

Pattern of Acute Abdominal Pain among Patients Attending to the Emergency Department of Karnali Academy of Health Sciences: Hospital Based Cross Sectional Study

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ABSTRACT



Introduction: Acute abdominal pain (AAP) is a medical emergency, characterized by pain arising from the abdominal area, of non-traumatic origin with a maximum duration of five days. Timely evaluation of acute abdominal pain (AAP) is important as it may determine the long-term prognosis. This study aims to assess various aspects of acute abdomen pain among patients who presented to the emergency department (ED) of Karnali Academy of Health Sciences (KAHS) in an attempt to determine the pattern and prevalence of AAP in a rural Karnali region of Nepal.

Methodology: A hospital based retrospective study was conducted in KAHS. Data was collected from admission registers in ED that contained information of patients. Patients presenting to the ED during a period of six months (May 2020- October 2020) with acute abdominal pain, non-traumatic in origin were included in the study. Statistical analysis was done using SPSS version 17. Frequency and percentage were used for analysis.

Result: A total of 215 patients had visited the ED with acute abdomen. Acute gastritis (48.6%) was the most common cause of acute abdominal pain in ED followed by acute appendicitis (11.6%). A total of 70 cases (32.5%) had purely surgical nature of aetiology. Acute abdominal pain was seen equally distributed between both genders. Patients of AAP mostly belonged to the middle age group (44.6% in an age group of 15-30 years).

Conclusion: Most cases of Acute Abdominal Pain (AAP) attending the emergency department of a hospital in the mountainous region of Karnali have conditions relating to non-surgical cause. While acid peptic disease remains a common entity among people living in rural Karnali region of Nepal, further elaborative study of AAP is recommended.

Keywords: Acute abdominal pain (AAP), Emergency Department (ED), Karnali

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INTRODUCTION

Acute abdominal pain (AAP) is a common medical emergency that is characterized by pain arising around the area of the abdomen, within the recent five days and of non-traumatic origin.¹ Abdominal pain is one of the very common symptoms for patients presenting to emergency department (ED) of tertiary hospitals.² Timely evaluation of acute abdominal pain (AAP) is important as it may determine the prognosis and emergency room physicians must keep in mind its several possible diagnoses and effective evaluation of the patients by taking proper history and considering appropriate clinical findings supported by justifiable laboratory and radiological findings in a timely manner, in an attempt to reduce morbidity and mortality³⁻⁵. Acute abdominal pain may have association with such condition, which might need surgical intervention. Acute abdomen has been defined by various authors in their own way but it has been defined commonly as “an abnormal condition characterised by sudden onset of severe pain within the abdominal cavity which requires immediate evaluation, diagnosis and treatment which is usually a surgical intervention”.⁶ In the ED, cases presenting with AAP always brings huge challenge for the emergency physicians as the list of probable differential diagnoses is long with wide range, from benign to life-threatening aetiologies. In the developed world the most common cause of acute abdomen is acute appendicitis in young age group while acute intestinal obstruction is found to be the most common cause of acute abdomen in a developing world like ours.⁷ The most common non-surgical cause of acute abdominal pain is believed to be acute gastritis. Regarding intestinal obstruction, adhesions have been found to be the most common cause while among the Africans, volvulus and hernia are common.⁸⁻¹¹ The elderly patients usually

have atypical symptoms and longer duration of pain.¹²⁻¹⁴ Despite extensive evaluation, a quarter of patients usually remained undiagnosed, but now with latest radiological imaging advances that number has decreased.¹⁵⁻¹⁶ This study aims to evaluate various aspects of acute abdomen pain among patients who presented to the emergency department of Karnali Academy of Health Sciences (KAHS) in an attempt to determine predictive factors for admission to the hospital.

MATERIALS AND METHODS

This is a hospital based, descriptive cross-sectional study conducted at the emergency department (ED) of Karnali Academy of Health Sciences (KAHS). It is a multi-disciplinary tertiary level hospital located in remote area in Karnali province. The hospital covers the people living largely in mountainous and high hill regions in the region. A complete list of patients of all age groups who visited to the ED with complaints of acute abdominal pain during the period of recent six months (May 2020- October 2020) was acquired. Required information was collected retrospectively from the department registers. After that, a separate list of patients presenting with non-traumatic cause of abdominal pain only was prepared and mentioned as a study population for this study. Patients with acute abdominal pain due to trauma and patients record of patients that had inadequate information were excluded. Ethical clearance was taken from institutional review committee of Karnali Academy of Health Sciences. Convenient sampling was done. Statistical analysis was done using SPSS version 17. Frequency and percentage were used for analysis.

RESULT

A total of 215 patients presenting with severe abdominal pain were enrolled in the study were enrolled in our study. AAP (Acute Abdominal Pain) is fairly distributed between

both sexes (47.4% and 52.6% for male and female respectively) whereas most of the patients were of the middle age group (15-30

years) that constituted 44.6% of total cases as shown in (Table 1).

Table 1. Age and sex distribution of patients with acute abdomen

Characteristics		Frequency (n)	Percentage (%)
Age (in years)	<14	5	2.3%
	15-30	96	44.6%
	31-45	52	24.1%
	46-60	34	15.8%
	>60	28	13.02%
Gender	Male	102	47.4%
	Female	113	52.6%

Various etiological factors were evaluated and acid peptic disease was found to be the most common cause of AAP (48.6%). Most common surgical cause of AAP, among all others was acute appendicitis (35.7% of all surgical causes of AAP). Renal colic represented the third most common cause of acute abdomen (11.1%) followed by intestinal obstruction (7.9%), urinary tract infection (UTI)/ Cystitis (3.7%) and Cholelithiasis/

Cholecystitis (1.5%). Other causes were ectopic pregnancy (3), dysmenorrhoea (3), threatened abortion (1), diabetic ketoacidosis (1), acute mesenteric lymphadenitis (2), adnexal cyst (2) and acute pancreatitis (3). A total of 70 cases (32.5%) had aetiology relating to surgical causes of AAP (Table 2). Non-surgical pattern of acute abdominal pain was more common than those of surgical etiology and is shown below (diagram 1).

Table 2: Aetiology of acute abdomen presenting to ED

Causes	Frequency (n)	Percentage (%)
Acid Peptic Disease/ Acute Gastritis	122	48.6
Appendicitis	25	11.6*
Renal colic	24	11.1
Intestinal obstruction	17	7.9
Cystitis/ UTI	8	3.7
Cholelithiasis/ Cholecystitis	4	1.5
Others	15	11.6

*Of the total causes of AAP with surgical etiology, appendicitis contributed to 35.7%.

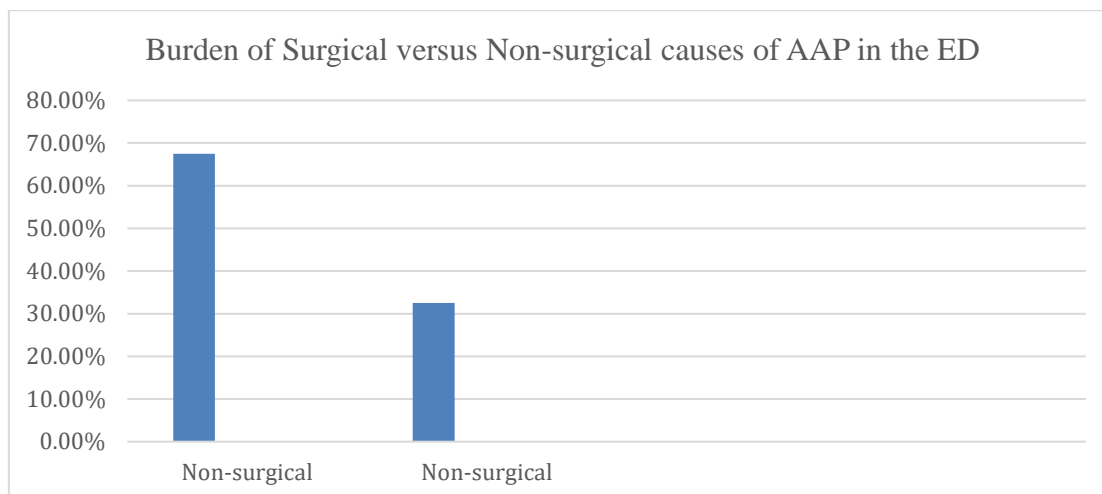


Diagram 1. Showing surgical and non-surgical causes of acute abdominal pain.

DISCUSSION

Acute abdominal pain (AAP) is one of the most common causes of referral to tertiary care hospitals. As evaluation and management of patients presenting to the ED with AAP is challenging because of probability of any of the many differential diagnoses that has to be sorted within a short limitation of time, it often asks for ample use of hospital resources and significantly contributes to health care cost.¹⁷ Acute abdominal pain can be because of various causes like infection, severe gastritis, gastrointestinal ischemia, bowel obstruction, malignancy and also cardiac and pulmonary problems.¹⁸ Severity ranges from self-limiting conditions to life threatening surgical emergencies.¹⁹ Effectively identifying “red flag signs” in the history and physical examination of the patient, along with support from clinical laboratory and imaging can help identify patients with serious underlying disease. Patient with acute abdominal pain may present with diverse associated symptoms and presentation can differ in certain group, such as elderly and immune-compromised individuals may have unclear and atypical history or physical finding.

In our study, the most common cause of abdominal pain in ED was found to be acute

gastritis which corresponded to the study published by Velissarisa et al.²⁰ that was conducted in a university hospital in Greece. It showed acid peptic disease was the top cause of AAP among patients presenting to the ED with complaints of pain in the abdomen. Most of the results from our study are consistent with data from other countries. Most of the patient presenting to ED with abdominal pain in Europe were elderly people (>70 years) whereas in other parts of the world, younger population comprised the most number of such cases²¹. Finding from our study co-relates well with these data in terms that our study also has younger population comprising the most number of such patients (44.6% in an age group of 15-30 years). Prevalence of acute abdominal pain is slightly more in female (52.6%) in our study which is similar to the study done by Catarino et al.²² (52%) and Irvin TT²³ (56%).

Our study showed that the major causes of acute abdominal pain in ED belonged to gastrointestinal (GI) and genitourinary (GU) system which is found similar to the results of a BEACH study done in Australia.²⁴ In our study, we found that a total of 70 (32.5%) were cases that had surgical aetiology for GI and GU causes of AAP. It depicts that the major cause

of acute abdominal pain is contributed by non-surgical pattern of the disease. Most common cause of severe abdominal pain that causes patients to seek medical advice at ED was acute severe gastritis, which represent almost half (48.6%) of the cases. As we find acute appendicitis to be the most common surgical cause of acute abdomen, this finding was found to be in line with study done on acute abdominal pain by various authors. Agboola et al.²⁵ found similar result about AAP and mentions that acute appendicitis was the most commonly seen cause of acute abdominal pain in the ED.

Despite technological advances, diagnosis and treatment of acute abdominal pain still poses a major clinical challenge for treating physicians. Effective management of cases with AAP requires an efficiently co-ordinated multi-specialty approach of clinicians. It would be a good option to carry out such research work in the future too with collection of more data on acute abdominal pain and correlates so that its nature and pattern could be

studied rather comprehensively. Also, the management protocol for AAP needs to be effectively assessed.²⁶

In this study, we had a 'not-too-large' sample size and the study was conducted for a relatively short period of time. The author believes that inclusion of a larger sample size could yield better result and also provide proper interpretation facts.

CONCLUSION

Most cases of Acute Abdominal Pain (AAP) attending the emergency department of a hospital in the mountainous region of Karnali have conditions relating to non-surgical cause. Acid peptic disease remains a common entity among people living in rural Karnali region of Nepal whereas acute appendicitis was the most common surgical diagnosis relating to AAP in the ED. Further elaborative study of AAP in a rather comprehensive manner is recommended.

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