

TRENDS OF DIFFERENT TYPE OF EMERGENCY SURGERY AT TERTIARY CARE HOSPITAL IN WESTERN RAJASTHAN

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ABSTRACT

INTRODUCTION: In low-and middle-income countries (LMICs), at least 60 percent of the surgical operations performed are for emergencies. Thus needs to diverts majority of the resources towards the emergency department.

AIM: To assess the socio-demographic profile of emergency surgery, To assess the prevalence of different type of surgical emergencies, To assess the various complications of different type of emergency surgeries and outcome of emergency surgeries.

METHOD: Study conducted on 300 patients aged 13 years and above at the Department of Surgery, S.P. Medical College and P.B.M Hospital, Bikaner from December 2019 to November 2021. Convenience sampling method was used for sampling of cases. All Patients of age 13 years and above, regardless of gender, admitted with clinical and/or radiological evidence of general surgical emergencies and undergoing surgical intervention, enrolled in the study.

RESULT: Majority of patients in our study are males. The male to female ratio is 2.26 :1. Majority of patients in our study are from 21-40 years age group followed by 41-60 years age group. Most common surgical intervention done was exploratory laparotomy followed by appendectomy.

CONCLUSION: Early diagnosis of surgical emergencies careful selection of cases for surgery, skilful operative management, proper technique during surgery and intensive post-operative treatment yield grateful results.

KEY WORDS: Emergency surgeries, Diagnosis, Emergency department, Exploratory laparotomy

INTRODUCTION

In a country like ours, the increased number of surgical emergencies presenting to a hospital diverts majority of the resources towards the emergency department.¹ In low-and middle-income countries (LMICs), at least 60% of the surgical operations performed are for emergencies. The skills needed for emergency surgery include the ability to undertake those abdominal and pelvic (including urological), thoracic, vascular and soft tissue procedures that need to be performed within 24 hours.²

In the USA, More than 3 million patients are admitted annually to hospitals with Emergency general surgery conditions, representing over 7% of all US hospitalizations. Moreover, there are over 850,000 Emergency general surgery operations performed annually in the USA.^{3,4}

The emergency department's surgeon must understand the pathophysiology of acute disease, how it is influenced by pre-existing comorbidity and be able to rapidly optimise the acutely ill surgical patient. Critical care is best delivered by specialists in intensive care medicine, but the emergency surgeon should be actively involved in this process.⁵

General Surgical Emergencies seen in hospital are Incarcerated and Strangulated Inguinal Hernias, Appendicitis, Intestinal obstruction, Blunt and penetrating abdominal and thoracic trauma etc.⁶

Most non-traumatized surgical patients present to the emergency department with one of three leading complaints: 1. abdominal or groin pain, 2. gastrointestinal bleeding 3. soft tissue infection. After thorough investigation, most of these clinical patterns evolve into unambiguous diagnoses. Some of the clinical patterns that represent acute surgical disease are managed by emergency surgery. Moreover, in certain situations, only surgery leads to proper diagnosis.⁷

The purpose of the management of acute surgical diseases is to save lives by controlling bleeding or contamination, or by improving organ perfusion. Resource availability along patient physiological and clinical parameters in the acute care arena justifies the development of triage tools and agreed criteria for proper timing of emergency operations.

A tertiary care hospital located in any district receives a high volume of emergency surgeries. Understanding this growing need makes it important to study and evaluate the distribution of these patients which shall help in developing a more efficient environment by health education, improve infrastructure to provide ICU care to these patients along with

point of care laboratory, radiology and blood bank facilities.

AIM

To assess the trend of different types of emergency surgery performed at tertiary care hospital.

METHOD

Present study was a prospective descriptive study conducted on 300 patients aged 13 years and above at the Department of Surgery, S.P. Medical College and P.B.M Hospital, Bikaner from January 2020 to December 2021. Convenience sampling method was used for sampling of cases. All Patients of age 13 years and above, regardless of gender, admitted with clinical and/or radiological evidence of general surgical emergencies and undergoing surgical intervention, enrolled in the study. Patients below 13 years of age, not willing to participate in study, who undergone conservative line of management, not willing for surgical intervention and subsequently discharged AMA (discharged Against Medical Advice) and who had other emergency surgeries like neurosurgery, urology, orthopedics and pediatric surgery were ruled out.

Detailed personal history was recorded from the patients. Thorough clinical examination was done. Relevant laboratory and biochemical investigations were done in every patient to find out electrolyte disturbances. General condition of patient assessed and noted down. After adequate resuscitation, correction of electrolyte imbalance, patients were subjected to surgical intervention. Post-operatively most of the patients were monitored in surgical ward and selected patients were shifted to surgical ICU for continuous monitoring in consultation with anesthesiologist. After discharge all the patients were followed up for the first 6 months on OPD basis to observe the development of delayed complications. Statistical analysis was done by Epi info software of CDC.

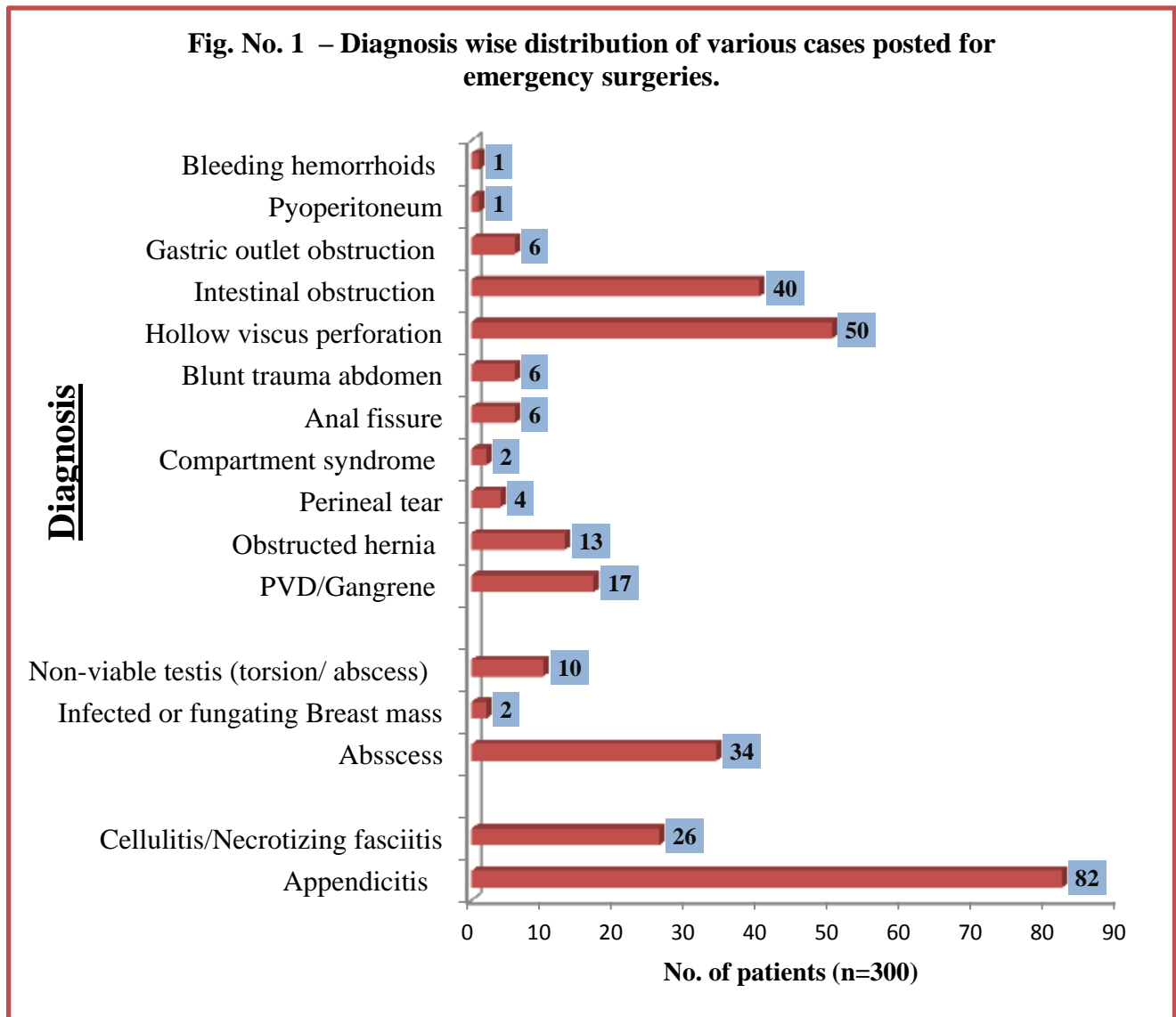
RESULT

Table 1- Sociodemography

Sex	Number of cases	Percentage
Male	208	69.33%
Female	92	30.67%
Age group		
13-20	36	12.00%
21-40	131	43.66%
41-60	93	31.00%
61-80	37	12.33%
>80	3	01.00%
Socio-economic class		
I	11	03.66%
II	19	06.33%
III	26	08.66%
IV	58	19.34%
V	186	62.00%

Majority of patients in our study are males. The male to female ratio is 2.26 :1. Majority of patients in our study are from 21-40 years age group followed by 41-60 years age group.

Most of patients in our study were from lower and lower middle socio-economic class according to modified B.G. Prasad's Socio-economic status.



From above mentioned Chart it is clear that most common indication of emergency surgery were gastrointestinal emergencies like hollow viscus perforation, appendicitis, intestinal obstruction and various obstructed hernias.

Table 2- Distribution of various types of emergency surgeries in general surgery department.

Type of emergency surgery	Number of patients	Percentage
Appendectomy	82	27.33 %
Debridement	26	08.67 %
Incision and drainage	34	11.33 %
Toilet mastectomy	2	00.67%
Orchiectomy	10	03.33%
Amputations	17	05.67%
Obstructed Hernia repair	12	04.00 %
Perineal tear repair	4	01.33%
Fasciotomy	2	00.67%
Lord's dilation Anal fissure	6	02.00%
Exploratory laparotomy	104	34.66 %
Ligation of Bleeding hemorrhoids	1	00.33%

From above mentioned table it is clear that most common emergency surgery performed in department of general surgery

at our institute was exploratory laparotomy, second most common surgery performed in emergency was appendectomy.

Table- 3 Distribution of patients who undergone emergency surgeries according to type of anesthesia.

Type of anesthesia	Number of patients	Percentage
General anesthesia	117	39.00%
Regional anesthesia	154	51.33%
Local anesthesia	29	09.66%

From above mentioned table it is clear that most patients were operated in emergency setting under regional anesthesia (spinal and/or epidural or regional block) followed by general anesthesia.

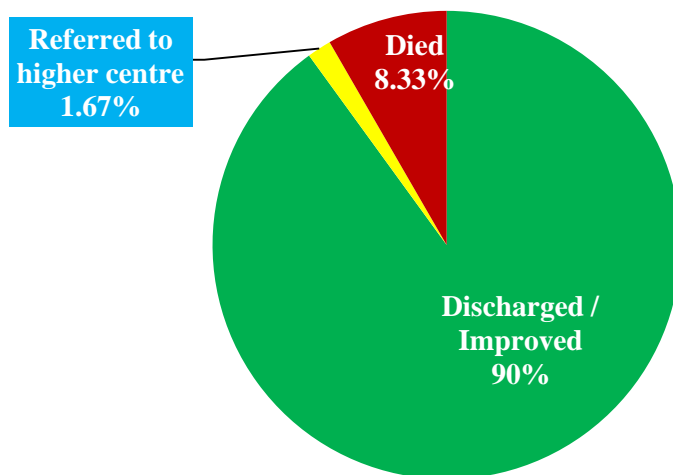
174patients (58.00%) had hospital duration of <7 days. 88 patients (58.00%) had hospital duration of 7-14 days. 38 patients (12.66%) had hospital duration of >14 days. The average hospital stay in our study was 6.6 days.

Table 4 - Distribution of patients according to post-operative complications.

Complication	Number of patients	Percentage
Wound dehiscence /Burst abdomen	8	2.66%
Surgical site infection	23	7.67%
Paralytic ileus	4	1.33%
Anastomotic leak	7	2.33%
Fecal fistula (entero-cutaneous fistula)	2	0.67%
Stoma complications (Prolapse/retraction)	3	1%
Intra-abdominal abscess (Pelvic abscess)	6	2%
Septicemia	18	6%
Pneumonia	13	3.34%
Incisional hernia	6	2%

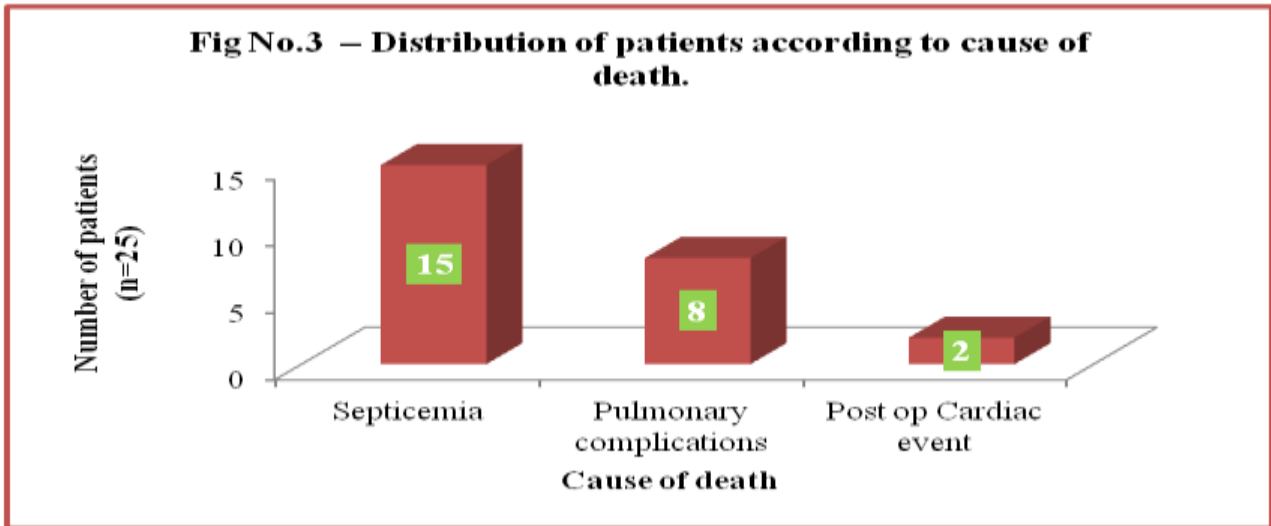
From above mentioned table it is evident that most common complication found in our study population were Surgical site infection (7.6%) And Septicemia (6%)

Fig. 2 – Outcome in patients undergone emergency Surgeries



Number of patients (n=300)

From above mentioned chart it is evident that 90 % of the patients were improved and subsequently discharged, 1.67% patients were referred to higher centre and 8.33 % of the patients were died in our study population. Most common cause of death was septicemia which accounted for 60% of total deaths in our study population.

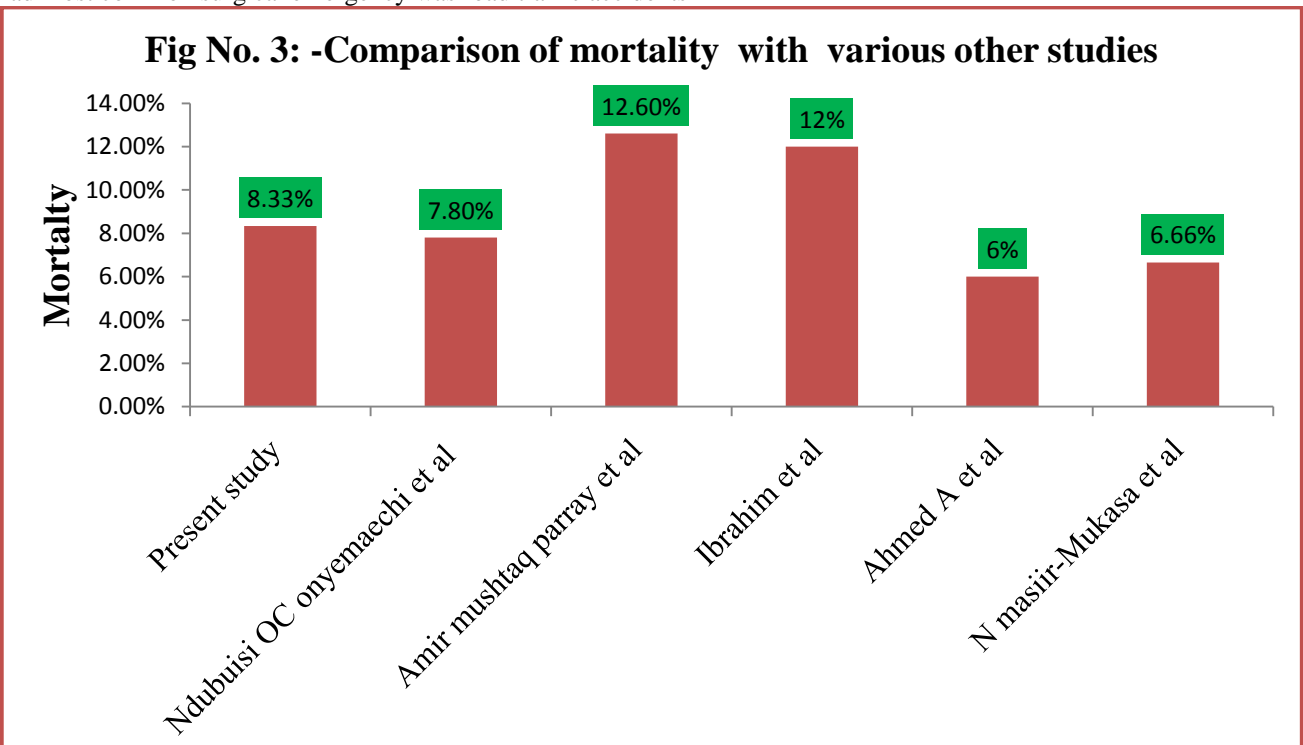


DISCUSSION

In our study surgical emergencies were found to be more common in male when compared to females. Male to female ratio was 2.26:1. Similar ratio was seen by Mahak kakkar *et al*⁸ (1.65:1) and Ndubuisi OC onyemaechi *et al* 2019⁹ (2:1). The minimum age of the patients was 13 years and the maximum age was 85 years, with most common age group between 21-40 years followed by 41-60 years with mean age of 40.2 years. Similarly 33.7 year was seen by Ndubuisi OC onyemaechi *et al* 2019⁹.

In our study most surgical emergencies were gastrointestinal emergencies (including appendicitis (21.33%), Hollow viscus perforation (16.33%) and acute intestinal obstruction (13.33%) etc.) Most common emergency surgery performed was exploratory laparotomy (34.66 %) followed by appendectomy (27.33%). Similarly Mahak kakkar *et al* 2020⁸ performed 56% exploratory laparotomy and Ndubuisi OC onyemaechi *et al* 2019⁹ with most common emergency surgery performed was appendectomy (16.5%) followed by exploratory laparotomy.

In our study Minimum days of hospital stay were 2 days and maximum were 22 days. Mean days of hospital duration were 6.6 days. In a recent study conducted by Ndubuisi OC onyemaechi *et al* 2019⁹ had mean hospital stay of 16.9 days. Such difference is probably due to the fact that in our study most common surgical emergency was appendicitis those patients had eventually shorter hospital stay and In the study conducted by Ndubuisi OC onyemaechi *et al* 2019⁹ had most common surgical emergency was road traffic accidents



Mortality in our study was 8.33 %, which is comparable with other studys.¹⁰⁻¹³

CONCLUSION

Early diagnosis of surgical emergencies careful selection of cases for surgery, skilful operative management, proper technique during surgery and intensive post- operative treatment yield grateful results.

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