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Clinical Outcomes of Acute Abdomen Cases During the COVID-19 Crisis at Government Medical College and Hospital, Mahabubnagar, Telangana, India

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ABSTRACT
The COVID-19 pandemic posed unprecedented challenges to healthcare systems worldwide, significantly impacting the management of acute medical conditions such as acute abdomen. The objective of this study was to evaluate the clinical outcomes of patients presenting with acute abdomen during the COVID-19 crisis at Government Medical College and Hospital, Mahabubnagar, Telangana, India. This study was conducted over two years (2020-2022) and included 200 patients diagnosed with acute abdomen. Data on patient demographics, diagnosis, management strategies and clinical outcomes were systematically collected and analyzed. The study focused on understanding the distribution of diagnoses, the management strategies employed and the duration of hospital stays during the pandemic. The study revealed that acute appendicitis was the most prevalent diagnosis, accounting for 42.5% of cases. Management strategies varied, with 50% of the patients undergoing appendicectomy and 30% managed medically. The duration of hospital stay was primarily between 8-10 days for 45% of the patients. Despite the challenges posed by the pandemic, the overall management outcomes were favorable, reflecting the resilience and adaptability of the healthcare system. The study highlights the effective management of acute abdomen cases during the COVID-19 pandemic, underscoring the importance of flexible healthcare delivery models in crisis situations. The findings suggest that with appropriate strategies, satisfactory patient outcomes can be achieved even under challenging circumstances.

INTRODUCTION

The emergence of the COVID-19 pandemic in early 2020 brought about a paradigm shift in the way healthcare systems across the globe operated. Hospitals were overwhelmed with COVID-19 cases, leading to a reallocation of medical resources, including the suspension of elective surgeries and the modification of standard care protocols for non-COVID-19 conditions. Acute abdomen, a condition requiring urgent surgical intervention, was significantly impacted by these changes[1-2].

The Government Medical College and Hospital, Mahabubnagar, Telangana, India, serves as a tertiary care center catering to a large population. During the pandemic, the hospital faced significant challenges in managing acute abdomen cases, given the restrictions imposed on surgical procedures and the need to minimize patient exposure to the virus[3-6]. This study was undertaken to assess the clinical outcomes of acute abdomen cases managed during the COVID-19 crisis, focusing on the types of diagnoses, management strategies employed and patient outcomes. Understanding these outcomes is crucial for informing future crisis management strategies and ensuring the continuity of essential surgical services.

MATERIALS AND METHODS

This observational study was conducted over a two-year period, from February 2020-2022, at the Government Medical College ands Hospital, Mahabubnagar, Telangana, India. The study aimed to evaluate the clinical outcomes of patients presenting with acute abdomen during the COVID-19 pandemic.

Study Population and Inclusion Criteria: The study included 200 patients diagnosed with acute abdomen during the study period. The inclusion criteria were as follows:

- Patients aged 18 years and above.
- Patients diagnosed with acute abdomen based on clinical evaluation, imaging and laboratory findings.

Exclusion Criteria: Patients with a history of abdominal surgery within the last six months were excluded from the study. Additionally, patients who presented with COVID-19 related complications were excluded to focus on non-COVID-19 acute abdomen cases.

Data Collection: Data were collected from day wise inpatient basis, hospital records, including patient demographics (age, gender), diagnosis, type of surgical or medical management and duration of hospital stay. The data were then entered into a standardized database for analysis.

Statistical Analysis: The data were analyzed using SPSS software (version 22.0). Descriptive statistics were used to summarize the demographic characteristics, diagnosis distribution, management strategies and hospital stay durations. Continuous variables were presented as mean±standard deviation, while categorical variables were expressed as percentages. Chi-square tests were employed to compare categorical variables and a p-value<0.05 was considered statistically significant.

RESULTS AND DISCUSSIONS

The study included 200 patients diagnosed with acute abdomen. The mean age of the patients was 37.2 years, with a range of 18-75 years. The gender distribution was relatively balanced, with 55% males and 45% females.

The most common diagnosis among the patients was acute appendicitis, which accounted for 42.5% of all cases. Renal Calculi was the second most common diagnosis, comprising 17.5% of the cases, followed by Hollow viscus perforation (15%) and pancreatitis (10%).

Management of these cases varied based on the diagnosis. The majority of patients (50%) underwent appendicectomy, which is consistent with the high prevalence of acute appendicitis. A significant proportion of patients (30%) were managed medically, reflecting the conservative approach taken during the pandemic to minimize surgical risks and reduce hospital stay durations.

The duration of hospital stay was a critical parameter in this study, as minimizing hospital stays was essential to reduce the risk of COVID-19 exposure for both

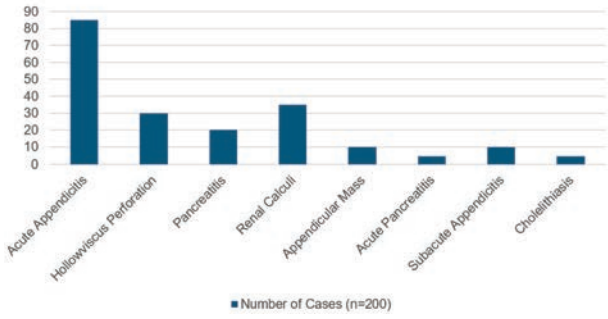

Fig.1: Diagnosis Distribution

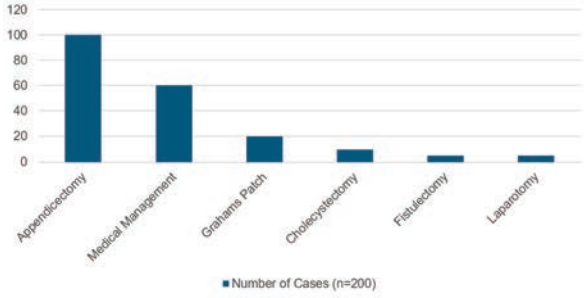

Fig.2: Management of Acute Abdomen Cases

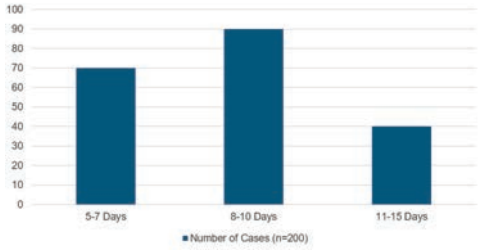

Fig.3: Duration of Hospital Stay

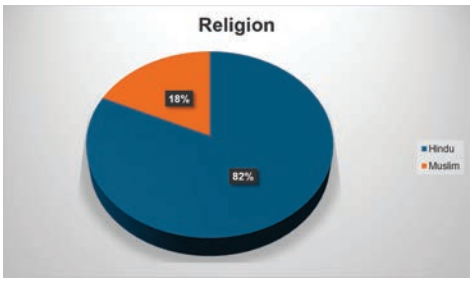

Fig.4: Religion

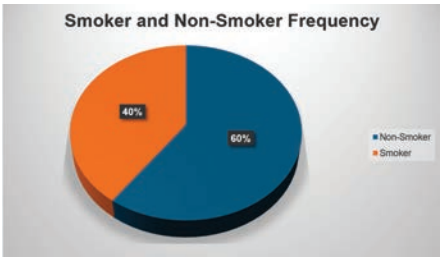

Fig.5: Smokers and Non Smokers Frequency

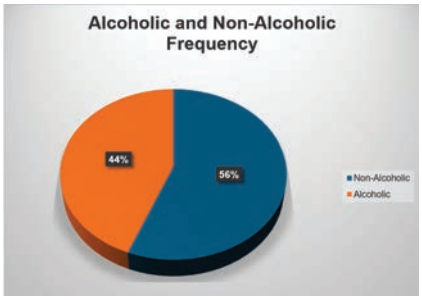

Fig.6: Alcoholic and Non Alcoholic Frequency

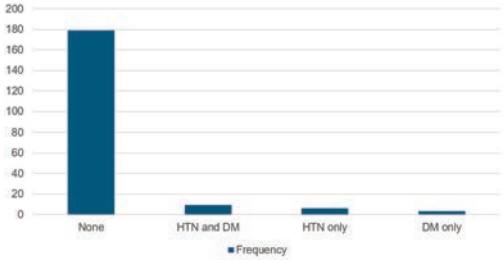

Fig.7: Comorbidities

Table 1: Demographic Characteristics of Patients

Characteristic	value
Total Patients	200
Mean Age (years)	37.2
Gender Distribution	Male: 55% (110)
	Female: 45% (90)

Table 2: Diagnosis Distribution

Diagnosis	Number of Cases (n=200)	Percentage (%)
Acute Appendicitis	85	42.5
Hollow viscus Perforation	30	15.0
Pancreatitis	20	10.0
Renal Calculi	35	17.5
Appendicular Mass	10	5.0
Acute Pancreatitis	5	2.5
Subacute Appendicitis	10	5.0
Cholelithiasis	5	2.5

Table 3: Management of Acute Abdomen Cases

Management Procedure	Number of Cases (n=200)	Percentage (%)
Appendicectomy	100	50.0
Medical Management	60	30.0
Grahams Patch	20	10.0
Cholecystectomy	10	5.0
Fistulectomy	5	2.5
Laparotomy	5	2.5

Table 4: Duration of Hospital Stay

Duration (Days)	Number of Cases (n=200)	Percentage (%)
5-7 Days	70	35.0
8-10 Days	90	45.0
11-15 Days	40	20.0

Table 5: Distribution of Religions

Religion	Frequency	Percentage
Hindu	164	82.41%
Muslim	36	17.6%

Table 6: Smoker and Non-Smoker Frequency

Smoker	Frequency
Non-Smoker	120
Smoker	80

Table 7: Alcoholic and Non-Alcoholic Frequency

Alcoholic	Frequency
Non-Alcoholic	112
Alcoholic	88

Table 8: Comorbidities (HTN/DM) Frequency

Comorbidity	Frequency
None	179
HTN and DM	9
HTN only	6
DM only	3

patients and healthcare workers. The majority of patients (45%) had a hospital stay of 8-10 days, while 35% of patients had a shorter stay of 5-7 days. A minority of patients (20%) required a longer hospital stay of 11-15 days, likely due to more complicated cases or delays in recovery.

The COVID-19 pandemic created a challenging environment for the management of acute abdomen cases, as healthcare resources were stretched thin and the risk of virus transmission necessitated significant modifications to standard care protocols. Despite these challenges, the Government Medical College and Hospital in Mahabubnagar demonstrated resilience in managing acute abdomen cases effectively.

The high prevalence of acute appendicitis observed in this study is consistent with global trends and underscores the importance of maintaining surgical services for life-threatening conditions even during a pandemic. The reliance on appendicectomy as the primary management strategy for acute appendicitis reflects the hospital's ability to prioritize surgical interventions for critical cases while adopting a conservative approach for less urgent conditions[7].

The use of medical management for 30% of the cases highlights the hospital's strategy to reduce surgical interventions when possible, aligning with pandemic guidelines that recommended minimizing non-essential surgeries to conserve resources and reduce patient exposure to COVID-19. This approach was particularly important for managing cases such as pancreatitis and renal calculi, where medical management could be safely implemented[8].

The distribution of hospital stay durations provides insight into the hospital's efforts to optimize patient flow and minimize the risk of COVID-19 transmission. The majority of patients had a hospital stay of 8-10 days, which reflects the balance between providing adequate care and ensuring early discharge when clinically appropriate. The shorter hospital stays observed in 35% of the patients suggest that the hospital successfully implemented early discharge protocols for patients with uncomplicated cases[9].

However, the study also identified areas for improvement, particularly in managing more complicated cases that required longer hospital stays. These cases highlight the need for rapid diagnostic and treatment protocols to facilitate quicker recovery and reduce the burden on hospital resources during a pandemic[3-10].

CONCLUSION

The findings of this study demonstrate the adaptability and effectiveness of the healthcare system at Government Medical College and Hospital, Mahbubnagar, in managing acute abdomen cases during the COVID-19 crisis. Despite the challenges posed by the pandemic, the hospital successfully maintained surgical services for critical cases, particularly acute appendicitis, while also implementing conservative management strategies to minimize surgical risks and reduce hospital stay durations.

The study's results underscore the importance of flexibility in healthcare delivery, particularly during times of crisis when standard protocols must be adapted to meet new challenges. The ability to prioritize essential surgeries, adopt conservative management for less critical conditions and implement early discharge protocols contributed to the overall favorable outcomes observed in this study.

These findings have important implications for future healthcare planning, particularly in the context of pandemic preparedness. Hospitals must be equipped to maintain essential surgical services while also being able to rapidly adapt their protocols to manage resources effectively and minimize patient risk. Further research is needed to explore the long-term outcomes of patients managed under these modified protocols and to identify best practices for managing acute medical conditions during public health emergencies.

The successful management of acute abdomen cases at Government Medical College and Hospital, Mahabubnagar, during the COVID-19 pandemic serves as a model for other healthcare institutions facing similar challenges. The lessons learned from this experience will be invaluable in informing future strategies for managing acute medical emergencies during crises, ensuring that patients continue to receive the care they need, even under the most challenging circumstances.

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