

## A Study of Relaparotomies in Department of General Surgery in a Tertiary Care Centre

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### Abstract:

**Problem:** Relaparotomy is a potentially serious adverse postoperative complication requiring urgent or planned reintervention within 60 days of primary abdominal surgery. It not only carries significant morbidities such as wound sepsis, dehiscence, delayed recovery in the immediate post operative period and recurrent adhesive intestinal obstruction, incisional hernia and wound scar as long-term complications, even it can also lead to mortality due to septicemia and MODS. Hence, a planned decision should be made at right time by the operating surgeon to prevent complications. This study is aimed to identify the incidence, indications, type of primary surgery, risk factors and outcome of relaparotomies carried out in a tertiary care center at specified period to provide new insights & working guidelines regarding relaparotomy management to fellow surgeons.

**Approach:** This is a retrospective observational study conducted in department of general surgery during the period of one year from May 2021 to April 2022 by verifying the operative register, case sheets, inpatient register, death register & nominal register to collect data in a pre-validated format regarding laparotomies, indications and demographic features of patients along with details of re-laparotomies, type of primary surgery, day of re-intervention & mortality. Data were analyzed using microsoft excel and SPSS software to calculate results.

**Findings:** In this study of above chosen period, total number of laparotomies performed for general surgical indication were 275. Re-laparotomies performed within this institution in the above chosen period for patients at the same period of hospitalization for primary surgery were 14. Incidence of relaparotomy in this study was 5.09%. Gender wise, 13 male patients and 1 female patient underwent relaparotomy. Majority of them were in 61–70-year age group as observed in 6 out of 14 relaparotomies with median age affected was 59. Re-operations performed after 7 days were 8 out of 14 (56.8%). Mean time interval for relaparotomy in this study was  $7.71 \pm 3.13$  days. Major indication for relaparotomy was burst abdomen in 7 out of 14 patients (50%). Mortality rate for relaparotomy in this study was 28.5% as 4 out of 14 re-operated patients were expired and all 4 of them were re-operated after 4 days. Most common cause of mortality was septicemia (50%). **Conclusion:** Relaparotomy is a critical postoperative complication. Hence a carefully planned decision must be taken by the operated surgeon at right time to prevent any catastrophic event.

**Keywords:** Relaparotomy incidence, Redo Surgery, Outcome of laparotomies and re-laparotomies

### I Introduction

Relaparotomy is a potentially serious post operative event requiring urgent or planned re-intervention within 60 days of primary abdominal surgery due to its complication. Incidence of relaparotomy range from 0.5 to 15% in various studies. Mortality after relaparotomy ranges from 24 to 71%. Factors associated with high mortality are old age, peritonitis and sepsis at presentation for primary surgery and immuno-compromised patients. This retrospective study was aimed to study incidence and risk factors of relaparotomy in department of general surgery in Government Thiruvapur medical college during the period between May 2021 to April 2022.

***Aims and objectives:***

Primary objective of this study is to identify the incidence, indications, risk factors and outcome of relaparotomies.

Secondary objective of this study is to provide new insights and guidelines for management of relaparotomy to fellow surgeons to prevent complications arising out of this scenario in future.

**Materials and Methods**

This study was conducted in department of general surgery at Government Thiruvarur medical college taking data about details of laparotomies and relaparotomies. All patients irrespective of age and gender who underwent re-exploration of the abdomen within the same period of hospitalization for primary surgery were included in this study.

***Study design:*** Retrospective observational study

***Study location:*** Department of General Surgery at Government Thiruvarur Medical College, Thiruvarur, Tamilnadu India

***Study Period:*** May 2021 to April 2022

**Selection of study subjects:**

***Inclusion criteria for laparotomies:*** for study purpose, all general surgical procedures including emergency and elective carried out accessing peritoneum via midline were considered as laparotomies.

***Inclusion criteria for relaparotomies***– all general surgical procedures where abdomen is re-explored within the same period of hospitalization for primary surgery due to its complication, irrespective of age and gender of the patient were consider as relaparotomies.

***Exclusion criteria for laparotomies:*** following procedures were excluded

1. All laparoscopic procedures.
2. All elective and emergency procedures accessing peritoneum via lateral incision – appendectomy, Ileostomy/colostomy, psoas abscess drainage and inguinal hernia repair.
3. All patients of suspected or confirmed active covid disease.
4. All procedures for incisional hernia.
5. All obstetric / gynaecological procedures.

***Exclusion criteria for relaparotomies***

1. All obstetric and gynaec procedures – post LSCS, post hysterectomy re-explorations.
2. All relaparotomies performed where primary surgery which was conducted outside this institution.
3. All elective procedures for stoma closure

**Method of data collection:**

Operative register, inpatient register, case sheets and death register were verified to collect data regarding patients age, gender, preoperative diagnosis, operative finding, indication for relaparotomy and outcome in terms of morbidity and mortality in a prevalidated format.

***Study Procedure Methodology:***

After defining inclusion criteria and exclusion criteria for both laparotomies as well as re-laparotomies, socio-demographic, clinical, operative details and outcome for each selected patient who satisfied the defined selection criteria were collected using the above sources of hospital records in a format. Study protocol

submitted to Institutional ethics committee and approval obtained. Informed consent was taken from all patients. Then, proceeded with analyzing the data by which results were calculated.

**Statistical analysis:**

SPSS software and Microsoft excel were used to analyze data for above clinical information to calculate results in the form of incidence, frequency of age and gender distribution, mean time interval for re-laparotomy, mean duration of hospital stay, mortality and most common cause for mortality.

### III Results

After performing a detailed study of the collected data, following results were arrived.

Total number of laparotomies performed for the chosen period	- 275
Total number of re-laparotomies performed for this chosen period	- 14
Incidence of re-laparotomies in this study	- 5.09% (14 /275)
Gender distribution of relaparotomies	- 13 males and 1 female
Most common age group involved in re-laparotomies	-61 to70 years (6 /14 patients,42.8%)
Median age involved in relaparotomies in this study	- 59
Most of the re-laparotomies were performed after 7 days	- 56.8% (8 /14 patients)
Mean time interval for re-laparotomies	- 7.71± 3.13 days
Most common indication for re-laparotomy	- Burst abdomen (7/14 patients,50%)
Mortality rate for re-laparotomy in this study	- 28.5% (4 /14)
Most common cause of mortality after re-laparotomy	- Septicemia (2/ 4 re-operated,50%)
Mean duration of hospital stay for recovery after re-laparotomy	- 22.86±6.87 day

**Table 1: Month wise details of laparotomies and re-laparotomies**

Total relaparotomies	= 14
Total laparotomies	= Elective (42) + Emergency (233) +OG, Covid and Lap (6+7= 13) = 288
After exclusion	= 288-13 =275
Incidence	= 14/275 = 5.09%

Month	Elective Laparotomies	Emergency Laparotomies	Re-laparotomies	Laparotomies for covid disease	OG Laparotomies/ Laparoscopy
May 2021	0	6	0	1	0
June 2021	0	21	0	2	0
July 2021	2	18	0	1	0
Aug 2021	3	18	0	1	0
Sep 2021	4	21	2	1	0
Oct 2021	7	23	2	0	1
Nov 2021	6	25	2	0	1
Dec 2021	7	31	3	0	2 OG and 1 Lap
Jan 2022	3	20	3	0	0
Feb 2022	3	21	0	0	2
Mar 2022	5	15	1	0	0
Apr 2022	2	14	1	0	0
May 2021 - Apr 2022	42	233	14	6	7

**Table 2: List of demographics, clinical and operative details of laparotomies and relaparotomies**

S.no	Age/ sex	Admitted date	Ip no	Diagnosis	Procedure	Emergency/elective
1.	60 M	2/5/21	2117325	Intestinal obstruction	Ileosigmoid knotting-Resection anastomosis double barrel ileostomy	Emergency
2.	58 M	3/5/21	2117770	Intestinal obstruction	Laparotomy -Adhesive band release (Covid)	Emergency
3.	62 M	10/5/21	2119473	Gastric Perforation	Laparotomy -Primary closure	Emergency
4.	42 M	12/5/21	2120030	Fall from height	Perineal &rectal tear -laparotomy, primary repair diversion colostomy	Emergency
5.	65M	24/5/21	2122443	Gastric Perforation	Laparotomy-primary closure	Emergency
6.	72F	30/521	2123815	Intestinal obstruction	Laparotomy- Ileal band adhesion- adhesiolysis	Emergency
7.	52M	31/5/21	2123947	Acute Appendicitis	Meckels diverticulum-Ileal loop obstruction-Appendectomy -resection anastomosis	Emergency
8.	75F	7/6/21	2125089	Ventral hernia obstructed	Ileal perforation-resection ileotransverse anastomosis	Emergency

9.	35 M	11/6/21	212518 2	Blunt injury abdomen	Ileal perforation-primary closure	Emergency
10.	30M	11/6/21	212564 9	Stab abdomen	Multiple ileal perforation- laparotomy, resection double barrel ileostomy	Emergency
11.	25M	11/6/21	212570 3	Stab abdomen	Laparotomy-mesenteric tear repair	Emergency
12.	54 M	12/6/21	212574 1	RTA Blunt injury abdomen	Ileal Perforation- laparotomy primary closure	Emergency
13.	65 F	12/6/21	212572 5	Gangrenous cholecystitis	Laparotomy-cholecystectomy corads4RTPCR Negative	Emergency
14.	25M	13/6/21	212577 2	Stab abdomen	Bowel eviscerisation- laparotomy lavage	Emergency
15.	60F	15/6/21	212621 3	Gangrenous cholecystitis	Laparotomy-subtotal cholecystectomy	Emergency
16.	40M	16/6/21	212624 8	CA Rectum Obstructed	Laparotomy- diversion transverse loop colostomy	Emergency
17.	28M	17/6/21	212634 9	RTA Diaphragmatic hernia	Laparotomy-mesh repair B/L ICD	Emergency
18.	40M	18/6/21	212653 9	Blunt injury abdomen	Laparotomy-omental tear repair	Emergency
19.	35M	18/6/21	212657 0	Appendicular perforation	Laparotomy-appendectomy	Emergency
20.	50M	19/6/21	212662 8	Blunt injury abdomen	Gr3 liver injury-laparotomy lavage	Emergency
21.	65M	20/6/21	212675 6	Gastric Perforation	Laparotomy- Graham patch closure	Emergency
22.	48M	22/6/21	212709 3	Duodenal perforation	Laparotomy-Graham patch	Emergency
23.	38M	22/6/21	212707 4	Stab abdomen	Liver laceration-laparotomy primary suturing	Emergency
24.	16M	23/6/21	212712 5	Blunt injury abdomen	Meckels diverticulum ileal gangrene- laparotomy resection anastomosis Corads 2	Emergency
25.	34M	24/6/21	212723 8	SBO-Closed loop	Meckels diverticulum-ileal gangrene resection anastomosis	Emergency
26.	60M	24/6/21	212733 4	Ileal perforation	Laparotomy-primary closure	Emergency
27.	50M	27/6/21	212740 0	Ruptured liver abscess	Laparotomy-peritoneal lavage	Emergency
28.	60M	29/6/21	212748 8	Gastric Perforation	Laparotomy-primary closure	Emergency
29.	45M	29/6/21	212702 7	CA Stomach Advanced	Laparotomy- feeding jejunostomy	Emergency
30.	13M	30/6/21	212815 2	Bull gore injury Abdomen	Eviscerisation-laparotomy retrieval and closure	Emergency
31.	60M	2/7/21	212837	Ruptured liver	Laparotomy-lavage	Emergency

			1	abscess		y
32.	60M	2/7/21	212838 3	Ruptured liver abscess	Laparotomy-lavage	Emergency
33.	42M	7/7/21	212904 6	Blunt injury abdomen	Mesenteric injury-laparotomy ligation of ileocecal artery	Emergency
34.	50M	8/721	212913 1	Acute cholecystitis	Cholelithiasis-open cholecystectomy	Emergency
35.	35M	9/7/21	212933 0	Stab abdomen	Ileal perforation-laparotomy Primary closure	Emergency
36.	42M	10/7/21	212948 3	Stab abdomen	Ileal perforation-laparotomy Primary closure	Emergency
37.	47M	10/7/21	212953 4	Stab abdomen	Mesenteric injury-laparotomy repair	Emergency
38.	70M	10/721	212946 4	Intestinal obstruction	Laparotomy- adhesive band release- Appendectomy	Emergency
39.	65M	11/721	212945 3	Carectum obstructed	Laparotomy -Hartmann procedure	Emergency
40.	40M	12/7/21	212978 1	Gastric Perforation	Laparotomy-prepyloric perforation closure	Emergency
41.	40M	14/7/21	212870 0	Stab abdomen	Laparotomy-gastric perforation primary closure	Emergency
42.	40M	15/7/21	213014 2	Post roux enY JJ leak	Laparotomy primary closure	Emergency
43.	54M	20/7/21	213083 0	Stab abdomen	Laparotomy-gastric perforation primary closure	Emergency
44.	60M	21/7/21	213212 3	Ascending colon malignancy	Laparotomy-Rt hemicolectomy ileotransverse anastomosis	Emergency
45.	65M	21/7/21	213432 1	Gastric Perforation	Laparotomy-primary closure	Emergency
46.	40M	23/7/21	212945 2	CA stomach	Subtotal gastrectomy	<b>Elective</b>
47.	40M	22/7/21	213101 7	Duodenal perforation	Laparotomy-primary closure	Emergency
48.	60F	23/7/21	213041 6	Retroperitoneal mass	Exploratory laparotomy biopsy Covid	Emergency
49.	50M	30/7/21	212889 5	CA stomach	Subtotal gastrectomy	<b>Elective</b>
50.	56M	29/7/21	213171 0	Intestinal obstruction	Laparotomy-cecal band release	Emergency
51.	68M	31/7/21	213219 4	Duodenal perforation	Laparotomy-primary closure	Emergency
52.	35M	2/8/21	213252 1	Blunt injury abdomen	Laparotomy-jejunal perforation Primary closure	Emergency
53.	62M	3/8/21	213280 3	Duodenal perforation	Laparotomy-primary closure	Emergency
54.	17M	4/8/21	213293	Duodenal	Laparotomy-primary closure	Emergency

			0	perforation		y
55.	65M	5/8/21	213306 2	Gastric Perforation	Laparotomy-primary closure	Emergency
56.	17M	5/8/21	213304 1	Appendicular perforation	Laparotomy-appendectomy	Emergency
57.	55M	6/8/21	210099 4	SAIO-Adeno CA Jejunum	Laparotomy-feeding jejunostomy	Emergency
58.	32M	6/8/21	213316 3	Duodenal perforation	Laparotomy-primary closure	Emergency
59.	14M	7/8/21	213348 2	Appendicular perforation	Laparotomy-primary closure	Emergency
60.	42M	8/8/21	213347 9	SBO	Laparotomy-jejunal gangrene Resection anastomosis	Emergency
61.	30M	8/8/21	213363 0	Duodenal perforation	Laparotomy-primary closure	Emergency
62.	35M	14/8/21	213447 4	Gastric Perforation	Laparotomy-pyloric perforation primary closure	Emergency
63.	38F	14/8/21	213335 7	Ascending colon growth obstruction	Laparotomy-Rt hemicolectomy ileotransverse anastomosis	Emergency
64.	33M	14/8/21	213344 7	Stab abdomen	Laparotomy-Transverse colon perforation primary closure	Emergency
65.	55F	16/8/21	213287 0	CA Stomach	Laparotomy- gastrectomy GJ	<b>Elective</b>
66.	60F	16/8/21	213212 2	Cholecystitis	Laparotomy-cholecystectomy CBD Exploration	<b>Elective</b>
67.	27M	16/8/21	213487 3	Duodenal perforation	Laparotomy-primary closure	Emergency
68.	35M	18/8/21	213515 9	Blunt injury abdomen	Laparotomy-mesenteric tear repair	Emergency
69.	45M	19/8/21	213514 7	SBO Malrotation	Laparotomy-ileal resection anastomosis loop ileostomy	Emergency
70.	21M	23/8/21	213301 7	Post ileostomy	Laparotomy- ileostomy closure	<b>Elective</b>
71.	53M	27/8/21	213613 1	Small bowel gangrene	Laparotomy-SMA occlusion Segmental resection double barrel ostomy (COVID)	Emergency
72.	64F	29/8/21	213667 1	Rectosigmoid perforation	Laparotomy-Hartmann procedure	Emergency
73.	40F	30/8/21	213883 6	Ruptured liver abscess	Laparotomy- lavage & drainage	Emergency
74.	70F	2/9/21	213474 0	Incisional hernia CBD stone	Cholecystectomy-CBD Exploration Mesh repair	<b>Elective</b>
75.	55M	2/9/21	213711 5	Duodenal perforation	Laparotomy-primary closure	Emergency
76.	20M	2/9/21	213721 6	Gastric Perforation	Laparotomy-primary closure	Emergency

77.	65M	3/9/21	213514 4	CA Stomach	AGJ FJ	<b>Elective</b>
78.	40F	2/9/21	213610 0	Ileal band obstruction	Laparotomy- band release	Emergency
79.	64M	3/9/21	213649 2	LBO	Laparotomy-band release	Emergency
80.	50 F	4/9/21	213721 1	SBO	Laparotomy-appendicular & ileal perforation- appendectomy, resection end ileostomy	Emergency
81.	70M	4/9/21	213769 6	Gastric Perforation	Laparotomy-primary closure	Emergency
82.	20M	6/9/21	213773 9	Duodenal perforation	Laparotomy- primary closure	Emergency
83.	19M	8/9/21	213833 8	Ileal perforation	Laparotomy-resection anastomosis	Emergency
84.	60M	9/9/21	213841 0	Gastric Perforation	Laparotomy-primary closure COVID	Emergency
85.	49F	13/9/21	213601 6	Choledocholithiasis	Cholecystectomy-CBD Exploration	<b>Elective</b>
86.	14M	11/9/21	213376 6	Blunt injury abdomen	Laparotomy-bladder& urethral injury Open SPC	Emergency
87.	56M	12/9/21	213377 9	GB Perforation Incisional hernia	Laparotomy-subtotal cholecystectomy adhesiolysis mesh repair	Emergency
88.	56M	12/9/21	213744 2	Rectosigmoid obstruction	Laparotomy- resection and Colostomy	Emergency
89.	20M	13/9/21	213748 2	Stab abdomen	Transverse colon & jejunal perf - resection anastomosis and jejunal closure	Emergency
90.	60M	15/9/21	213749 6	CA Stomach	Laparotomy- Gastrectomy GJ	<b>Elective</b>
91.	74M	16/9/21	213766 7	LBO - Transverse Colon	Laparotomy - resection Anastomosis	Emergency
92.	72M	20/9/21	213928 1	CA Stomach	Laparotomy - Gastrectomy	<b>Elective</b>
93.	19M	20/9/21	213833 8	Burst Abdomen	Post Laparotomy for ileal perforation - <b>relaparotomy</b>	Emergency
94.	18M	21/9/21	214051 7	Duodenal perforation	Laparotomy - primary closure	Emergency
95.	47M	25/9/21	214130 4	Gastric Perforation	Laparotomy - primary closure	Emergency
96.	65M	26/9/21	214132 5	Ruptured liver abscess	Laparotomy - lavage drainage	Emergency
97.	22M	26/9/21	214146 6	Duodenal perforation	Laparotomy - primary closure	Emergency
98.	45M	27/9/21	214165 6	Duodenal perforation	Laparotomy - primary closure	Emergency
99.	32F	30/9/21	214121 3	Post op bile leak	<b>Relaparotomy</b> for ileal perforation- tube ileostomy	Emergency



100	60 M	1/10/21	214225 6	CA Stomach Perforated	Laparotomy-biopsy omental patch closure	Emergency
101		2/10/21	214255 3	Blunt injury abdomen	Splenic injury gr4-laparotomy Splenectomy	Emergency
102	85M	4/10/21	214262 3	Ascending Colon growth	Rt hemicolectomy ileotransverse anastomosis	Emergency
103	80M	8/10/21	107431 5	Sigmoid colon growth	Left hemicolectomy	<b>Elective</b>
104	60M	8/10/21	214225 6	CA Stomach operated	Burst abdomen <b>relaparotomy</b> -mass closure	Emergency
105	64M	11/10/21	214208 2	CA Ascending Colon	Right hemicolectomy	<b>Elective</b>
106	27M	11/10/21	214396 0	Duodenal perforation	Laparotomy-primary closure	Emergency
107	46M	13/10/21	214421 5	Duodenal perforation	Laparotomy-Primary closure	Emergency
108	39F	14/10/21	214441 9	Ruptured left pyosalphinx	Laparotomy-Lt partial salphingectomy appendectomy OG	Emergency
109	72M	15/10/21	212253 4	Blunt injury abdomen	Laparotomy-mesenteric tear Ligation and lavage	Emergency
110	75M	16/10/21	214468 0	Hepatic flexure obstruction	Rt hemicolectomy ileotransverse anastomosis	Emergency
111	47M	16/10/21	214443 3	Obstructed umbilical hernia	Laparotomy-ileal gangrene Resection anastomosis -anatomical repair	Emergency
112	70F	18/10/21	214414 6	Rectosigmoid growth	Laparotomy-resection anastomosis	<b>Elective</b>
113	68F	18/10/21	214242 7	Cholelithiasis CBD Stone	Cholecystectomy CBDE	<b>Elective</b>
114	48F	18/10/21	214256 1	Obstructed Incisional hernia	Laparotomy-ileal gangrene Resection anastomosis	Emergency
115	50M	22/10/21	214333 3	CA Stomach	Gastreotomy-GJ	<b>Elective</b>
116	65M	25/10/21	214627 2	Gastric Perforation	Laparotomy-primary closure	Emergency
117	48M	27/10/21	214612 0	GOO	Gastreotomy-GJ	<b>Elective</b>
118	40F	26/10/21	214456 8	Duodenal perforation	Laparotomy-primary closure	Emergency
119	70F	28/10/21	214357 1	Cholelithiasis CBD Stone	CBDE	<b>Elective</b>
120	50M	27/10/21	214653 2	Duodenal perforation	Laparotomy-primary closure	Emergency
121	70M	27/10/21	214639 7	Liver abscess rupture	Laparotomy-lavage	Emergency
122	65M	27/10/21	214645 8	Gastric Perforation	Laparotomy-primary closure	Emergency

123	24F	28/10/2	214652	Appendicular perforation	Laparotomy-appendectomy	Emergency
124	65F	28/10/2	214653	Gastric Perforation	Laparotomy-primary closure	Emergency
125	48M	28/10/2	214663	Gastric Perforation	Laparotomy-primary closure	Emergency
126	65M	29/10/2	214627	Burst Abdomen	<b>Relaparotomy</b> -mass closure	Emergency
127	39M	30/10/2	214696	Duodenal perforation	Laparotomy-primary closure	Emergency
128	56M	30/10/2	214705	Duodenal perforation	Laparotomy-primary closure	Emergency
129	30M	30/10/2	214410	Recurrent Incisional hernia	Laparotomy-anatomical repair	Emergency
130	60M	31/10/2	214716	Posterior gastric Perforation	Laparotomy-primary closure	Emergency
131	29M	1/11/21	214717	Penetration injury Abd	Transverse mesocolon injury-laparotomy resection anastomosis- tube ileostomy	Emergency
132	29M	1/11/21	214722	Duodenal perforation	Laparotomy-primary closure	Emergency
133	55M	3/11/21	214726	Intussusception	Laparotomy-resection anastomosis	<b>Elective</b>
134	50F	2/11/21	214733	Pericolic Abscess	Laparotomy drainage	Emergency
135	50F	5/11/21	214788	Obstructed Incisional hernia	Ileal gangrene -resection anastomosis	Emergency
136	22M	3/11/21	214749	RTA Blunt injury abdomen	Gastric, splenic, colonic & small bowel tear-splenectomy primary closure	Emergency
137	22M	3/11/21	214970	RTA Blunt injury abdomen	Splenic, colonic, small bowel injury-splenectomy primary closure	Emergency
138	47M	4/11/21	214862	Sigmoid diverticulitis	Laparotomy-abscess drainage loop ileostomy	Emergency
139	40M	7/11/21	214862	Gastric Perforation	Laparotomy-Graham patch	Emergency
140	56M	7/11/21	214972	Duodenal perforation	Laparotomy-primary closure	Emergency
141	48M	10/11/2	214863	Duodenal perforation	Laparotomy-primary closure	Emergency
142	45M	11/11/2	214973	Gastric Perforation	Laparotomy-primary closure	Emergency
143	57M	12/11/2	214864	Splenic abscess	Splenectomy	Emergency
144	40M	14/11/2	214943	Appendicular perforation	Laparotomy-primary closure	Emergency
145	65F	14/11/2	214914	Obstructed Incisional hernia	Laparotomy-adhesiolysis, bowel repair anatomical repair	Emergency

146	22M	16/11/21	214970	Postop burst Abd	<b>Relaparotomy</b> -mass closure	Emergency
147	60M	18/11/21	215021	Hepatic flexure obstruction	Laparotomy-Rt hemicolectomy ileotransverse anastomosis	Emergency
148	65M	20/11/21	215040	LBO-Splenic flexure	Laparotomy-Omental band release, resection anastomosis	Emergency
149	46M	23/11/21	214905	CA Stomach	Distal gastrectomy-D2 lymphadenectomy	<b>Elective</b>
150	58M	24/11/21	214823	Duodenal growth GOO	Laparotomy- GJ	<b>Elective</b>
151	30M	23/11/21	215046	Postop feculent leak	<b>Relaparotomy</b> -Ascending colon leak-right hemicolectomy ileotransverse anastomosis	Emergency
152	73M	23/11/21	215007	Gastric Perforation	Laparotomy-primary closure	Emergency
153	35M	25/11/21	214942	GOO	TVGJ	<b>Elective</b>
154	64F	24/11/21	215113	Mesenteric ischemia	Small bowel& colonic gangrene-resection end jejunostomy	Emergency
155	22M	24/11/21	215103	Gastric Perforation	Laparotomy-primary closure	Emergency
156	80F	24/11/21	215101	Sealed duodenal Perforation	Laparotomy-primary closure	Emergency
157	50M	25/11/21	215148	RTA blunt abdomen	Laparotomy-jejunal tear primary closure	Emergency
158	60M	27/11/21	215159	Hemorrhagic Pancreatitis	Laparotomy-lavage	Emergency
159	48M	29/11/21	214853	CA Stomach	Gastrectomy-GJ	<b>Elective</b>
160	45M	29/11/21	214861	GOO	Laparotomy-GJ	<b>Elective</b>
161	35M	28/11/21	215175	Traumatic Gastric Perforation	Laparotomy-primary closure	Emergency
162	30F	29/11/21	215179	Ruptured ovarian Pregnancy	Laparotomy- Right salphingectomy on table OG call	Emergency
163	30M	1/12/21	215235	Penetration injury Abdomen	Splenic injury, jejunal, descending colon tear-splenectomy, jejunal repair &resection anastomosis	Emergency
164	39F	1/12/21	215237	Acute Intestinal obstruct	Laparotomy-band release	Emergency
165	70M	2/12/21	215239	Right Inguinal hernia obstructed	Laparotomy	Emergency
166	40M	3/12/21	215623	Sigmoid Perforation abscess	Laparotomy-primary closure loop ileostomy	Emergency
167	60M	3/12/21	215261	Blunt injury abdomen	Multiple ileal perforation-resection anastomosis	Emergency
168	50M	3/12/21	215216	Litters hernia	Gangrenous perforation ileum-resection	Emergency

			1		anastomosis	y
169	39M	4/12/21	215281 4	Stab abdomen	Eviscerisation-laparotomy resection anastomosis of Jejunum	Emergency
170	32F	4/12/21	215060 7	P3L3 Hemoperitoneum	Laparotomy-hysterectomy OG	Emergency
171	50M	6/12/21	215271 2	Periampullary growth	Whipples procedure	<b>Elective</b>
172	25M	5/12/21	215273 0	Splenic abscess	Cacoon abdomen-Splenectomy, adhesiolysis, tube jejunostomy	Emergency
173	65M	6/12/21	215279 1	Duodenal perforation	Laparotomy-primary closure	Emergency
174	55F	8/12/21	215129 8	CA Stomach	Gastrectomy-GJ	<b>Elective</b>
175	55M	7/12/21	215280 6	Sealed Perforation	Laparotomy-perforation at hepatic flexure-diversion loop ileostomy	Emergency
176	36M	7/12/21	215327 4	Stab abdomen	Laparotomy-muscle tear, hemoperitoneum primary suturing	Emergency
177	30F	9/12/21	215338 2	Irreducible umbilical Hernia	Laparotomy-mesh repair	Emergency
178	65M	9/12/21	215431 0	Umbilical hernia-postop intestinal obstruction	<b>Relaparotomy</b> -adhesiolysis preperitoneal mesh repair	Emergency
179	75M	13/12/21	215432 4	CA Stomach	Laparotomy-Gastrectomy GJ	<b>Elective</b>
180	57F	13/12/21	215435 3	Calculus Cholecystitis	Cholecystectomy-	Emergency
181	34M	13/12/21	215432 1	Duodenal perforation	Laparotomy-primary closure	Emergency
182	46M	13/12/21	215433 0	Gastric Perforation	Laparotomy-primary closure	Emergency
183	32F	13/12/21	215434 2	Post hysterectomy	Burst Abd- <b>relaparotomy</b> mass closure OG	Emergency
184	75F	15/12/21	215125 4	CA Anal canal	APR	<b>Elective</b>
185	26M	14/12/21	215437 3	Stab abdomen	Omental Prolapse Jejeunal Perforation -primary closure	Emergency
186	55M	14/12/21	214437 6	Impacted Vesical calculus	Trial SPC- Open cystolithotomy	Emergency
187	56M	16/12/21	215143 2	Rectosigmoid growth	LAR	<b>Elective</b>
188	68M	16/12/21	215248 5	Gastric Perforation	Laparotomy-primary closure	Emergency
189	40M	16/12/21	215231 7	Blunt injury abdomen	Laparotomy-liver laceration lavage	Emergency
190	30M	17/12/21	215235 5	Burst Abdomen	Anastomotic leak-relaparotomy diversion loop ileostomy mass closure	Emergency

191	71M	20/12/21	2155254	Obstructed Lumbar hernia Rt	Laparotomy-band release -mesh repair	Emergency
192	64M	22/12/21	2154113	CA Stomach	Gastrectomy-GJ	<b>Elective</b>
193	25M	23/12/21	2155756	Stab abdomen	Ileal Perforation- laparotomy & ileostomy	Emergency
194	34F	23/12/21	2155600	Stab abdomen	Diagnostic Laparoscopy Exclusion	Emergency
195	60M	23/12/21	2155734	Sigmoid Volvulus	Hartmann Procedure HBS Ag +	Emergency
196	52M	24/12/21	2155884	Gastric Perforation	Laparotomy-primary closure	Emergency
197	23F	25/12/21	2156037	Ileal perforation	Laparotomy-primary closure	Emergency
198	63M	26/12/21	2154963	Cecal perforation post appendectomy-fecal fistula	<b>Relaparotomy-</b> resection of IC junction ileotransverse anastomosis tube ileostomy	Emergency
199	45M	27/12/21	2155022	Gastric Perforation	Laparotomy-primary closure	Emergency
200	43M	29/12/21	2156253	GOO	TVGJ	<b>Elective</b>
201	23M	28/12/21	2156408	Appendicitis Peritonitis	Laparotomy-appendectomy	Emergency
202	29M	29/12/21	2156339	Gastric Perforation	Laparotomy-primary closure	Emergency
203	52F	31/12/21	2156471	Ruptured liver abscess	Laparotomy-abscess drainage	Emergency
204	70F	3/1/22	2156404	Rectal Prolapse	Rectopexy	<b>Elective</b>
205	55M	5/1/22	2200557	Duodenal perforation	Laparotomy-primary Closure	Emergency
206	55F	7/1/22	2156138	Hepatic flexure obstruction	Rt hemicolectomy	<b>Elective</b>
207	29M	7/1/22	2156606	Postop burst Abdomen	<b>Relaparotomy</b> mass closure	Emergency
208	65M	8/1/22	2201156	Rt Inguinal hernia	Limited resection colostomy& Rt orchidectomy	Emergency
209	49M	9/1/22	2201241	Appendicular perforation	Laparotomy-appendectomy	Emergency
210	11M C	12/1/22	2201542	Blunt injury abdomen	Laparotomy-terminal ileal mesenteric tear-primary closure	Emergency
211	50M	12/1/22	2201717	Duodenal perforation	Laparotomy-primary closure	Emergency
212	45M	13/1/22	2201820	Duodenal perforation	Laparotomy-primary closure	Emergency
213	65F	13/1/22	220183	LBO- Splenic	Laparotomy-resection Anastomosis	Emergency

			6	flexure		y
214	21M	13/1/22	220192 1	Blunt injury abdomen	Grade 4 Splenic injury- splenectomy	Emergency
215	28F	14/1/22	220193 2	Duodenal perforation	Laparotomy-primary closure	Emergency
216	18M	15/1/22	220197 8	Intestinal obstruction	Laparotomy-interloop adhesion band release	Emergency
217	55F	16/1/22	220221 0	Ventral hernia obstructed	Laparotomy-omental gangrene- omentectomy mesh repair	Emergency
218	70M	16/1/22	220221 1	Gastric Perforation	Laparotomy-primary closure	Emergency
219	55M	16/1/22	220055 7	Adhesive Intestine obstruction	<b>Relaparotomy</b> -adhesiolysis Loop ileostomy	Emergency
220	85 M	17/1/22	220236 5	Mesenteric ischemia	Small bowel gangrene-resection anastomosis tube Jejunostomy	Emergency
221	65M	18/1/22	220115 6	Post Op wound dehiscence	<b>Relaparotomy</b> -ostomy revision -mass closure	Emergency
222	60F	18/1/22	220258 5	Obstructed incisional hernia	Mesh repair	Emergency
223	31F	20/1/22	226241 9	Abdominal wall defect	Abdominoplasty	<b>Elective</b>
224	54M	19/1/22	220243 1	Ruptured liver abscess	Laparotomy-Abscess Drainage	Emergency
225	60M	25/1/22	220362 2	Duodenal perforation	Laparotomy-Primary closure	Emergency
226	60M	26/1/22	220366 5	GB Perforation	Cholecystectomy, sigmoid gangrene-colostomy	Emergency
227	60M	1/2/22	220161 0	Acute Recurrent SBO	laparotomy-band release	Emergency
228	33F	3/2/22	220235 7	GOO	Laparotomy-GJ	<b>Elective</b>
229	42M	2/2/22	220487 8	Fall-Blunt abdomen	Jejunal, colonic perforation primary closure	Emergency
230	50M	4/2/22	220503 8	Duodenal perforation	Laparotomy primary closure	Emergency
231	60F	4/2/22	220512 9	Gastric Perforation	Laparotomy primary closure	Emergency
232	30M	4/2/22	220511 6	Gastric Perforation	Laparotomy primary closure	Emergency
233	71F	7/2/22	220524 6	Compound volvulus	Small bowel& sigmoid gangrene-end ileostomy	Emergency
234	55M	9/2/22	220555 1	GOO	Laparotomy-GJ	<b>Elective</b>
235	38M	9/2/22	220582 5	Duodenal perforation	Laparotomy-primary closure	Emergency
236	45F	11/2/22	220539	Mesenteric ischemia	Laparotomy-resection anastomosis- proximal	Emergency

			5		loop ileostomy	y
237	40M	13/2/22	220570	Posterior Gastric Perforation	Laparotomy-liver abscess drainage- primary closure lavage	Emergency
238	42M	13/2/22	220583	Gastric Perforation	Laparotomy- primary closure	Emergency
239	35M	16/2/22	220610	RTA Blunt injury abdomen	Splenic injury gr4-laparotomy, splenectomy	Emergency
240	80M	17/2/22	220624	Gastric Perforation	Laparotomy-primary closure	Emergency
241	42M	17/2/22	220634	Gastric Perforation	Laparotomy-primary closure	Emergency
242	55M	19/2/22	220669	Giant Gastric Perforation	Laparotomy-primary closure, palliative AGJ	Emergency
243	55M	21/2/22	220609	Splenic abscess	Splenectomy	Emergency
244	18M	22/2/22	220810	Gastric Perforation	Laparotomy-primary closure	Emergency
245	45M	24/2/22	220820	Duodenal Perforation	Laparotomy-primary closure	Emergency
246	40M	24/2/22	220782	Duodenal Perforation	Laparotomy-primary closure	Emergency
247	47F	24/2/22	220777	Stab abdomen	Omental contusion - lavage	Emergency
248	56M	26/2/22	220774	Ruptured liver abscess	Splenic, liver abscess -splenectomy, lavage	Emergency
249	53M	26/2/22	220765	Blunt injury abdomen	Bladder injury- Open SPC	Emergency
250	31F	26/2/22	220565	Post LSCS abdominal abscess	Lavage - jejunal injury,primary closure OG	Emergency
251	29F	26/2/22	220746	LSCS Bladder injury	SPC OG	Emergency
252	46M	28/2/22	220756	Cholelithiasis CBD Stone	Open cholecystectomy- CBDE	<b>Elective</b>
253	51M	2/3/22	220493	GOO	TVGJ	<b>Elective</b>
254	55M	1/3/22	220803	Blunt injury abdomen	Laparotomy-mesenteric tear Repair	Emergency
255	65M	3/3/22	220834	Gastric Perforation	Laparotomy-primary closure	Emergency
256	60M	9/3/22	220759	CA Stomach	Gastrectomy-GJ	<b>Elective</b>
257	45F	9/3/22	220902	Acute cholecystitis CBD calculus	Open cholecystectomy- CBDE	Emergency
258	68M	11/3/22	220763	Duodenal perforation	Laparotomy-primary Closure	Emergency
259	70M	11/3/22	220793	Acute Int	Anal canal growth-transverse loop colostomy	Emergency

			6	obstruction		y
260	38F	11/3/22	220769 7	SBO	ileojejunal gangrene-resection anastomosis	Emergency
261	45M	13/3/22	220782 3	Choledochal Cyst	CBD Stricture -Whipple procedure	<b>Elective</b>
262	48M	14/3/22	221010 8	Duodenal perforation	Laparotomy-primary closure	Emergency
263	52M	14/3/22	223245 6	Gastric Perforation	Laparotomy-primary closure	Emergency
264	52M	14/3/22	221025 2	Gastric Perforation	Laparotomy-primary closure	Emergency
265	65M	15/3/22	221027 9	Gastric Perforation	Laparotomy-primary closure	Emergency
266	26M	16/3/22	221096 8	Duodenal perforation	Laparotomy-primary closure	Emergency
267	70M	19/3/22	225793 6	Post OP Burst Abd	<b>Relaparotomy</b> -mass closure	Emergency
268	45M	26/3/22	221203 7	Blunt injury abdomen	Pyloroduodenal perforation closure	Emergency
269	52M	26/3/22	221204 0	Obstructed Incisional hernia	Distal jejunal gangrene, omental necrosis-Resection anastomosis	Emergency
270	65M	28/3/22	220875 0	CA Stomach	Gastrectomy-GJ	<b>Elective</b>
271	50M	27/3/22	220932 8	Duodenal perforation	Laparotomy-primary closure	Emergency
272	60M	30/3/22	221268 7	Duodenal perforation	Laparotomy-primary closure	Emergency
273	42M	3/4/22	221327 0	Blunt injury abdomen	Splenic injury-splenectomy	Emergency
274	60F	3/4/22	221352 8	Gastric Perforation	Laparotomy-primary closure	Emergency
275	65F	7/4/22	221390 0	Acute Int obstruction	Laparotomy-Meckels-resection& anastomosis	Emergency
276	66F	6/4/22	221204 9	Splenic abscess	Splenectomy	Emergency
277	65M	10/4/22	221459 5	CA Sigmoid Ascending colon Perforation	Sigmoidectomy colorectal anastomosis, primary closure of perforation, loop ileostomy	Emergency
278	27M	13/4/22	221216 0	Pseudocyst Pancreas	Cystogastrostomy	<b>Elective</b>
279	23M	12/4/22	221474 2	RTA Blunt injury abdomen	Splenic injury-splenectomy	Emergency
280	61M	13/4/22	221374 1	Trans colon CA Liver Mets	Laparotomy-ileotransverse anastomosis	Emergency
281	29M	18/4/22	221861 3	Gastric Perforation	Laparotomy-primary closure	Emergency



282	65F	20/4/22	221593 7	Assault Splenic injury	Splenectomy	Emergency
283	54M	21/4/22	221599 7	SBO Ileal stricture	End ileostomy	Emergency
284	54M	25/4/22	221599 7	Relaparotomy	Ileostomy revision ( <b>Relaparotomy</b> )	Emergency
285	65M	25/4/22	221657 2	Duodenal Perforation	Laparotomy-primary closure	Emergency
286	55F	26/4/22	221679 9	Desc colon Obstruction	Left hemicolectomy	Emergency
287	65M	29/4/22	221265 6	CA Stomach	Gastrectomy GJ	<b>Elective</b>
288	28M	30/4/22	221754 5	Ileal perforation	FB impaction retrieval & primary closure	Emergency

**Table 3: Age distribution of relaparotomies**

S.no	Age	Number of patients	Percentage
1	10-20	1	7.2%
2	21-30	3	21.4%
3	31-40	1	7.2%
4	41-50	0	0%
5	51-60	3	21.4%
6	61-70	6	42.8%
	Total	14	100%

**Table 4: Time of re-intervention**

S.no	Time of re-laparotomy	Number of patients	Percentage
1	Less than 3 days	2	14.2%
2	3 to 7 days	4	28.4%
3	8 to 11 days	8	56.8%
	Total	14	100%

Majority of patients were re-intervened after 7 days  
Mean time interval for re-laparotomy =  $7.71 \pm 3.13$  days

**Table 5: Gender distribution of relaparotomies**

S.no	Gender	Number of patients	Percentage
1	Male	13	92.8%
2	Female	1	7.2%
	Total	14	100%

**Table 6: Distribution of relaparotomies as per scenario of primary surgery**

S.no	Type of Primary surgery	Number of relaparotomies	Percentage
1	Emergency	12	95.8%
2	Elective	2	14.2%
	Total	14	100%

**Table 7: Distribution of relaparotomies as per indications**

S.no	Indication	Number of patients	Percentage
1	Burst abdomen	7	50%
2	Peritonitis	4	28.57%
3	Adhesive obstruction	2	14.29%
4	Ostomy revision	1	7.14%
	Total	14	100%

**Table 8: Outcome details of patients after re-laparotomy**

Outcome of relaparotomies	Number of patients
Recoveries after relaparotomies	10
Deaths after relaparotomies	4
Total	14

**Table 9: Mortality details after relaparotomy**

S.no	IP no	Age/ gender	Diagnosis	D.O. S	Redo date	Relaparotomy	Cause of death	Expired date
1	2152359	30 M	Stab abdomen-splenectomy	1/12/21	17/12/21	Loop ileostomy for colon anastamotic leak	ARDS& pleural effusion	24/12/21
2	2154963	63 M	Perforated appendix-laparotomy	19/12/21	26/12/21	Limited resection anastomosis for caecal leak	Multi organ failure	1/1/22
3	2201156	65 M	Scrotal abdomen with strangulation	9/1/22	18/1/22	Burst abdomen- mass closure &ostomy revision	Sepsis	29/1/22
4	2215997	54 M	Ileal stricture- end ileostomy	21/4/22	25/4/22	Ostomy revision for congestion	Sepsis &AKI	1/5/22

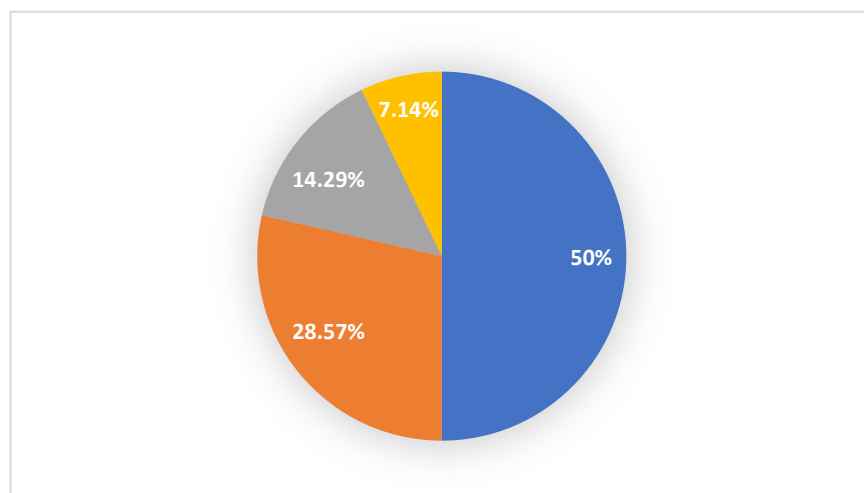
Out of 14 relaparotomies, 10 patients survived and 4 patients were expired. All 4 patients who expired underwent primary surgery under emergency setting. Maximum deaths were observed in relaparotomy for leak at anastamotic or perforation closure site.

**Table 10: Clinical details of relaparotomies**

S. no	Ip no	Age/ gender	Diagnosis	D.O. S	Redo date	Indication	Outcome	Discharged date	Expired date
1	2138338	19 M	Ileal perforation-laparotomy	8/9/21	19/9/21 11 <sup>th</sup> pod	Burst abdomen	Recovered	25/9/21 (17 days)	
2	2141213	32 F	Elective cholecystectomy	27/9/21	30/9/21 3 <sup>rd</sup> pod	Ileal bile leak	Recovered	14/10/21 (17 days)	
3	2142256	60 M	Gastric perforation-laparotomy	1/10/21	9/10/21 8 <sup>th</sup> pod	Burst abdomen	Recovered	15/10/21 (14 days)	
4	2146272	65 M	Gastric perforation-laparotomy	26/10/21	29/10/21 1 3 <sup>rd</sup> pod	Burst abdomen	Recovered	05/11/21 (10 days)	
5	2149701	22 M	Splenectomy for trauma	4/11/21	16/11/21 1 12 <sup>th</sup> pod	Burst abdomen	Recovered	29/11/21 (25 days)	
6	2150464	30 M	Appendicular abscess drainage	21/11/21	23/11/21 1 2 <sup>nd</sup> pod	Ascending colon leak	Recovered	4/12/21 (13 days)	
7	2154310	65M	Umbilical hernia-hernioplasty	1/12/21	9/12/21 8 <sup>th</sup> pod	Adhesive obstruction	Recovered	16/12/21 (15 days)	
8	2152359	30 M	Stab abdomen-splenic and colonic injury	1/12/21	17/12/21 1 16 <sup>th</sup> pod	Burst abdomen Anastamotic leak	Expired		24/12/21 1
9	2154963	63 M	Appendicular perforationlaparotomy	19/12/21	26/12/21 1 7 <sup>th</sup> pod	Caecal dehiscence	Expired		1/1/22

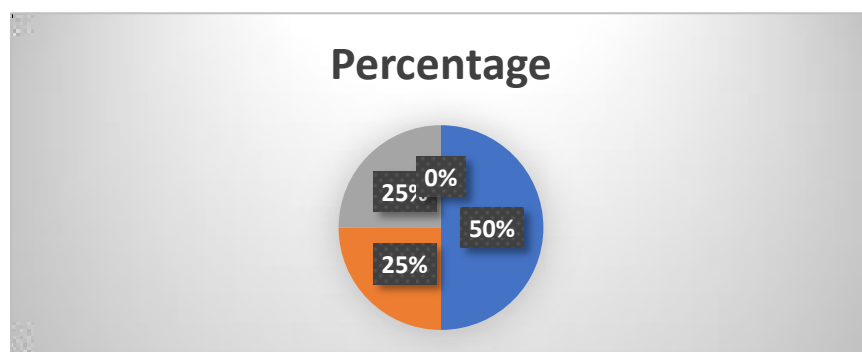
10	2156606	65 M	Gastric perforation-laparotomy	29/12/21	7/1/22 9 <sup>th</sup> pod	Burst abdomen	Recovered	20/1/22 (22 days)	
11	2200557	55 M	Duodenal perforation closure	5/1/22	16/1/22 11 <sup>th</sup> pod	Adhesive obstruction	Recovered	28/1/22 (23 days)	
12	2201156	65 M	Obstructed rt inguinal hernia repair& ileal perforation closure	9/1/22	18/1/22 10 <sup>th</sup> pod	Burst abdomen	Expired		29/1/22
13	2207936	70 M	Laparotomy&colostomy for anal growth	11/3/22	19/3/22 8 <sup>th</sup> pod	Burst abdomen	Recovered	30/3/22 (19 days)	
14	2215997	54 M	Laparotomy& end ileostomy for ileal stricture	21/4/22	25/4/22 4 <sup>th</sup> pod	Ostomy revision	Expired		1/5/22

**1 Pictorial representation of distribution of relaparotomies as per indication**



50% - Burst abdomen  
 28.50% - Peritonitis  
 14.29% - Adhesive obstruction  
 7.14% - Ostomy revision

**2 Pictorial representation of cause of mortality after re-laparotomy**



50% - Sepsis  
 25% - ARDS  
 25%-MOF

**Discussion:**

In this retrospective study of 275 laparotomies conducted in department of government Thiruvavur medical college during May 2021 to April 2022, 14 relaparotomies were performed. Incidence of relaparotomy was found to be 5.07% (50 per 1000 operation per year). Gender wise, 13 male patients and 1 female patient underwent relaparotomy. Majority of them (42.8%) were of 61–70-year age group. Median age of patients who underwent relaparotomy was 59 years.

Regarding time of re-intervention, majority (8 patients, 56.8%) were reoperated after 7 days of primary surgery and 4 patients were reoperated between 4 to 7 days of initial surgery. Remaining only 2 patients were reoperated within 3 days of primary surgery. Mean time for relaparotomy was  $7.71 \pm 3.13$  days. Majority of them (12, 85.8%) were reoperated following primary surgery in emergency setting and only 2 patients (14.2%) were reoperated following elective primary surgery.

Major indication for relaparotomy in this study was burst abdomen, followed by others such as peritonitis due to leak at anastomotic/perforation closure site, adhesive obstruction and ostomy revision in that order.

4 patients were expired after relaparotomy. Most common cause of mortality after relaparotomy was found to be due to septicemia, followed by multiorgan dysfunction and respiratory failure. Even though 7 patients underwent relaparotomy for burst abdomen, only 1 patient who also required ostomy revision expired.

Time of relaparotomy had influence on the mortality outcome as noted by following observation which signify the importance of early re-intervention.

Number of patients who recovered when reoperated within 4 days	=	4
Number of patients who recovered when reoperated after 4 days	=	6
Number of patients who expired when reoperated within 4 days	=	0
Number of patients who expired when reoperated after 4 days	=	4

Remaining 10 patients who recovered after relaparotomy were discharged between 10 days and 25 days. Mean duration of stay of recovered patients after relaparotomy was found to be  $22.86 \pm 6.87$  days. Among 10 patients who recovered after relaparotomy who were followed up to 1 month, 8 had no major complications except for scar hypertrophy in 3 of them whereas other 2 patients had adhesive colic which was managed conservatively.

**Conclusion:**

Relaparotomy is a serious adverse event for any patient undergoing major abdominal surgery especially if conducted in an emergency setting. Delay in seeking appropriate care within crucial time, old age above 60, presence of multiple comorbid conditions, multiple intraabdominal organ injuries following abdominal trauma, peritonitis with gross contamination, relaparotomies planned after 4 days were all important determinants of poor outcome & mortality after relaparotomy as per the results of this study.

Hence decision regarding relaparotomy should be given an adequate forethought by careful post operative monitoring of clinical, radiological and laboratory parameters taking into consideration the pre operative scenario and intra operative finding to arrive at an early clinical judgement. If planned early in the immediate post operative, relaparotomy can be a life-saving procedure for patients presenting with major abdominal surgical ailments. Results observed in this study were confined to the operated patients selected during the chosen study period. Moreover, this is a single centre retrospective study involving only selected smaller group of patients. To extrapolate the observed results to general population, a detailed multi-centre prospective study involving larger population is required.

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