

CLINICAL PROFILE OF ACUTE ABDOMINAL PAIN AMONG CHILDREN AND ADOLESCENT AT TERTIARY CARE CENTRE

Dr. Jayant R. Deore^{1*}

1. Associate Professor, Department of Paediatrics, Geetanjali Medical College and Hospital, Udaipur

*Email id of the corresponding author- deorejyant33@gmail.com

Received: 22/08/2014

Revised: 09/11/2014

Accepted: 15/11/2014

ABSTRACT:

Background: Acute abdominal pain defined as pain of nontraumatic in nature with a maximum duration of five days. Acute abdominal pain is among the most common complaints at outpatient department which accounts for 7–10% of all Emergency hospital visits. In majority of patient's symptoms are self-limiting but few of these patients will develop serious intra-abdominal disease. **Material & Methods:** The present observational study was conducted at of our tertiary care hospital, with a study duration of six months from December 2013 to May 2014. 100 children of age 1 to 16 years, who were diagnosed with acute abdomen pain, were enrolled from outdoor department and from ward by simple random sampling. **Results:** In the present study, abdomen pain was present among all the study participants i.e. 100%, which is followed by abdominal pain with vomiting in 71% study participants. Diarrhea was present in 43% study participants followed by Abdominal distension in 31% study participants, fever present in 26% study participants and constipation was present in 12% study participants. Abdominal tenderness was present in 97% study participants which was followed by abdominal guarding/ rigidity found in 61% study participants. Acute gastroenteritis was reported the most common cause of acute abdomen pain which was found in 39% study participants which was followed by acid peptic disease in 26% study participants. Urolithiasis was found in 13% study participants and urinary tract infection were found in 10% study participants. Dengue was reported in 6% study participants, acute hepatitis, appendicitis and mesenteric adenopathy were found in 2% study participants respectively. **Conclusion:** Acute gastroenteritis was the most common cause of acute abdomen pain which was followed by acid peptic disease, urolithiasis and urinary tract infection. Early diagnosis and prompt treatment decrease the major morbidity as well as the duration of hospital stay.

Keywords: Acute Abdomen, Acute gastroenteritis, Appendicitis.

INTRODUCTION

Acute abdominal pain defined as pain of nontraumatic in nature with a maximum duration of five days (1). Acute abdominal pain is among the most common complaints at outpatient department which accounts for 7–10% of all Emergency hospital visits (2). In majority of patient's symptoms are self-limiting but few of these patients will develop serious intra-abdominal disease or complication

which requires emergency intervention (3). Management of acute abdominal pain is an emergency and great challenge for the medical fraternity. The diagnostic algorithm for acute abdominal pain is also very vast and one of the most difficult for the physicians and pediatricians. This difficulty in diagnosis is mainly due to the wide range of the clinical signs and symptoms for abdominal pain, as well as to the perceptivity of the

child's feelings when it comes to clearly correlating the symptoms (4).

However, frequency of abdominal pain is relatively high but its symptoms are suggestive of a serious underlying disease and therefore it is very essential and challenging to differentially diagnose the condition to attain favorable outcomes. Acute abdominal pain can persist for many hours to days and clinical features are generally overlapping and sometimes misleading (5). Accurate diagnosis of the burden and magnitude of the origin of acute abdominal pain is still difficult. The etiology of acute abdominal is as well as wide-ranging, which includes very different clinical situations, ranging from viral gastroenteritis, through nonspecific benign and psychogenic abdominal pain to abdominal aneurysm complications (6).

On classifying the broad etiology of acute abdominal pain on the basis of age we found among children and young adults the main causes are acute appendicitis, acute gastroenteritis and abdominal trauma. Various studies also reported that, the other common causes of acute abdomen pain were intestinal obstruction, diverticulitis, biliary diseases and appendicitis (7). Metabolic and cardiac emergencies are also common non-surgical causes among adolescents. The present study aimed to find out the epidemiology of spectrum of clinical profile of acute abdominal pain among children and adolescent at tertiary care center.

MATERIALS & METHODS

The present observational study was conducted at of our tertiary care hospital, with a study duration of six months from December 2013 to May 2014. A sample size of 100 was calculated at 95% confidence interval at 10% acceptable margin of error by epi info software version 7.2. All children of age 1 to 16 years, who were diagnosed with acute abdomen pain were enrolled from outdoor department and from ward by simple random sampling. Institutional Ethics Committee Clearance was obtained before start of study and written and informed consent for the procedure was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point of time.

A written informed consent was taken from all the Patients/parents/guardians with non-traumatic acute

abdominal pain. Detailed history was taken related to demographic data, age, gender, previous clinical and medical history was recorded for all the patients. All the OPD cases who had traumatic acute abdomen cause were excluded from the present study. On follow up visit same data were recorded and compared. All the data was recorded on Microsoft excel spread sheet and data analysis was done at 10% alpha and 90% confidence interval using SPSS v22 software. Test of significance were applied on collected and organized data and p value less than 0.05 was considered as statistically significant association between study variables.

RESULTS

In present study, A total of 100 children of age 1 to 16 years, who were diagnosed with acute abdomen pain with non-traumatic acute abdominal pain were enrolled for the study. All the study participants were below 16 years of age. Out of the total majority of study participants were in the age group of 10 - 16 years 46% which was followed by 33% in the 5-10 years age group and 21% in the age group of 1 to 5 years. However, this difference was statistically non-significant. In the present study males 52% were more common than females 42%. (Table 1)

Table 1: Distribution of study subjects according to the age and gender.

parameters	No. of children	
Age (years)	1 year –5 year	21%
	5 year – 10 year	33%
	10 year – 16 year	46%
Gender	Boys	52%
	Girls	48%

In the present study, abdomen pain was present among all the study participants i.e. 100%, which is followed by abdominal pain with vomiting in 71% study participants. Diarrhea was present in 43% study participants followed by Abdominal distension in 31% study participants, fever present in 26% study participants and constipation was present in

12% study participants. Abdominal tenderness was present in 97% study participants which was followed by abdominal guarding/ rigidity found in 61% study participants and absent bowel sounds found in 38% study participants, while tympanic note was not found in any of the patient of non-traumatic acute abdomen. (Table 2)

In the present study, Acute gastroenteritis was reported the most common cause of acute abdomen

pain which was found in 39% study participants which was followed by acid peptic disease in 26% study participants. Urolithiasis was found in 13% study participants and urinary tract infection were found in 10% study participants. Dengue was reported in 6% study participants, acute hepatitis, appendicitis and mesenteric adenopathy were found in 2% study participants respectively. (Table 3)

Table 2: Distribution of study participants according signs and symptoms.

Parameters		No. of patients (%)
Symptoms	Abdominal Pain	100
	Vomiting	71
	Diarrhea	43
	Abdominal distension	31
	Fever	26
	Constipation	12
Signs	Abdominal tenderness	97
	Abdominal guarding/ rigidity	61
	Absent bowel sound	38

Table 3: Distribution of study participants according to spectrum of disease.

Parameters	No. of patients (%)
Acute gastroenteritis	39
Acid peptic disease	26
Urolithiasis	13
Urinary tract infection	10
Dengue	6
Acute hepatitis	2
Appendicitis	2
Mesenteric adenopathy	2

DISCUSSION

In present study, a total of 100 children of age 1 to 16 years, who were diagnosed with acute abdomen pain with non-traumatic acute abdominal pain were enrolled for the study. All the study participants were below 16 years of age. Out of the total majority of study participants were in the age group of 10 - 16 years 46% which was followed by 33% in the 5-10 years age group and 21% in the age group of 1 to 5 years. However, this difference was statistically non-significant. In the present study males 52% were more common than females 42%. A similar study conducted by Memon et al among a total of 586 patients of non-traumatic acute abdomen, reported that there were 174 (29.69%) females and 412 (70.30%) males with the female to male ratio of 1:2.3. They found similar prevalence of acute abdomen to the present study in their study results (8).

In the present study, abdomen pain was present among all the study participants i.e. 100%, which is followed by abdominal pain with vomiting in 71% study participants. Diarrhea was present in 43% study participants followed by Abdominal distension in 31% study participants, fever present in 26% study participants and constipation was present in 12% study participants. A similar study conducted by Chanana et al among a total of 264 patients of non-traumatic acute abdomen, reported that the commonest symptom found was abdominal pain in (100%) patients which was followed by vomiting among (58%) patients (9). A similar study conducted by Yemane B et al among a total of 255 patients of non-traumatic acute abdomen, reported that the commonest symptom found was abdominal pain in (100%) patients which was followed by vomiting among (58%) patients (10).

In the present study, abdominal tenderness was present in 97% study participants which was followed by abdominal guarding/ rigidity found in 61% study participants and absent bowel sounds found in 38% study participants, while tympanic note was not found in any of the patient of non-traumatic acute abdomen. A retrospective study conducted by Singh G et al among seven patients admitted for non-traumatic acute abdomen pain, reported that abdominal tenderness was the most common sign which was followed by abdominal distension as the commonest sign (11). A similar retrospective study conducted by Hagos M among

299 patients admitted for non-traumatic acute abdomen pain, reported that abdominal tenderness was present in 287 (96%) patients which was followed by abdominal guarding/ rigidity found in 269 (90%) patients and rebound tenderness in 139 (46.4%) patients (12).

In the present study, Acute gastroenteritis was reported the most common cause of acute abdomen pain which was found in 39% study participants which was followed by acid peptic disease in 26% study participants. Urolithiasis was found in 13% study participants and urinary tract infection were found in 10% study participants. Dengue was reported in 6% study participants, acute hepatitis, appendicitis and mesenteric adenopathy were found in 2% study participants respectively. A similar study conducted by Yeboah O et al among a total of 3114 patients of non-traumatic acute abdomen, reported that the acute appendicitis was reported the most common cause of acute abdomen pain which was found in 22.4% patient which was followed by perforation peritonitis in 16% patients (13). A similar study conducted by Agboola et al among a total of 276 patients of non-traumatic acute abdomen, reported that the most common cause of acute abdomen pain which was found in 30.3% patient which was followed by intestinal obstruction in 27.9% patients (14).

CONCLUSION

We concluded from the present study that the acute abdomen pain represents a group of abdominal signs and symptoms which can be rapidly deteriorate and need a urgent treatment. Acute gastroenteritis was the most common cause of acute abdomen pain which was followed by acid peptic disease, urolithiasis and urinary tract infection. Early diagnosis and prompt treatment decrease the major morbidity as well as the duration of hospital stay.

REFERENCES

1. Agboola JO, Olatoke SA, Rahman GA. Pattern and presentation of acute abdomen in a Nigerian teaching hospital. *Niger Med J.* 2014 May;55(3):266-70. doi: 10.4103/0300-1652.132068. PMID: 25013262; PMCID: PMC4089059.
- b2. Hastings RS, Powers RD. Abdominal pain in the ED: a 35 year retrospective. *Am J Emerg Med* [Internet]. 2011 Sep;29(7):711-6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20825873>

3. Powers RD, Guertler AT. Abdominal pain in the ED: Stability and change over 20 years. *Am J Emerg Med* [Internet]. 1995 May;13(3):301–3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7755822>
4. Sebbane M, Dumont R, Jreige R, Eledjam J-J. Epidemiology of Acute Abdominal Pain in the Emergency Department Setting. In Springer, Berlin, Heidelberg; 2011. p. 3–13. Available from: http://link.springer.com/10.1007/174_2010_135
5. Selbst SM, Friedman MJ, Singh SB. Epidemiology and etiology of malpractice lawsuits involving children in US emergency departments and urgent care centers. *Pediatr Emerg Care* [Internet]. 2005 Mar;21(3):165–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15744194>
6. Macaluso CR, McNamara RM. Evaluation and management of acute abdominal pain in the emergency department. *Int J Gen Med*. 2012;5:789-97. doi: 10.2147/IJGM.S25936. Epub 2012 Sep 26. PMID: 23055768; PMCID: PMC3468117.
7. Kachalia A, Gandhi TK, Puopolo AL, Yoon C, Thomas EJ, Griffey R, et al. Missed and Delayed Diagnoses in the Emergency Department: A Study of Closed Malpractice Claims From 4 Liability Insurers. *Ann Emerg Med* [Internet]. 2007 Feb;49(2):196–205. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16997424>
8. A.A. M, A.A. B, G.S. S, A. J, Q.-A. S. Spectrum of diseases in patients with non-traumatic acute abdomen. *J Liaquat Univ Med Heal Sci* [Internet]. 2008;7(3):180–3. Available from: <http://www.embase.com/search/results?subaction>
9. Yang WC, Chen CY, Wu HP. Etiology of non-traumatic acute abdomen in pediatric emergency departments. *World J Clin Cases*. 2013 Dec 16;1(9):276-84. doi: 10.12998/wjcc.v1.i9.276. PMID: 24364022; PMCID: PMC3868711.
10. Yemane Berhane, Kiflom Girmay AG. Outcome of emergency surgical operations performed for non-traumatic acute abdomen in mekelle hospital. *Eur J Pharm Eur J Pharm Med Res*. 2013;3(4):106–11.
11. Singh G, Dogra BB, Jindal N, Rejintal S. Non-traumatic ileal perforation: a retrospective study. *J Fam Med Prim care* [Internet]. 2014 Apr;3(2):132–5. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25161970>
12. Hagos M. acute abdomen: a two year experience in mekelle, ethiopia. *Ethiop Med J* [Internet]. 2014 Jan;53(1):19–24. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26591288>
13. Ohene-Yeboah M. acute surgical admissions for abdominal pain in kumasi, ghana. *ANZ J Surg* [Internet]. 2006 Oct;76(10):898–903. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17007619>
14. Agboola JO, Olatoke SA, Rahman GA. Pattern and presentation of acute abdomen in a Nigerian teaching hospital. *Niger Med J* [Internet]. 2014 May;55(3):266–70. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25013262>