Section: Emergency Medicine

Original Research Article

A HOSPITAL BASED CROSS SECTIONAL STUDY TO ASSESS THE CLINICO-EPIDEMIOLOGICAL PROFILE OF PATIENTS PRESENTING WITH ACUTE ABDOMINAL PAIN IN EMERGENCY DEPARTMENT

Mahendra Kumar Meena[1], Tej Prakash Sinha[2], Rekha Meena[3], Sanjeev Bhoi[4]

[1]Assistant Professor, Department of Emergency Medicine, Government Medical College, Dausa, Rajasthan, India. (Ex-Resident, AIIMS, New Delhi, India)
[2]Additional Professor, Department of Emergency Medicine, AIIMS, New Delhi, India.
[3]Junior Resident, Department of Obstetrics & Gynaecology, Government Medical College, Tonk, Rajasthan, India.
[4]Professor, Department of Emergency Medicine, AIIMS, New Delhi, India.

Received : 02/02/2026
Received in revised form : 25/02/2026
Accepted : 08/03/2026

Keywords:
Acute Abdominal Pain, ED, Clinico-Epidemiological Profile, Symptoms.

Corresponding Author:
Dr. Tej Prakash Sinha,
Email: drsinha123@gmail.com

DOI: 10.47009/jamp.2026.8.3.8

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (3); 38-42

ABSTRACT

Background: Acute abdominal pain is a common presenting complaint to Emergency Department. Acute abdominal pain can be one of the challenging diagnostic entities to emergency physicians with its different etiology and limited diagnostic modality. It does not suggest a specific diagnosis rather a manifestation of wide range of medical syndromes. This study aims to find out the Clinico-epidemiological profile of patients presenting with acute abdominal pain in emergency department. **Materials & Methods:** This were a cross sectional study with sample size of 204 patients who presented to emergency with acute abdominal pain. Data collection during a period from Jan. 2020 to Aug. 2021, which included demographic profile, associated symptoms, sign and comorbidities, imaging results, emergency disposition, presumptive diagnosis and outcome. Data was entered on a stranded data collection sheet after obtained a written informed consent. A p value less than 0.05 was considered significant. **Results:** Total of 204 cases were recruited for the study. 141 cases were in the age group 18-40 years. Female were more than male. Majority of the patients (92) with abdominal pain more than 48 hour to 7 days. Most of the patients (163) belong to middle class. Common comorbidities associated were hypertension (9), Diabetes mellitus (8), COPD/BA (5), TB (4), renal disease (4), Liver disease (4), heart disease (2), Epilepsy (1). Common risk factor associated were Immuno-compromised (20), Laxative (5), Fertility agent (3), NSAID (2), Antibiotic (2), IUD (2), Narcotic (1). The most common site of pain was the whole abdomen (41), followed by Right hypochondrium (32) and right iliac fossa (32). Dull aching type was the most common character of pain (114) followed by colicky type (65). The most common site referred pain in back (131). The most of patients (134) presented with a pain score of 5-7 on the WBF score. The most common associated symptom and sign were vomiting (47) and abdominal tenderness (111) respectively. **Conclusion:** Acute abdominal pain is a common ED symptom and clinicians consider multiple diagnosis, especially those that require immediate intervention to limit morbidity and mortality.

INTRODUCTION

Acute abdominal pain is one of the common presentations in emergency department accounting for about 5-15% of all emergency department visits.[1,2] Abdominal pain can be the manifestation of a spectrum of disease processes. Conditions causing acute abdominal pain may vary, from conditions needing immediate intervention, to relatively mild presentations needing careful observation to avoid over investigation and unnecessary interventions. Surgical causes accounts for about 40% of all acute abdominal pain.[2]

The diagnoses associated with acute abdomen vary according to age and gender.[3] Acute appendicitis is more common in the young.[4] Whereas biliary disease, bowel obstruction, intestinal ischemia and infraction, and diverticulitis are more common in

elderly patients. The most common causes of acute abdominal pain requiring admission are acute appendicitis, nonspecific abdominal pain, pain in urological origin, intestinal obstruction and biliary tract disease but it varies depending on the population and geographical region.[5] The elderly patients usually have longer duration of pain at presentation.[6] Based on clinical, laboratory and radiologic evaluation 37.6 % of patients enrolled in the study were admitted to hospital, where 62.4% where not admitted. Compared not admitted, patients admitted to hospital had higher age and significantly higher inflammatory markers white blood counts and c-reactive protein.[7] Computed tomography leads to the higher sensitivity and specificity in patients with acute abdominal pain.[8]
There is paucity of research data on emergency department-based clinic-epidemiological profiling of acute abdominal pain patients from our part of the world. The present study will look into the clinic-epidemiological profile of acute abdominal pain patients presenting to emergency departments.

MATERIALS AND METHODS

A cross-sectional study was done in the Department of Emergency medicine, AIIMS New Delhi from 1 January 2020 to 31 August 2021. A total of 204 patients with pain abdomen were enrolled in the study. Patient presenting with acute abdominal pain, age of above 18 years, of both the sex and all with comorbidities were included. Patients paediatric age group (< 18 years) and trauma were excluded from the study. Ethical clearance was obtained from Institutional Ethical Committee. A written and informed consent was taken from patients before enrolling them for study.
A structured questionnaire format was used to elicit detailed history (onset, duration, character of pain, radiation, intensity, periodicity, type, etc.) and examination (guarding, rigidity, rebound tenderness, distortion in abdominal anatomy, lump, scar, shape of abdomen, pigmentation). Basic blood investigations were done for all patients. Radiological investigations like ultrasonography (USG) and computer tomography (CT) scan were done on appropriate indication, the patients were asked about the severity of pain and it was objectively assessed with Wong baker faces (WBF) pain rating scale of 0 to 10. The WBF scale uses a series of six faces with each describing an expression ranging from happy face, i.e., “no hurt” (score zero), to a crying face “hurts the worst” (score ten). The patients were asked to point out on the scale describing the severity of their pain
The assessment of pain was done on the basis of a detailed history and examination which included history of onset and duration.
Pain relief was given through the oral route if mild or parenterally when severe. The patients were followed up until discharge /Admission/Refer other hospital from Emergency department. The final diagnosis at discharge was noted.

Inclusion Criteria:

1. Adults ≥ 18 years with Acute abdominal pain in emergency department of AIIMS New Delhi
2. Patients presenting with pain abdominal ≤ 7 day
3. Patients willing to give consent

Exclusion Criteria:

1. Traumatic abdominal pain

Data Collection and Analysis:

All patients presenting to emergency department with features consistent with Acute pain abdomen were screened for inclusion and exclusion criteria. Patient satisfied the inclusion criteria was recruited in the study. Written informed consent was obtained from the patient fulfilling the inclusion criteria. After taking informed consent, all relevant data was collected in predesigned proforma, which included demographic profile, duration of illness, associated symptoms and comorbidities, general physical examination and relevant systemic examination, laboratory parameters, imaging impressions, emergency disposition, final diagnosis and outcome.

Statistical Analysis:

Statistical testing was conducted with the statistical package for the social science system (SPSS) version 24.0. Continuous variables were presented as mean ± SD and categorical variables were presented as absolute numbers and percentages. The comparison of normally distributed continuous variables between the groups was performed using Student’s t test. Nominal categorical data between the groups were compared using Chi-squared test or Fisher’s exact test as appropriate. P = < 0.05 was considered statistically significant.

RESULTS

Out of the 204 cases recruited, 141 cases were in the age group of 18-40 years. The mean age of patients was found of be 35.78 ±13.92. Among the gender distribution, Female were predominant with 104 cases of total 204 cases. Male were 100 cases. 41(20.10%) patients belonged to lower class and 163 (79.90%) patients belonged to middle class (table 1).
Co-morbidity found were hypertension among 9 (4.41%), Diabetic mellitus among 8 (3.94%), COPD /BA among 5 (1.45%), TB among 4 (1.96%), renal disease among 4 (1.96%), heart disease 2(0.98%), Liver disease among 4 (1.96 %), Epilepsy 1 (0.49%). Rest had no comorbidity (table 1).
Risk factor found were Immuno-compromised among 20(9.80%), Laxative 5(3 %), Fertility agent 3 (1.47%), Antibiotis2(0.98%), NSAID 2(0.98%), IUD 2(0.98%), Narcotic 1(0.49%). Rest had no risk factor (table 1).
Timing of pain more than 48 hours to 7 days among 92 (45.65%), 0-24 hours among 87(42.65%), >24-48 hours among 25(12.25%) (table 1).

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Prevalence of acute abdomen pain found maximum in whole abdomen 41 (19.30%) followed by right hypochondrium and right iliac fossa similar prevalence of 32 cases each (15.69%). Dull aching pain was most common with a frequency of 114(55.88%). Pain in the abdomen was referred most common in back 130(63.73%) (table 2).

WBF scale was used to grade the severity of pain, WBF scale of 1-4, 5-7 and 8-10 was seen in 13(6.37%), 139(68.14%) and 52(25.49%) of patients (table 2).

One associated symptom 127 cases. One associated symptom most common vomiting 51(25%), followed by Nausea 19(9.31%). More than one associated symptom most common fever with vomiting 28(13.72%) followed by fever with jaundice 5(2.45%) (table 2).

Clinical sign presented in study 124 cases (59.78%), Absent clinical sign in 80 cases (39.22%). Most common clinical sign tenderness 111(54.4%) followed by tenderness with guarding 4(1.96%), tenderness with rigidity 3 (1.47%), tenderness with rigidity and guarding 3(1.47%), Rebound tenderness 2(0.98%), Murphy sign 1(0.49%) (table 3).

The final diagnosis was grouped as follows: Surgical 77(37.74%), Urinary tract related 42(20.58%), Gastro- intestinal 40(19.60%), Obstetrics and gynecology related 14(6.86%) and Nonspecific diagnosis 31(15.19%) (Figure 1).

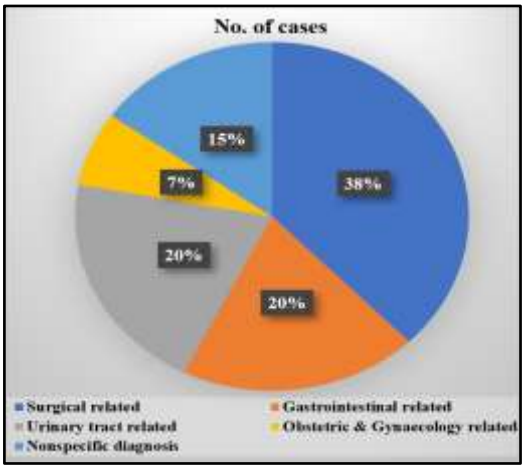

Figure 1: Final diagnosis (n=204)

Table 1: Demographic characteristics of patients presenting to ED with acute abdomen pain

CHARACTERISTICS	NUMBER	PERCENTAGE
AGE		
18-40	141	69.11
41-60	50	24.50
>60	13	6.37
GENDER		
Male	100	49
Female	104	51
SOCIO- ECONOMIC STATUS		
Lower	41	20
Middle	163	80
DURATION OF PAIN		
0-24 hour	87	42.05
>24-48 hour	25	12.25
> 48 hour-7 days	92	45.65
CO-MORBIDITY		
No	169	82
Yes	35	17.15
Hypertension	9	4.44
Diabetes mellitus	8	3.94
COPD/BA	5	2.45
TB	4	1.96
Renal disease	4	1.96
Liver disease	4	1.96
Heart disease	2	0.98
Epilepsy	1	0.49
RISK FACTOR		
No	169	82
Yes	35	17.15
Immuno-compromised	20	9.80
Laxative	5	3
Fertility agents	3	1.47
Antibiotic	2	0.98
NSAID	2	0.98
IUD	2	0.98
Narcotic	1	0.49

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 2: Clinical symptom characteristics

VARIABLE	FREQUENCY	PERCENTAGE
PAIN SEVERITY SCORE		
1-4	13	6.37
5-7	139	68.14
8-10	52	25.19
LOCATION OF PAIN		
Whole abdomen	41	19.30
Right hypochondrium	32	15.69
Right iliac fossa	32	15.69
Epigastric	28	13.72
Left lumbar	24	11.76
Lower abdomen	22	10.78
Right lumbar	12	7.53
Epigastric with right Hypochondrium	5	2.25
Periumbilical	2	0.98
B/L Lumbar region	1	0.49
PAIN CHARACTER		
Dull aching	114	55.88
Colicky	65	31.86
Pricking	11	5.39
Burning	8	3.92
Throbbing	6	2.94
REFERRED PAIN		
No	67	33
Yes (Back)	137	67
ASSOCIATE SYMPTOMS		
No	29	14
One associate symptom	127	62
Vomiting	51	25
Nausea	19	9.31
More than one associate symptoms	48	24
Fever with vomiting	28	13.72
Fever with jaundice	5	2.45

Table 3: Clinical signs

VARIABLE	NUMBER	PERCENTAGE
Normal	80	39.22
Tenderness	111	54.40
Tenderness with Guarding	4	1.96
Tenderness with Rigidity	3	1.47
Tenderness with rigidity and guarding	3	1.47
Rebound tenderness	2	0.98
Murphy sign	1	0.49

DISCUSSION

Acute abdominal pain is one of the most frequent complaints of patients presenting to ED. To the patients, the risks are missed diagnosis, over investigation and even an undue intervention. All patients with abdomen pain don't require extensive diagnosis tests. Sometimes adequate history and physical evaluation along is sufficient to accurately diagnose the condition and treat accordingly.

In our study 204 patients, Maximum numbers of patients were present in the young age group 69.11% cases followed by 50 patients' middle age. Only 6.37 % of patients in seniors age group. Tripta S bhagat et al.[9] found maximum number of patients were presents in young age group 78.5% followed by 30 patients middle age group. Only 6.5% patients in senior age group.

In our study, AAP was a more common presentation in female (51%) than male (49%). Tripta S bhagat et al.[9] found pain abdomen was a more common presentation in female (55%) than male (45%).

In present study duration of pain found were more common >48 hour to 7 day among 45.65% followed by 0-24 hour 42.65%, >24-48 hour 12.25%. Chanana et al.[10] observed duration of pain found were more common <3 day among 76.9% followed by more than 3 day among 23.10%.

In our study 204 patients' co-morbidity found were hypertension 8(3.94%), Diabetic mellitus 8(3.94%), COPA/BA 5(2.45%). Tripta S bhagat et al[9] Co-morbidity found were Diabetic mellitus 9(4.5%), Hypertension 7(3.5%).

As character of pain gives a clinical hint about the ongoing etiology. In our study, dull aching type pain was seen most common 114(55.88%) patients followed by colicky pain 65(31.86%), pricking 11(5.39%), burning8(3.92%), throbbing 6(2.94%). Tripta S bhagat et al.[9] Observed that the common types of pain included colicky (60%) followed by dull aching (55%), burning (8.5%), throbbing (4%).

In our study most, patients (68.14%) presented with a pain score of 5-7 on WBF score. WBF score is a stranded scoring system used to assess the severity

ISSN (O): 2687-5365; ISSN (P): 2753-6556

of pain and had been validated in our regional population by Bashir et al.[11]

In our study referred pain presented in 67 % patients. Most common referred pain site back (64.21%). No referred pain 33% patients. Chanana et al.[10] found no referred pain (64.8%). Most common site referred pain groin region (20%).

In presents study most common associated symptom with acute abdomen pain, vomiting in 25% patients. Jain et al.[12] found that the commonest associate symptoms vomiting (71.40%). Chanana et al.[10] found most common associate symptoms vomiting (57.20%). Tripta S bhagat et al.[9] found most common associate symptoms vomiting (42%).

In our study clinical sign were found in 124(59.78%) cases. Absents clinical sign were in 80(39.22%). Most common clinical sign presented tenderness 111(54.40%). Tripta S bhagat et al.[9] found absents clinical sign in 55 % cases. Most common clinical sign presents tenderness 88(43.13%). In this study ureteric colic were most common cause of AAP followed by acute appendicitis. Where in study by Tripta S bhagat et al.[9] found acute cholecystitis and renal colic were more common followed by acute appendicitis. Where in study by Thakur et al.[8] found acute appendicitis was more common followed cholecystitis and renal colic.

CONCLUSION

Acute abdominal pain is a common ED symptom and clinicians consider multiple diagnosis, especially those that require immediate intervention to limit morbidity and mortality.

REFERENCES

1. White MJ, Councilman FL. Troubleshooting acute abdominal pain. Emerg Med 2002; 34(1):34-42.
2. Hardy A. Butler b. Crandall BSM. The evaluation of the acute abdomen common problem in acute care surgeon. Springer publishing company new .2013;10(10):19-30.
3. Laurell H, Hansson et al. Acute abdomen pain among elderly patients. Gerontology 2006;52:339-344.
4. Townsend CM, Beauchamy RD et al. Sabiston textbook of surgery 19 ed 2012.
5. AL Mulhim AA, Emergency general surgical admission. prospective institutional. Experience in non-traumatic acute abdomen. Sau medj 2006:1674-09.
6. Abdullah MT, Hanif et al. Presentation and outcome of acute abdomen pain in tertiary care units. Annals of PIMS.2011;7:137-47.
7. Eguma SA, Kalba DU. An adults of emergency anesthesia and surgery. The Nigeria Journal of surgery. 2003;5 (4):140-147.
8. Jiwesh kumar Thakur et al. Epidemiology of acute abdominal pain: a cross-sectional study in a tertiary care hospital of Eastern India. Int Surg J. 2019Feb;6(2):345-348.
9. Tripta S Bhagat et al. To study epidemiology and clinical profile of adult patients with acute abdominal pain attending tertiary care hospital. Santosh university journal of health sciences, July-December, 2019;5(2):105-108.
10. Chanana et al. Clinical profile of nontraumatic acute abdominal pain presenting to an adult emergency department. Journal of family medicine and primary care July 2015;4(3):
11. Bashir MS et al. A comparative study between different pain rating scales in patients of osteoarthritis. Indian J physiol pharmacol 2013; 57:205-8.
12. Jain PK et al. Comparative study of plain Xray abdomen, Ultrasonography and CT diagnosis of nontraumatic acute abdomen. Int J Med App Sci 2014;3(4):253-9.

ISSN (O): 2687-5365; ISSN (P): 2753-6556