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ORIGINAL RESEARCH

Study on the Clinical Characteristics of Patients Presenting with Non-Traumatic Acute Abdomen in a Tertiary Care Hospital

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ABSTRACT

Aim: To analyze the clinical characteristics, etiologies, and outcomes of patients presenting with non-traumatic acute abdomen in a tertiary care hospital. **Materials and Methods:** This retrospective study was conducted in the Department of General Surgery, involving 200 patients aged 15 years and older who presented with non-traumatic acute abdominal pain. Pregnant women with pre-established diagnoses were excluded. Comprehensive clinical evaluations, including medical history, physical examinations, abdominal X-rays, and Ultrasonography (USG), were performed for all patients. Additional radiological and laboratory investigations were conducted as needed. Pain management was administered based on severity, and patients were followed up until discharge from the emergency department or admission to the ward, with final diagnoses recorded. **Results:** The study population included 65.5% males and 34.5% females, with the majority (58.5%) in the 16-31 age group. Acute appendicitis was the most common etiology (31.5%), followed by intestinal obstruction (12.5%) and nephrolithiasis (10.5%). Complications were observed in 17.5% of patients, and the overall mortality rate was 2%. Timely interventions and appropriate management contributed to favorable outcomes, as evidenced by a 98% survival rate. **Conclusion:** This study demonstrates the variability in the clinical presentation and etiologies of non-traumatic acute abdomen. Younger age groups and males were predominantly affected, with acute appendicitis being the leading cause. Effective diagnostic strategies and timely management minimized complications and mortality, underscoring the importance of systematic approaches in acute abdominal emergencies.

Keywords: Non-traumatic acute abdomen, acute appendicitis, clinical characteristics

INTRODUCTION

Acute abdomen refers to the sudden onset of severe abdominal pain that often requires immediate medical attention and, in many cases, surgical intervention. It represents a wide spectrum of underlying causes, ranging from relatively benign conditions to life-threatening emergencies. Among these, non-traumatic acute abdomen is particularly significant as it excludes pain caused by external injuries and focuses on a diverse array of medical, surgical, and gynecological pathologies. The clinical evaluation and management of such patients remain a cornerstone of emergency and general surgical practice.[1]Non-traumatic acute abdomen is a complex diagnostic entity because it involves multiple organ systems and presents with overlapping symptoms. The diagnosis often demands a systematic approach, combining a detailed clinical history, thorough physical examination, and judicious use of laboratory and imaging investigations. Accurate identification of the underlying cause is essential for timely and effective treatment, as delays can lead to significant morbidity and mortality. In a resource-limited setting, the challenge of managing such cases is even greater, requiring clinicians to balance the urgency of the situation with the availability of diagnostic tools.[2]The etiological spectrum of non-traumatic acute abdomen varies based on factors such as age, sex, geographic location, and socioeconomic status. Common causes include acute appendicitis, intestinal obstruction, cholecystitis, perforated peptic ulcer, and pancreatitis. However, rarer conditions like mesenteric ischemia, ectopic pregnancy, and malignancies can also contribute to acute abdominal pain. The variability in

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causes necessitates a broad differential diagnosis, which must be refined based on the patient's clinical presentation and demographic characteristics. Moreover, comorbid conditions such as diabetes, hypertension, or previous abdominal surgeries often complicate the clinical scenario, affecting both the diagnosis and management.[3]The management of non-traumatic acute abdomen has evolved significantly with advances in medical technology, including high-resolution imaging and minimally invasive surgical techniques. Computed tomography (CT) scans and ultrasonography play a pivotal role in narrowing the differential diagnosis and guiding therapeutic decisions. Laparoscopy, once primarily a diagnostic tool, has now become a mainstay for both diagnostic and therapeutic interventions in cases such as appendicitis and gallstone-related diseases. Despite these advancements, early recognition and clinical acumen remain critical, particularly in settings where advanced imaging may not be readily available.[4]Understanding the clinical characteristics of patients presenting with non-traumatic acute abdomen can provide valuable insights into the epidemiological trends, diagnostic challenges, and management strategies. Such studies are essential for identifying common etiologies, recognizing high-risk groups, and optimizing resource utilization. They also contribute to the development of evidence-based protocols that can improve patient outcomes and reduce healthcare costs.[5]Non-traumatic acute abdomen remains a significant cause of emergency department visits and hospital admissions worldwide. The condition not only affects the quality of life but also imposes a substantial economic burden on healthcare systems. Timely diagnosis and effective management are crucial to prevent complications such as sepsis, organ failure, or death. Moreover, understanding the patterns and predictors of morbidity and mortality in these patients can guide preventive measures and improve overall healthcare delivery.[6,7]

This study aims to analyze the clinical characteristics of patients presenting with non-traumatic acute abdomen in a tertiary care hospital. By examining factors such as demographic profiles, presenting symptoms, diagnostic findings, and management outcomes, the study seeks to contribute to the existing body of knowledge and highlight areas for improvement in clinical practice. It also aims to explore the role of comorbidities and delayed presentations in influencing patient outcomes. Such an analysis is expected to provide a comprehensive understanding of the condition and guide future research and policy-making efforts.

MATERIALS AND METHODS

This study was a retrospective analysis conducted in the Department of General Surgery, focusing on patients presenting with non-traumatic acute abdominal pain. The study included individuals aged 15 years and older who arrived at the emergency department with abdominal pain, excluding all pregnant women who had already received a diagnosis. A detailed clinical evaluation was carried out for each patient, including a thorough medical history and physical examination. Following this, abdominal X-rays and Ultrasonography (USG) were routinely performed. Additional radiological and laboratory investigations were conducted based on clinical necessity.Pain management was provided to patients either orally or intravenously, depending on the severity of their symptoms. Patients were monitored throughout their stay in the emergency department or admitted ward until discharge, with the final diagnosis recorded at the time of discharge. A total of 200 patients met the inclusion criteria and were analyzed in this study.

RESULTS

Table 1: Distribution Based on Age

The majority of patients (58.5%) fall within the age group of 16-31 years, indicating that acute conditions leading to hospital visits are more common in younger individuals. This is likely due to the higher prevalence of acute appendicitis and other inflammatory conditions in this age group. The 32-51 age group accounts for 30.5% of patients, suggesting a significant number of middle-aged individuals presenting with acute abdominal issues. The smallest group, those aged above 51 years (11%), indicates that while older individuals are less commonly affected, their conditions might be more severe, often linked to comorbidities or chronic ailments.

Table 2: Distribution Based on Sex

The patient population shows a male predominance, with 65.5% of cases, compared to 34.5% female patients. This could be due to the higher prevalence of certain conditions, such as acute appendicitis and nephrolithiasis, in men. Additionally, lifestyle factors and differences in health-seeking behavior may contribute to this disparity. Females constitute a smaller proportion, although certain conditions like ectopic pregnancy and gallstone-related diseases are unique to or more common in women.

Table 3: Distribution Based on Pain Duration

A significant majority (68%) of patients presented with pain lasting less than 3 days, indicating that most cases are acute and prompt medical attention is sought. Only 32% of patients had pain persisting for more than 3 days, which may suggest delayed presentation due to either underestimation of symptoms or other barriers to accessing healthcare. Quick intervention in cases of acute abdomen is critical to prevent complications, and this data underscores the importance of early diagnosis and treatment.

Table 4: Distribution Based on Comorbidity

Comorbidities are relatively infrequent in this patient population, with Type 2 Diabetes being the most common (7%), followed by hypertension (5%). Post laparotomy conditions (4%), malignancies (3%), and

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tuberculosis (1%) highlight the diversity of underlying health issues that may complicate acute abdomen cases. These comorbidities can influence both the clinical presentation and outcomes, emphasizing the need for individualized care plans in such patients.

Table 5: Distribution Based on Etiology of Acute Abdomen

The most common cause of acute abdomen was acute appendicitis (31.5%), a well-known condition frequently requiring emergency surgical intervention. Acute intestinal obstruction (12.5%) and nephrolithiasis (10.5%) also represent significant portions of cases, requiring timely and often surgical management. Gallstone-related diseases, including acute calcular cholecystitis (10.5%) and acute acalcular cholecystitis (6.0%), are also prominent causes. Less common conditions, such as ectopic pregnancy (0.5%) and mesenteric ischemia (0.5%), reflect the variety of acute abdominal presentations. This data emphasizes the need for a systematic approach to diagnosis and management in the emergency setting.

Table 6: Distribution of Complications

Complications were noted in 17.5% of patients, with gastrointestinal issues being rare (0.5%). The broad category of "Other" complications likely includes post-surgical complications, infections, and other systemic issues. The relatively low complication rate suggests effective management in most cases but highlights the importance of vigilant monitoring and intervention for those at risk.

Table 7: Mortality Among Patients

The survival rate among the patient cohort is very high at 98.0%, with only 2.0% mortality. This reflects the effectiveness of emergency care and timely intervention in managing acute abdomen cases. The small percentage of non-survivors could represent patients with severe complications, delayed presentations, or underlying comorbidities that contributed to poor outcomes.

Table 1: Distribution Based on Age

Age (Years)	No. of Patients	Percentage
16-31	117	58.5%
32-51	61	30.5%
>51	22	11.0%
Total	**200**	**100%**

Table 2: Distribution Based on Sex

Sex	No. of Patients	Percentage
Male	131	65.5%
Female	69	34.5%
Total	**200**	**100%**

Table 3: Distribution Based on Pain Duration

Duration (Days)	No. of Patients	Percentage
<3	136	68.0%
>3	64	32.0%
Total	**200**	**100%**

Table 4: Distribution Based on Comorbidity

Comorbidity	No. of Patients	Percentage
Hypertension	10	5.0%
Type 2 Diabetes	14	7.0%
IHD	2	1.0%
Post Laparotomy	8	4.0%
Malignancy	6	3.0%
Tuberculosis	2	1.0%
Total	**200**	**100%**

Table 5: Distribution Based on Etiology of Acute Abdomen

Etiology	No. of Patients	Percentage
Acute appendicitis	63	31.5%
Acute intestinal obstruction	25	12.5%
Acute acalcular pancreatitis	7	3.5%
Acute calcular pancreatitis	9	4.5%
Acute acalcular cholecystitis	12	6.0%
Acute calcular cholecystitis	21	10.5%
Mesenteric ischemia	1	0.5%

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Perforated peptic ulcer	7	3.5%
Peritonitis	9	4.5%
Nephrolithiasis	21	10.5%
Ectopic Pregnancy	1	0.5%
Liver abscess	4	2.0%
Acute myocardial infarction	1	0.5%
Pleurisy	4	2.0%
Acid peptic disease	11	5.5%
Acute urine retention	3	1.5%
Total	**200**	**100%**

Table 6: Distribution of Complications

Complications	No. of Patients	Percentage
GI	1	0.5%
Other	35	17.5%
Total	**200**	**100%**

Table 7: Mortality Among Patients

Mortality	No. of Patients	Percentage
Survivors	196	98.0%
Non-Survivors	4	2.0%
Total	**200**	**100%**

DISCUSSION

In this study, the majority of patients (58.5%) were in the 16-31 age group, followed by 30.5% in the 32-51 group, and 11% above 51 years. This trend aligns with the findings of Sharma et al. (2018), who reported that 60% of acute abdomen cases occurred in individuals younger than 40 years.[8]Similarly, Patel et al. (2020) found 57% of cases in the younger age group, emphasizing the predominance of inflammatory conditions like appendicitis and the comparatively lower prevalence of chronic or severe conditions in older populations.[9]The male predominance observed in this study (65.5%) is consistent with the findings of Sharma et al. (2019), who reported a similar distribution with 66% male and 34% female cases.[8] This male predominance is likely due to conditions such as appendicitis and nephrolithiasis, which are more common in males. Kumar et al. (2021) also reported a comparable trend, attributing the disparity to lifestyle differences and health-seeking behavior.[10]In this study, 68% of patients presented with pain lasting less than 3 days. This aligns with the findings of Reddy et al. (2020), where early presentation (within 72 hours) accounted for 70% of cases.[11] The delayed presentation in 32% of cases may reflect barriers to healthcare access or misinterpretation of symptoms, as noted by Ahmed et al. (2018), who observed a similar delayed presentation rate of 35%.[12]Comorbidities were noted in a minority of patients, with Type 2 Diabetes (7%) and hypertension (5%) being the most common. These results align with those of Gupta et al. (2019), who reported 8% and 6% rates for diabetes and hypertension, respectively, in acute abdomen patients.[13] Patel et al. (2020) also highlighted the role of comorbidities in complicating surgical outcomes, with malignancies and post-surgical adhesions being additional contributors.[9]Acute appendicitis was the most frequent cause of acute abdomen (31.5%), consistent with the findings of Sharma et al. (2018), who reported appendicitis in 33% of cases. Nephrolithiasis (10.5%) and intestinal obstruction (12.5%) were also significant contributors.[8] Similar results were reported by Reddy et al. (2020), who found these conditions in 9% and 14% of cases, respectively. Rare conditions like ectopic pregnancy (0.5%) and mesenteric ischemia (0.5%) were noted, highlighting the diagnostic challenges in emergency settings.[11]The complication rate in this study was 17.5%, with gastrointestinal complications being rare (0.5%). These findings are similar to those of Kumar et al. (2021), who reported a 19% complication rate.[10] Ahmed et al. (2018) also observed a low rate of specific gastrointestinal complications (0.7%), emphasizing the importance of effective postoperative care to minimize adverse outcomes.[12]The mortality rate was 2%, with a survival rate of 98%. This is consistent with the findings of Patel et al. (2020), who reported a 2.5% mortality rate in their cohort.[9] The low mortality reflects advancements in emergency care and surgical techniques. However, Singh et al. (2021) noted that delayed presentations and severe comorbidities increase mortality risk, which highlights the need for timely intervention in acute abdomen cases.[14]

CONCLUSION

This study highlights the diverse clinical characteristics and etiologies of non-traumatic acute abdomen in patients presenting to a tertiary care hospital. The findings underscore the predominance of younger age groups and males, with acute

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appendicitis being the most common cause. Timely diagnosis, comprehensive evaluation, and appropriate management were key to minimizing complications and achieving favorable outcomes. The low mortality rate reflects the effectiveness of advanced medical and surgical interventions. These insights can guide future protocols to optimize care and improve outcomes for patients with acute abdominal conditions.

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