

DETERMINING DIAGNOSTIC AND THERAPEUTIC EFFICACY OF LAPAROSCOPY IN MANAGEMENT OF ACUTE ABDOMEN

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Abstract

Background: Acute abdomen is defined as an unexpected, short-lived, unexplained abdominal pain that last less than 48 hours. An infection, inflammation, vascular occlusion, blockage, or anomalies in the gut's anatomy can all contribute to acute abdomen. **Aims:** The study's objective is to ascertain the role of laparoscopy in the diagnostic and therapeutic efficacy of treating acute abdomen cases admitted to the HIMS Hospital's general surgery and emergency medicine departments. **Materials & Methods:** The present study was a Observational Descriptive Study. This Study was conducted from October 2022 to December 2023 at Department of General Surgery, Hind Institute of Medical Sciences, Barabanki. **Result:** In our study, 47(31.4%) patients underwent Lap Appendectomy, 21 (15.0%) patients underwent Lap Cholecystectomy. In 2 (1.4%) Patients Lap Cholecystectomy is not indicated only taken Biopsy from the Gall Bladder , 4 (2.9%) patients had Lap Converted Open Appendectomy, 1 (0.7%) patient was underwent Lap Diverticulectomy, Laparoscopic Left Cystectomy, Lap Left Oophorectomy, Lap Left Salpingectomy, Lap Right Ovarian Cystectomy, Lap Right Oophorectomy, Lap Right Salpingectomy, Lap right Salpingotomy and Laparoscopic Hernial content Reduction with repair.3 (2.1%) patients had Laparoscopic Appendectomy, underwent for Biopsy which is taken from Mesentric lymph nodes and Omentum with Diagnostic Peritoneal drainage, 12 (8.6%) patients had Laparoscopic Primary Repair of bowel perforation, 27 (18.6%) patients had Laparoscopy was converted to open surgery, 3 (2.1%) patients underwent Laparoscopic Adhesiolysis. The value of z is 4.4356. The value of p is <.00001. The result is significant at p < .05. **Conclusion:** It becomes clear that laparoscopy is an important diagnostic and therapeutic technique for acute abdominal diseases. In comparison to traditional techniques, offering better treatment advantages, better patient outcomes, and higher diagnostic accuracy has produced encouraging and favorable results.

INTRODUCTION

The term "acute abdomen" refers to an unexpected, short-lived, unexplained abdominal pain that often last less than 48 hours.^[1]An infection, inflammation, vascular occlusion, blockage, or anomalies in the gut's anatomy can all contribute to acute abdomen. Usually, the patient will arrive with an abrupt onset of stomach discomfort, accompanied by soreness,

nausea, or vomiting. This clinical presentation frequently calls for immediate surgery to be performed.

The belly is the Pandora's box. Correct diagnosis is so frequently extremely difficult to get at. Acute pancreatitis, appendicitis, ruptured diverticulum of the colon, ovarian torsion, ectopic pregnancy, volvulus of the small and large bowel, ruptured aortic aneurysm, post-traumatic abdominal lacerated organs, ischemic bowel, ureteric colic, and

malrotation of the gut are among the causes of an acute abdomen.^[2]

Pain's location is important since it might indicate a confined process. Diffuse abdominal discomfort may manifest in individuals with free air indicative of some intestinal perforation, though. Palpation will demonstrate rebound soreness, guarding, and stiffness, indicative of peritonitis, and auscultation may reveal early hyperperistalsis to non-existent bowel sounds.

Accurately understanding the many reasons of sudden stomach discomfort is crucial. Patients can be categorized as either needing conservative management or urgent management, which means they need to be treated within 24 hours to avoid serious consequences from developing.

One of the most common procedures done in an emergency situation is a laparotomy.^[3] Patients who report with acute abdominal pain or trauma may undergo it. It is typically carried out as a life-saving measure. Making the decision to have a laparotomy is vital and significant. It is only carried out upon completion of the required studies to arrive at a preliminary diagnosis.

Many individuals may have their clinical signs and symptoms concealed by various therapies administered by various practitioners at various hospitals at various times. Additionally, imaging reports may correspond clinically yet be inconclusive. In these cases, a diagnostic laparoscopy might be the solution. Additionally, diagnostic laparoscopy lowers the incidence of "negative laparotomies" in cases of acute abdomen and the possibility of postoperative consequences from delayed diagnosis.^[4]

With its ability to provide both therapeutic efficacy and diagnostic clarity, laparoscopy has become a vital tool in the diagnosis and treatment of acute abdomen. Severe stomach discomfort is the hallmark of the clinical illness known as acute abdomen, which frequently calls for prompt and accurate management. The way this medical emergency is handled has changed dramatically with the introduction of laparoscopy. The surgeon can precisely determine the underlying cause of the abdominal pain because to the minimally invasive examination of the abdominal cavity that it permits. This approach allows for a prompt diagnosis of common causes, including gynecological problems, appendicitis, cholecystitis, and perforated ulcers.

The fact that laparoscopy can be used for both diagnosis and treatment is one of its many noteworthy benefits. During the same operation, therapeutic measures can typically be initiated as soon as the etiology of the acute abdomen is determined. For example, a perforated ulcer can be healed or an inflammatory appendix removed without requiring a more extensive, invasive surgical procedure. This capacity shortens the duration of the procedure overall, decreases the need for additional procedures, and expedites the patients' recuperation.

MATERIALS AND METHODS

After getting ethical clearance from our institutional Ethical Committee the data for the study was collected from 145 cases with age between 12-70 years presenting with pain abdomen at Hind Institute of Medical Sciences, Barabanki, U.P. (Emergency/OPD cases/IPD cases/consultation Liaison referrals from casualty and other departments) who have given informed consent for the study. Routine blood investigation done along with x-ray abdomen(erect), CECT abdomen (if indicated) following which Diagnostic Laparoscopy was done. Patient with provisional diagnosis of any malignancy, severe co-morbid illnesses e.g. advanced pulmonary diseases and / or decompensated cardiac diseases and patients not giving consent were excluded from study. Patient was managed as underlying pathology (eg.- Diagnostic Laparoscopy with Conservative Management, Laparoscopy converted to open Surgery, Diagnostic as well as Therapeutic Laparoscopic Management).

Statistical Analysis

For statistical analysis data were entered into a Microsoft Excel Spreadsheet and then analyzed by SPSS version 27.0 (SPSS Inc., Chicago, IL, USA) and GraphPad Prism version 5.0 Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Two-sample t-tests for a difference in mean involved independent samples or unpaired samples. Paired t-tests were a form of blocking and had greater power than unpaired tests. -

RESULTS

In our study, 2 (9.5%) patients were with Blunt Trauma, arrived at hospital within 2 hours of injury, 1 (4.8%) patient was with Penetrating injury arrived at hospital within 1.5 hours of injury, 2 (9.5%) patients were with physical assault arrived at hospital within 1 hour of injury, 6 (28.6%) patients were due to fall from bike, arrived at hospital within 3 hours of injury. 3 (14.3%) patients were with trauma due to fall from height, arrived at hospital within 2 hours of injury. And 6(28.6%) patients were referred of RTA and other injuries leading to hospital after 3 hours. In all trauma patients accidental/ medicolegal documentations was done as per established hospital policy. The value of z is 16.1282. The value of p is .00002. The result is significant as $p < .05$.

In our study, there was no surgical history in 139(95.9%) patients. 3 (2.1%) patients had H/O LSCS within 5 Years Back, incidentally 2 patients (1.4%) had diagnostic colonoscopy and there have been 1 (0.7%) patient who had undergone abdominal hysterectomy more than 5 Years Back. The value of z is 16.2169. The value of p is $< .00001$. The result is significant as $p < .05$.

In our study, 26 (17.9%) patients had Liver dullness masked, 2 (1.4%) patients had Liver dullness absent, and resonant and 117 (80.7%) patients had normal liver dullness. The value of z is 13.7286. The value of p is $< .00001$. The result is significant as $p < .05$. In our study, 7 (4.8%) patients had acute abdomen in whom no diagnosis could be established, 24 (16.6%) patients had abdominal visceral perforation, 53 (36.6%) patients had acute appendicitis, and 28 (19.3%) patients had acute cholecystitis, 9 (6.2%) patients had acute intestinal obstruction, 14 (9.7%) patients had blunt trauma abdomen, 1 (0.7%) patient was left ovarian cyst, 1 (0.7%) patient was Meckel's Diverticulum, 1 (0.7%) patient was diagnosed as obstructed inguinal hernia, 1 (0.7%) patient was admitted with penetrating injury of abdomen, 2 (1.4%) patients had right ovarian cyst and 4 (2.8%) patients had ruptured ectopic pregnancy. The value of z is 7.8442. The value of p is $< .00001$. The result is significant as p value $< .05$. In our study, 16 (11%) patients underwent diagnostic Laparoscopy, which was managed conservatively, 27 (18.6%) Patient undergone Laparoscopic converted to open Surgery. In 102 (70.4%) patients Diagnostic as well as Therapeutic Laparoscopic management done. The value of z is 8.8624. The value of p is $< .00001$. The result is significant as $p < .05$. In our study, 47 (31.4%) patients underwent Lap Appendectomy, 21 (15.0%) patients underwent Lap Cholecystectomy. In 2 (1.4%) Patients Lap Cholecystectomy is not indicated only taken Biopsy from the Gall Bladder , 4 (2.9%) patients had Lap Converted Open Appendectomy, 1 (0.7%) patient underwent Lap Diverticulectomy, 1 (0.7%) patient underwent Laparoscopic Left Cystectomy, 1 (0.7%) patient was Lap Left Oophorectomy, 1 (0.7%) patient was Lap Left Salpingectomy, 1 (0.7%) patient was Lap Right Ovarian Cystectomy, 1 (0.7%) patient was Lap Right Oophorectomy, 1 (0.7%) patient was Lap Right Salpingectomy, 1 (0.7%) patient was Lap right Salpingotomy, 3 (2.1%) patients had Laparoscopic Appedicectomy, 3 (2.1%) patients underwent for Biopsy which is taken from Mesentric lymph nodes and Omentum with Diagnostic Peritoneal drainage. 12 (8.6%) patients had Laparoscopic Primary Repair of bowel perforation, 27 (18.6%) patients had Laparoscopy was converted to open surgery, 3 (2.1%) patients underwent Laparoscopic. Adhesiolysis and 1 (0.7%) patient underwent Laparoscopic Hernial content Reduction with repair. The value of z is 4.4356. The value of p is $< .00001$. The result is significant at $p < .05$. The value of z is 6.9739. The value of p is $< .00001$. The result is significant as $p < .05$.

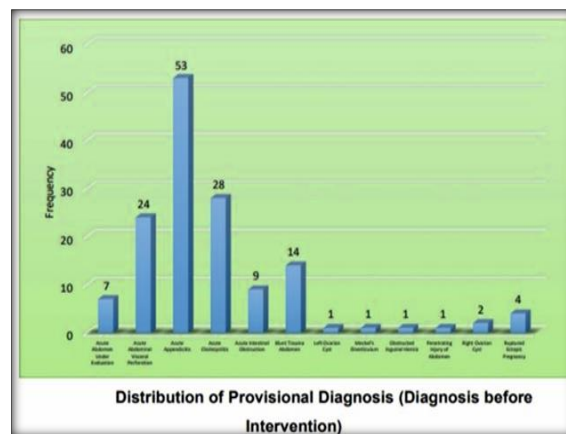


Figure 1: Distribution of Provisional Diagnosis (Diagnosis before Intervention)

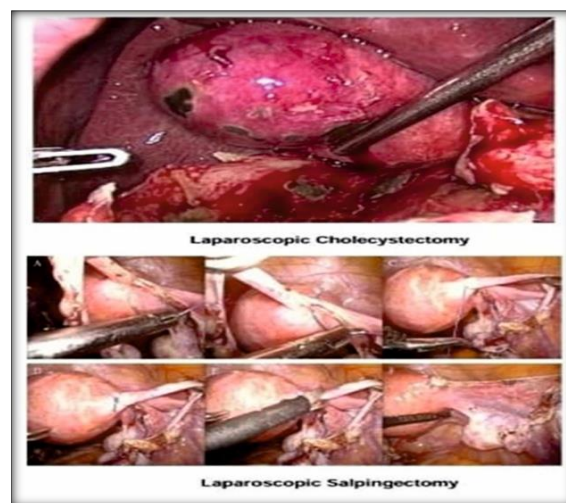


Figure 2: Laparoscopic Cholecystectomy and Laparoscopic Salpingectomy

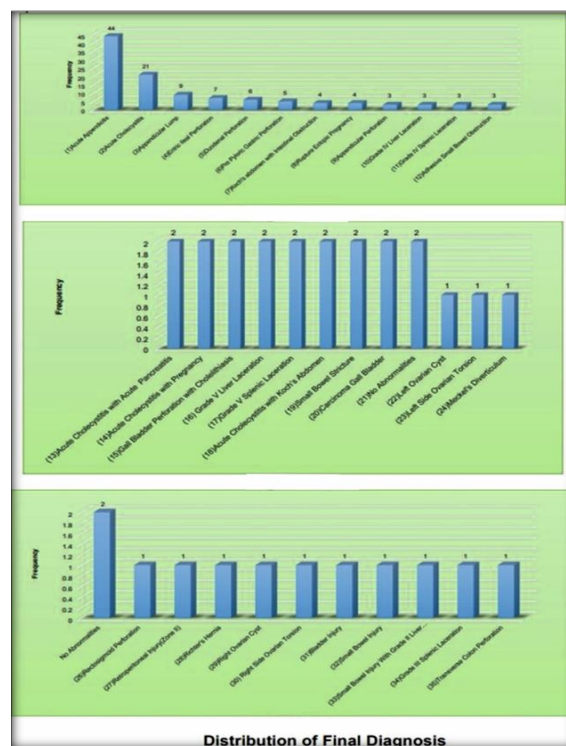


Figure 3: Distribution of Final Diagnosis

Table 1: Distribution of Provisional Diagnosis (Diagnosis before Intervention)

Provisional Diagnosis (Diagnosis Before Intervention)	Frequency	Percent
Acute Abdomen Under Evaluation	7	4.80%
Acute Abdominal Visceral Perforation	24	16.60%
Acute Appendicitis	53	36.60%
Acute Cholecystitis	28	19.30%
Acute Intestinal Obstruction	9	6.20%
Blunt Trauma Abdomen	14	9.70%
Left Ovarian Cyst	1	0.70%
Meckel's Diverticulum	1	0.70%
Obstructed Inguinal Hernia	1	0.70%
Penetrating Injury of Abdomen	1	0.70%
Right Ovarian Cyst	2	1.40%
Ruptured Ectopic Pregnancy	4	2.80%
Total	145	100.0%

Table 2: Distribution of Provisional Diagnosis (Diagnosis before Intervention)

Laparoscopic Intervention	Frequency	Percent
Diagnostic Laparoscopy with Conservative Management	16	11.00%
Laparoscopy converted to open Surgery	27	18.60%
Diagnostic as well as Therapeutic Laparoscopic Management	102	70.40%

Table 3: Distribution of Laparoscopic Intervention done

Laparoscopic Intervention done	Frequency	Percent
Not performed	16	11.20%
Lap Appendectomy	47	33.50%
Lap Cholecystectomy	21	15.00%
Lap Cholecystectomy is not indicated only taken Biopsy from the Gall Bladder	2	1.40%
Lap Converted to Open Appendectomy	4	2.90%
Lap Diverticulectomy	1	0.70%
Lap Left Ovarian Cystectomy	1	0.70%
Lap Left Oophorectomy	1	0.70%
Lap Left Salpingectomy	1	0.70%
Lap Right Cystectomy	1	0.70%
Lap Right Oophorectomy	1	0.70%
Lap Right Salpingectomy	1	0.70%
Lap Right Salpingotomy	1	0.70%
Laparoscopic Biopsy taken from Mesentric lymph nodes, Omentum, with Diagnostic Peritoneal drainage	3	2.10%
Laparoscopic Primary Repair of Bowel Perforation	12	8.60%
Laparoscopy converted to open surgery (Exploratory Laparotomy)	27	18.60%
Laparoscopic Adhesiolysis	3	2.10%
Laparoscopic Hernial content Reduction with Repair	1	0.70%
Total	145	100.00%

Table 4: Distribution of Final Diagnosis

Final Diagnosis	Frequency	Percent
(1) Acute Appendicitis	44	30.30%
(2) Acute Cholecystitis	21	14.50%
(3) Appendicular Lump	9	6.20%
(4) Enteric Ileal Perforation	7	4.80%
(5) Duodenal Perforation	6	4.10%
(6) Prepyloric Gastric Perforation	5	3.40%
(7) Koch's abdomen with Intestinal Obstruction	4	2.80%
(8) Rupture Ectopic Pregnancy	4	2.80%
(9) Appendicular Perforation	3	2.10%
(10) Grade IV Liver Laceration	3	2.10%
(11) Grade IV Splenic Laceration	3	2.10%
(12) Adhesive Small Bowel Obstruction	3	2.10%
(13) Acute Cholecystitis with Acute Pancreatitis	2	1.40%
(14) Acute Cholecystitis with Pregnancy	2	1.40%
(15) Gall Bladder Perforation with Cholelithiasis	2	1.40%
(16) Grade V Liver Laceration	2	1.40%
(17) Grade V Splenic Laceration	2	1.40%
(18) Acute Cholecystitis with Koch's Abdomen	2	1.40%
(19) Small Bowel Stricture	2	1.40%
(20) Carcinoma Gall Bladder	2	1.40%
(21) No Abnormalities	2	1.45%
(22) Left Ovarian Cyst	1	0.70%
(23) Left Side Ovarian Torsion	1	0.70%
(24) Meckel's Diverticulum	1	0.70%
(25) Rectosigmoid Perforation	1	0.70%

(26) Retroperitoneal Injury (Zone II)	1	0.70%
(27) Richter's Hernia	1	0.70%
(28) Right Ovarian Cyst	1	0.70%
(29) Right Side Ovarian Torsion	1	0.70%
(30) Bladder Injury	1	0.70%
(31) Small Bowel Injury	1	0.70%
(32) Small Bowel Injury with Grade II Liver Laceration	1	0.70%
(33) Grade III Splenic Laceration	1	0.70%
(34) Transverse Colon Perforation	1	0.70%
(35) Acute Mesenteric Ischemia	1	0.70%
(36) Duodenal Perforation with Jejunal Perforation	1	0.70%
Total	145	100.00%

DISCUSSION

This research is a descriptive observational study. This study was carried out at the Hind Institute of Medical Sciences' Department of General Surgery in Barabanki, Uttar Pradesh, from October 2022 to December 2023.

Subhash TK et al,^[5] (2021) found that Laparoscopy has proven to be useful for both diagnostic and therapeutic purposes in individuals with generalized abdominal discomfort. A total of sixty-two individuals in the 15–60 age range were examined. After a diagnostic laparoscopy, 85.48% of patients experienced a relief of their discomfort, with 88.7% of patients achieving diagnostic accuracy.

The majority of patients we looked at were between the ages of 31 and 40 58(40.0%), which is statistically significant ($p < .00001$), ($z = 7.5473$)

Elhardello OA et al,^[6] (2018) found that it is useful to think about the knowledge that DRE could supply before consigning it to the annals of history. It is possible to palpate uterine enlargements, displacements, and swellings in the female.

Verki MM et al,^[7] (2018) found that rectal sheath hematomas are an uncommon but well-known condition. The following conditions may increase the risk of bleeding in the aforementioned muscle sheath: strenuous exercise, pregnancy, insulin injections subcutaneously, abdominal surgery, and violent coughs. In this instance, they will talk about a 28-year-old female patient who complained of stomach pain and who, after receiving conservative therapy, recovered in just one week. The patient had rectus sheath hematoma. In the current study, no such case has been noted.

Sharaf MF et al,^[8] (2020) found that in the Surgical Department, patients frequently arrive with stomach discomfort. One popular surgical procedure for individuals with "acute abdomen" is emergency laparoscopy. Thirty-five of the patients were female, while the remaining sixty patients were male, ranging in age from twelve to sixty.

In our study also female population 83 (57.2%) was higher than the male population 62(42.8%) which is statistically significant ($p = .01352$), ($z = 2.4663$).

We examined that, only 144 (99.3%) patients had Nausea it was statistically significant ($p < .00001$), ($z = 16.7945$).

Thawait A et al,^[9] (2017) showed that a significant amount of the total workload for general surgery is

made up of emergency admissions brought on by sudden, nonspecific abdominal discomfort. The mean age of presentation was 30.5 ± 12.9 years, with M:F ratio of 1:2.1. In this 62% patients were young adults (20-40 years). The most common presenting symptoms are pain, nausea, vomiting.

Gejoe G et al,^[3](2017) found that although emergency laparotomies are often performed high-risk surgical procedures, there are little data on their results and even fewer on their aftercare. Finding the clinical presentation, surgical indications, preoperative delay, intraoperative findings, and postoperative problems was the study's main goal. The age range of 40 to 80 years old comprised the majority of the patients.

The average age of the participants in our research was $[38.6759 \pm 9.4493]$.

Thakur JK et al,^[10] (2019) found that acute abdomen is described as "a spectrum of surgical, medical, and gynecological conditions that require hospital admission, investigations, and treatment, ranging from trivial to life-threatening conditions." Additionally, the most common symptom and sign in our study were, respectively, abdominal pain and abdominal tenderness. Acute appendicitis was the most frequent cause of acute abdomen.

Subramaniam R et al,^[11] (2019) examined that in all age groups, acute abdominal discomfort is a significant surgical issue. For life-threatening illnesses to be ruled out, early diagnosis is essential. A valuable current tool for providing appropriate therapy to all those in need is the diagnostic laparoscopy.

The current project looks at the use of laparoscopy to identify and confirm illnesses such as acute appendicitis, appendicular abscess, duodenal perforation, and ileal perforation in patients with acute abdominal discomfort..

In maximum number of cases 44(30.3%) an acute case of appendicitis is the cause of acute abdomen. that has statistical significance ($p < .00001$), ($z = 7.8442$).

In Ultrasound reports 39 patients (26.9%) had a blind ended tubular non peristaltic, non-compressible in Right Iliac Fossa with any obvious free fluid collection suggestive of Appendicitis. Which is statistically significant ($p < .00001$), ($z = 6.4712$).

Also significant number of patients 3(2.1%) had CECT abdomen indicating of-Grade IV Liver Laceration (Parenchymal disruption involving 25-

75% hepatic lobe), CECT Abdomen indicating of Grade IV Splenic laceration, (hilar vessels involvement) associated with significant devascularisation (>25% of spleen) in 3 patients (2.1%) which is statistically significant ($p < .00001$), ($z = 15.4381$).

Kataoka J et al,^[12] (2019) found that in adults and children, acute abdominal discomfort in rare cases can be attributed to torsion of the greater omentum. Torsion resembles various acute illnesses, making a clinical diagnosis extremely challenging. However, preoperative diagnosis may be readily validated by computed tomography (CT). In this instance, they describe a laparoscopic omentectomy for primary omentum torsion that did not improve with conservative measures.

We observed that 16 (11.0%) patients were managed conservatively which is statistically significant ($p < .00001$), ($z = 13.2712$).

El-Labban GM et al,^[13] (2010) found that persistent stomach discomfort is a challenging ailment. It results in obvious bodily and psychological anguish and incapacity. The literature has documented a great deal of diagnostic and therapeutic treatments, but little of them has been proven or shown to work.

We found that, most of the patients 102 (70.4%) underwent laparoscopic surgery for both therapeutic and diagnostic purposes. that has statistical significance ($p < .00001$), ($z = 12.8014$)

We examined that, more of the patients 43(29.7%) experienced a statistically significant inflammatory and erythematous appendix during a diagnostic laparoscopy ($p < .00001$), ($z = 6.8747$).

It has been our observation that maximum number of the patients underwent Lap Appendectomy in 47 (31.4%) patients which is statistically significant ($p < .00001$), ($z = 4.4356$).

We examined that the 6(4.1%) patients had exploratory laparotomies combined with splenectomy procedures. This had statistical significance ($p < .00001$), ($z = 13.9673$)

We observed that, higher number of patients 44 (30.3%) suffering from acute appendicitis. that has statistical significance ($p < .00001$), ($z = 6.9739$).

The number of patients 142 (97.9%) were cured out of total 145 cases which is statistically significant ($p < .00001$), ($z = 14.274$)

We examined that, the mean CBC- HB (gm/dl) of patients was $[11.4455 \pm 2.1684]$, the mean TLC(cumm) of patients was $[10954.4828 \pm 7573.4733]$ along with the mean Platelets (lacs/cumm)of patients was $[3.2124 \pm .6857]$ and the mean Bilirubin Total(mg/dl) of patients was $[1.1333 \pm .3777]$.

In our study, the mean Bilirubin Direct(mg/dl) of patients was $[.6622 \pm .2104]$, the mean SGOT (IU/L) of patients was $[31.1034 \pm 10.3553]$, The mean SGPT (IU/L) of patients was $[31.0345 \pm 11.9294]$. The mean ALP(IU/L) of patients was $[139.8138 \pm 37.9567]$ and the mean Random Blood Sugar(mg/dl) of patients was $[115.1586 \pm 11.4233]$.

We observed that, the mean S. Urea(mg/dl) of patients was $[28.9517 \pm 9.4493]$. The mean S. Creatinine (mg/dl) of patients was $[.9238 \pm .4082]$ The mean Na+(mEq/L) of patients was $[137.9310 \pm 3.8218]$, The mean K+ (mEq/L) of patients was $[3.9183 \pm .3484]$. And the mean Ca2+(mEq/L) of patients was $[8.5131 \pm .8058]$.

We showed that, the mean PT (Sec) of patients was $[15.1586 \pm .9104]$, The mean PC (Sec) of patients was $[13.7262 \pm 1.2344]$ along with the mean INR of patients was $[1.2345 \pm .4842]$, The mean S. Lipase (IU/L) of patients was $[37.8962 \pm 29.1698]$. And the mean S. Amylase (IU/L) of patients was $[46.4245 \pm 51.3869]$.

We examined that, 138 (95.2%) patients had Vomiting that is statistically significant ($p < .00001$), ($z = 15.3852$) and we also observed that, only 71 (49.0%) patient had Abdominal Distention which is statistically significant ($p = .72634$), ($z = 0.3523$). 15 (10.3%) patients had Constipation which is statistically significant ($p < .00001$), ($z = 13.5061$), It is an observation that only in 14 (9.4%) patients had Bladder Symptom which is statistically significant ($p < .00001$), ($z = 16.7945$) and Out of total Study of 145 cases in 130 (89.7%) patients had Fever which is statistically significant ($p < .00001$) ($z = 13.5061$).

It is noteworthy that the majority of patients in the injury group had a history of RTAs as a result of bike falls, and they arrived at the hospital an average of half an hour after the accident.

The patients had a history of asthma for the previous five years and hypertension for more than two years, according to research observations.

Two instances of acute abdomen that were linked to rectal bleeding underwent colonoscopy. Under this study 24(16.6%) patients had Pallor(Anaemia) and 2(1.4%) patients had Jaundice(Icterus) which is statistically significant ($p < .00001$) ($z = 16.5596$).

The Study reveals that 11(7.6%) patients had Ascites present at the time of admission, and it is statistically significant ($p < .00001$), ($z = 14.274$).

The majority of the patients 82 (56.6%) had flat, non-distended abdomen which it is statistically significant ($p < .00001$), ($z = 10.5235$).

In the study it has been found that patients 51(33.8%) displaying compassion at Right Iliac Fossa without perceptible lump and with rebound and guarding discomfort, which is statistically significant ($p < .00001$), ($z = 7.2682$).

Under this study majority of the patients 117 (80.7%) had normal liver dullness. Which is statistically significant ($p < .00001$), ($z = 13.7286$).

We examined that, higher of the patients 94(64.8%) had normal Bowel Sound. Which is statistically significant ($p < .00001$), ($z = 9.9989$).

CONCLUSION

It becomes clear that laparoscopy is an important diagnostic and therapeutic technique for acute abdominal diseases. In comparison to traditional

techniques, offering better treatment advantages, better patient outcomes, and higher diagnostic accuracy has produced encouraging and favorable results. Further improvements in laparoscopic procedures might potentially increase its effectiveness and broaden its use in the care of acute abdomens. A diagnostic laparoscopy is an invaluable investigative tool that any surgeon performing general surgery should have in their toolbox. The diagnostic laparoscopy is a vital tool in the emergency medicine department's patient management arsenal.

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