of the 65 patients of organic causes of abdominal pain 42 (64.6%) were in age group of 10-14 years, 19 (29.2%) were in age group 6-9 years, 4 (6.2%) were in age group 5 years. There are more patients in age group of above 10-14 years, which is statistically significant. Out of the 42 patients of functional abdominal pain 21 (50.0%) were in age group of 10-14 years, 19 (45.2%) were in age group 6-9 years, 6 (5.6%) were of age group 5 years. There is no statistically significant difference in any of age group. Most common symptoms of organic pain were fever, nausea, vomiting and diarrhoea while common symptoms of functional pain were diarrhoea, headache and constipation. In organic causes of CAP, pain was significantly more in suprapubic region. In functional causes of CAP, pain was significantly more in umbilical region. Out of the 65 patients of organic causes of pain, away from umbilicus in 26 (40.0%) patients, Awakening at night in 16 (24.6%) patients, Change in bowel habit in 2 (3.1%) patients, no red flag sign in 8 (12.3%) patients, Chronic Diarrhoea in 2 (3.1%) patients, Recurrent fever in 6 (9.2%) patients, Repeated vomiting in 5 (7.7%) patients. Out of the 42 patients of functional abdominal pain, 25 (59.5%) patients did not have any red flag sign. Pain away from umbilicus in 7 (16.7%) patients, Awakening at night 4 (9.5%) patients, Change in bowel habit in 1 (2.4%) patients, Chronic diarrhoea in 2 (4.8%) patients, Occult bleeding in 2 (4.8%) patients, Repeated vomiting 1 (2.4%) patient. Frequency of intermittent type of pain was significantly more in both organic and functional groups of abdominal pain. In organic cases 34 (52.3%) patients had mild pain, 23 (35.4%) had severe pain, 8 (12.3%) had moderate pain. In functional cases, Mild Intensity of pain was significantly more. In functional cases of abdominal pain psychologist found no psychological problem in 18 (42.8%) patients, school anxiety in 14 (33.3%) and Abnormal behaviour in 10 (23.8%). School performance was affected in 45.2% cases with functional abdominal pain. In organic causes of abdominal pain, Renal Calculus in 15 (23.7%) patients, was the most common cause, chronic appendicitis in 12 (18.5%) patients, constipation in 9 (13.8%) patients, parasitic infection in 7 (10.8%) patients, UTI in 6 (9.2%) patients, chronic pancreatitis in 5 (7.7%) patients, PID in 3 (4.6%) patients, Acute intermittent porphyria in 1 (1.5%) patient, Choledochal cyst in 1 (1.5%) patient, Coarctation of Aorta in 1 (1.5%) patient, Direct inguinal hernia in 1 (1.5%) patient, IBD in 1 (1.5%) patient, Malrotated kidney in 1 (1.5%) patient, PUJ obstruction in 1 (1.5%) patient, Small bowel obstruction in 1 (1.5%) patient.

DISCUSSION;

A hospital based prospective observational study was conducted at Department of Pediatrics, Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli for duration of 2 years. The aim was to study the etiology and clinical profile of children 5 years to 14 years of age with Chronic Abdominal Pain (CAP) attending a tertiary care centre. A total of 107 patients were evaluated during the study duration.

In our study, out of the total 107 cases, 60.7% had pain due to organic causes while 39.3% had pain due to functional disorders. Several studies done in Asian children have also shown similar findings⁽⁴⁾

Out of total 107 subjects, 6 (5.6%) were of 5 years, 38 (35.5%) were between 6-9 years and 63 (58.9%) were between 10-14 years of age. Both Organic and Functional disorders were more common between 10-14 years of age. A slight female predominance was observed in the study group with 59.8% females to 40.2% males.

Apley and Naish studied prevalence of CAP in British school children and found girls to be more commonly affected than boys⁽¹⁾. Rasul CH et al. studied recurrent abdominal pain in school children.

Most common symptoms in present study for organic pain were fever, nausea, vomiting and diarrhoea while common symptoms in cases of functional pain were diarrhea, headache, constipation and UTI. The commonest presentation of CAP is with autonomic and functional symptoms like nausea, vomiting, pallor and other painful conditions like headache and limb pains⁽¹⁾.

Features that suggest an organic disorder depend upon which disorder is present, but may include one or more of the following: fever, pain that awakens the child, significant vomiting, constipation, diarrhea, bloating, or gas, blood in the stool, unintentional weight loss or slowed growth, changes in bowel or bladder function, pain or bleeding with urination and abdominal tenderness⁽¹⁾.

Functional disorders do not have an identifiable cause. The symptoms can be so severe that the child may have frequent absences from school and be unable to participate in activities. In our study, in Functional cases pain was more common around umbilical region while organic pain occur more superficially. Most common red flag sign on history taking in children with organic etiology was pain away from umbilicus. Most common red flag sign on examination was abdominal tenderness and pallor for both groups. In most cases of functional aetiologies, pain was felt as intermittent (88.1%). Most cases with functional aetiologies had mild pain (81%) while 35.4% cases with organic causes had severe abdominal pain.

CAP commonly present with periumbilical pain associated with autonomic and functional symptoms. Thus, on initial presentation, RAP may mimic any acute abdominal disorder, and may prompt extensive evaluation and unnecessary invasive investigation⁽¹⁾.

School performance was affected in 45.2% cases while abnormal behavior was seen in 23.8% cases with functional abdominal pain.

In our study, most common organic cause for abdominal pain was renal calculus (23.07%) followed by Chronic Appendicitis (18.5%), Constipation (13.8%), parasitic infection (10.8%), UTI (9.2%), Pancreatitis (7.7%) and PID (4.6%). Organic disorders include conditions caused by an identifiable problem in the body. Constipation is one of the most common causes of recurrent pain. Other causes include stomach and intestinal problems (eg, heartburn, ulcers, lactose intolerance, parasitic infections) and muscle or bone pain. Less common causes include urinary tract infection and inflammatory bowel diseases (eg, Crohn's disease, ulcerative colitis).

Several etiological studies in India have recognised intestinal parasitic infections, including giardiasis, as the leading cause for RAP. In a study by Buch et al., an organic cause was found in 70 (82.4%) patients and non-organic cause identified in 15 (17.6%) cases. Giardiasis was the commonest organic cause in 57 (67.0%) cases, either alone or with other parasitic infestations including ascariasis, trichuriasis and enterobiasis. Dutta S et al. observed that out of the 13 patients with a final diagnosis of Organic pain, 4 had peptic ulcer, 4 parasitic infestations, 3 abdominal epilepsy, 1 vesico-ureteric reflux and 1 urinary tract infection⁽²¹⁾. Similar results were also observed by Balani B et al.⁽¹¹⁾.

CONCLUSION:

Our observation indicate a higher proportion of organic abnormalities in chronic abdominal pain that has been found in most previously reported studies, though a multicausal approach seems important. The long term perspectives in CAP group as a whole, and with high proportion reporting symptom continues into adult life, suggest that diagnostic effort should be made when the patient is still a child.

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