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STUDY OF ACUTE ABDOMINAL SYNDROME WITH RADIOLOGICAL CO-RELATION

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ABSTRACT:-

Acute abdomen syndrome refers to a sudden, severe abdominal pain that often necessitates urgent medical evaluation and intervention. This condition can arise from a variety of etiologies, including gastrointestinal, gynecological, urological, and vascular causes. Radiological imaging, including ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI), plays a crucial role in diagnosing the underlying cause and guiding appropriate management. This abstract highlights the importance of radiological correlation in the evaluation of acute abdomen syndrome, emphasizing how imaging techniques can help differentiate:

Methods

This study employed a prospective observational design, enrolling patients presenting with acute abdominal pain to the emergency department. Inclusion criteria comprised adult patients (aged 18 and above) with sudden onset, severe abdominal pain requiring urgent evaluation.

All enrolled patients underwent a thorough clinical evaluation, including detailed history-taking, physical examination, and routine laboratory tests.

Radiological imaging was performed as follows:

1.Ultrasound (US): All patients underwent an initial abdominal ultrasound to evaluate for gallbladder pathology, free fluid, and other intra-abdominal abnormalities.

2.Computed Tomography (CT): Contrast-enhanced abdominal CT scans were performed in cases where ultrasound findings were inconclusive or when a more detailed evaluation was required.

3. Magnetic Resonance Imaging (MRI): MRI was utilized selectively, particularly in cases where radiation exposure needed to be minimized or when soft tissue detail was paramount.

Radiological findings were correlated with clinical data to arrive at a comprehensive diagnosis. The final diagnosis was confirmed through surgical, pathological, or follow-up clinical outcomes.

Statistical analysis was conducted to assess the sensitivity, specificity, and accuracy of each imaging modality in diagnosing the underlying causes of acute abdomen syndrome.

Introduction

Acute abdomen is a severe pain of short duration requiring decision whether an urgent intervention is necessary. The acute abdomen may be caused by an infection, inflammation, vascular occlusion, or obstruction. [1] The patient will usually present with sudden onset of abdominal pain with associated nausea or vomiting. Most patients with an acute abdomen appear ill. The approach to a patient with an acute abdomen should include a thorough history and physical examination.

Many cases of acute abdomen present as abdominal pain accompanied by guarding and rigidity, exhibiting the clinical picture of peritonitis and usually calls for an emergency operation.[2] This may lead people to think that acute abdomen and surgical abdomen are synonymous. However, surgery is not the treatment of all cases of acute abdomen but it is the most commonly attended surgical emergency. The incidence of acute abdomen is 5%-10%. [3-5] It common cause for non-trauma related hospital represents the most admissions.[3] Acute abdomen can be caused by intra-, extra-abdominal, and metabolic causes. The most frequent diagnosis made is that of a nonspecific or undifferentiated abdominal pain in 34% cases of non-traumatic abdominal pain. Of the remaining 66% cases three-quarters are diagnosed as either acute appendicitis, small bowel obstruction, hollow viscus perforation or are ascribed to gynaecological causes. [3,6]

The location of pain is critical as it may signal a localised process. However, in patients with free air, it may present with diffuse abdominal pain. Auscultation may reveal absent bowel sounds and palpation may reveal rebound tenderness and guarding, suggestive of peritonitis. The causes of an acute abdomen include appendicitis, perforated peptic ulcer, acute pancreatitis, ruptured sigmoid diverticulum, ovarian torsion, volvulus, ruptured aortic aneurysm, lacerated spleen or liver, and ischemic bowel. [7,8,9]

History taking and physical examination form the corner stone of diagnosis.[10] Investigative studies are essential in the assessment of the acute abdomen. Laboratory tests by themselves are not enough to assess the patient, so radiological studies are an important part of patient evaluation. Patients of acute abdomen initially present to primary healthcare provider. Only a few investigations are available at their level in our country. Imaging modalities like plain X-ray, ultrasonography (USG) and rarely computed tomography are at their disposal. The choice of modality should be made after weighing the possibility of establishing a diagnosis and the risks of radiation exposure.

Despite rapid advances in modern medicine, the problem of early accurate diagnosis in patients with obscure intra-abdominal pathology continues to plague the primary care physicians. Accurate diagnosis is necessary in acute abdomen cases to avoid unnecessary referrals to the surgeon as well as to avoid delay in surgical intervention. In emergency, mostly acute abdomen cases are

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diagnosed by clinical evaluation, plain X-rays and USG. Some patients require CT scan. Multi-slice, helical CT is increasingly replacing Ultrasonography (USG) for the evaluation of patients with acute abdominal pain. CT has major advantages over USG: it is extremely fast, and the time burden is often less than that of a USG examination. [13]

This study has been conducted to assess the combined role of clinical acumen and radiological investigation to arrive at an accurate diagnosis of acute

abdominal conditions.

Results

A total of 150 patients with acute abdominal pain were enrolled over a 12-month period. The cohort included 80 females and 70 males, with a mean age of 45 years.

1. Ultrasound Findings: Abdominal ultrasound identified gallstones in 30% of cases, free fluid in 15%, and other abnormalities (such as appendicitis or ovarian cysts) in 20% of cases.

2. CT Findings: Contrast-enhanced CT scans revealed definitive diagnoses in 60% of cases, including bowel obstruction, diverticulitis, and complicated

Conclusion

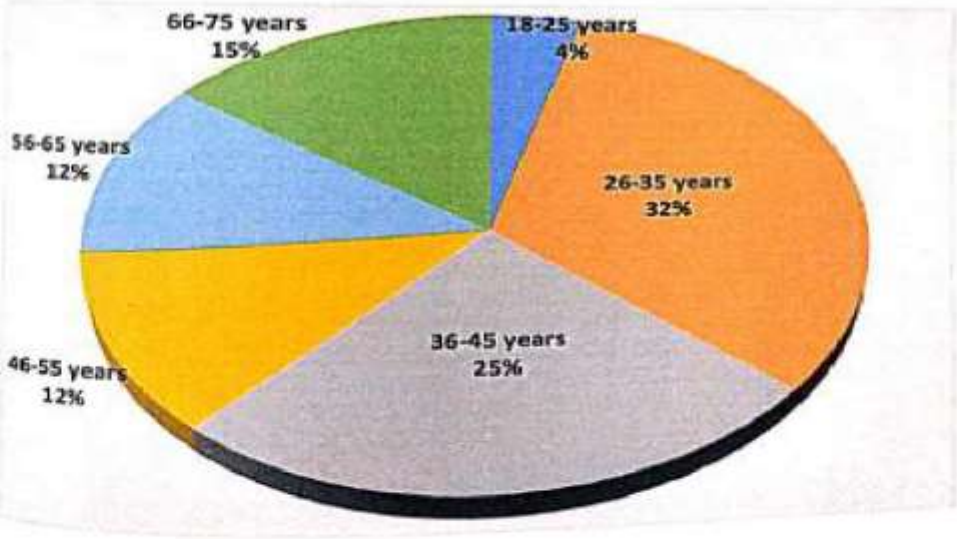
In conclusion, acute abdomen syndrome presents a diverse range of causes, requiring timely and accurate diagnosis for effective management. Radiological imaging, including ultrasound, CT, and MRI, plays a pivotal role in diagnosing the underlying etiology, guiding treatment decisions, and reducing unnecessary interventions. The integration of clinical findings with radiological correlations improves diagnostic accuracy, allowing for better patient outcomes. Further studies with larger sample sizes and advanced imaging techniques are essential to refine our understanding and optimize the diagnostic approach to acute abdomen syndrome.

Results

Table 1: Age distribution among study subjects

Age in years	Freq.	Percent
18-25 years	6	4.0%
26-35 years	49	32.7%
36-45 years	37	24.7%
46-55 years	18	12.0%
56-65 years	18	12.0%
66-75 years	22	14.7%
Total	150	100%

The mean age of study subjects was 45±15.6 years. Majority around one-third (32.7%) were b/w 26-35 years, followed by 24.7% were b/w 36-45 years.

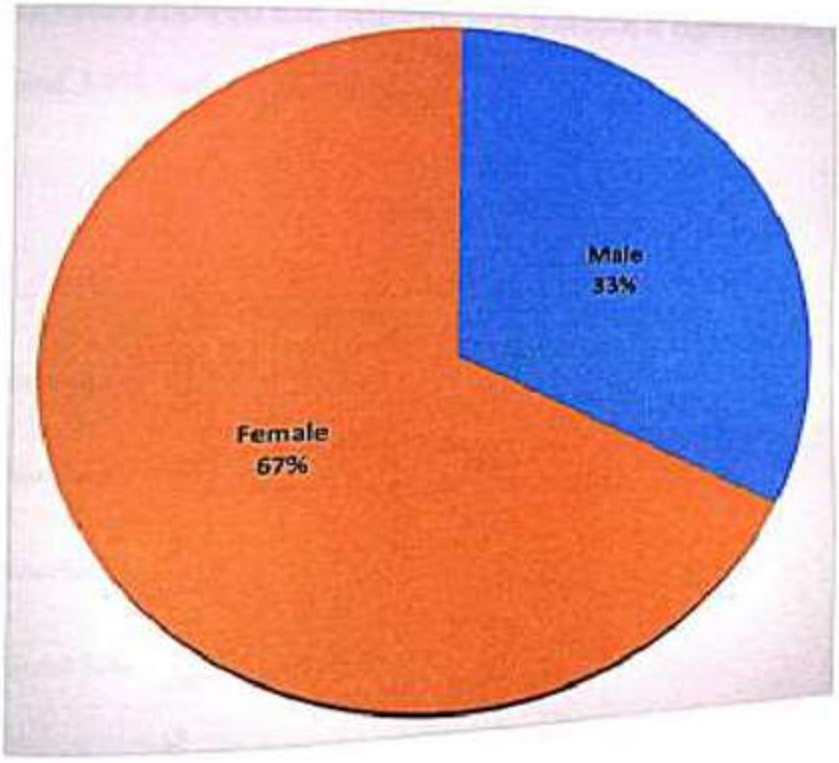


Graph No 1: Age Distribution

Table 2: Sex distribution among study subjects

Sex	Freq.	Percent
Male	50	33%
Female	100	67%
Total	150	100%

Among study subjects 67% were female and 33% were male.

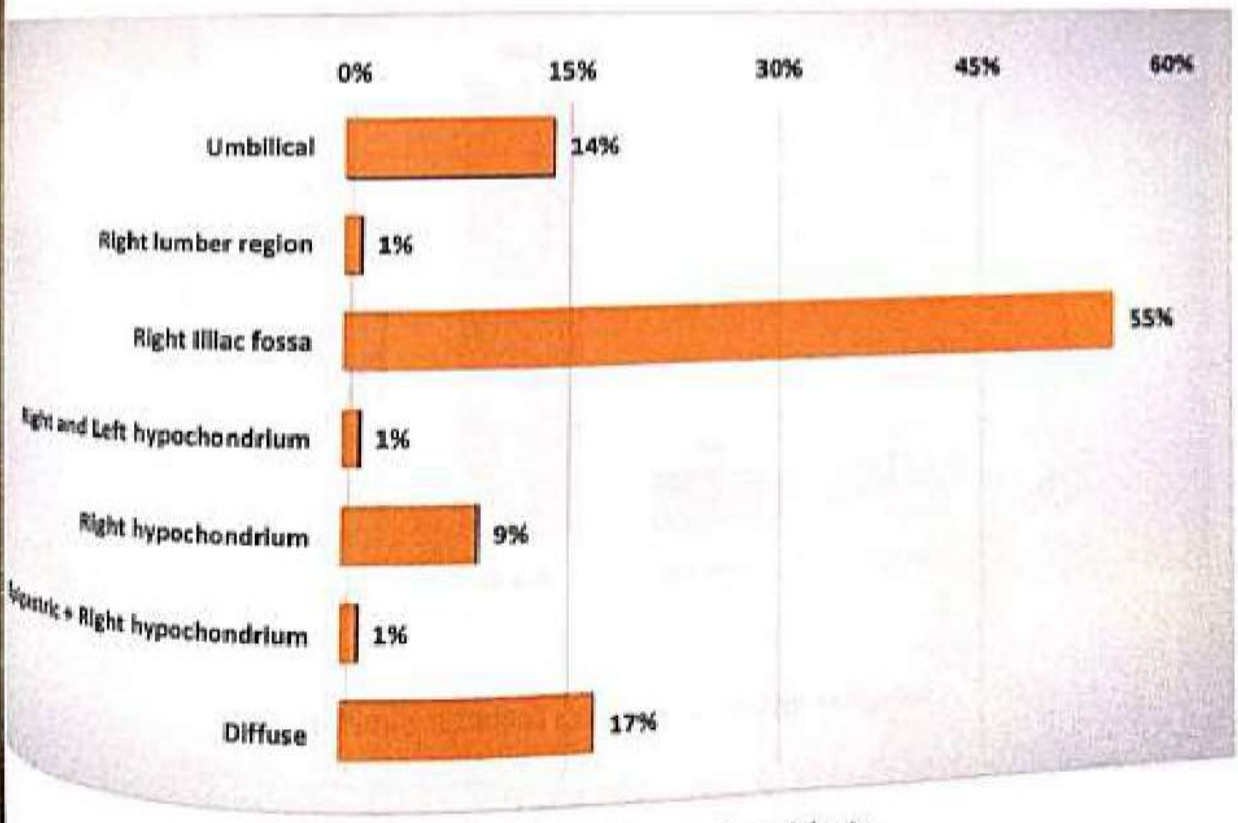


Graph No.: 2 Sex Distribution

Table 3: Pain among study subjects

Pain	Freq.	Percent
Diffuse	26	17%
Epigastric + Right hypochondrium	2	1%
Right hypochondrium	14	9%
Right and Left hypochondrium	2	1%
Right Illiac fossa	83	55%
Right lumber region	2	1%
Umbilical	21	14%
Total	150	100%

Pain distribution among cases showed that majority 55% had pain at right iliac fossa, followed by 17% had diffuse pain and 14% had umbilical pain.

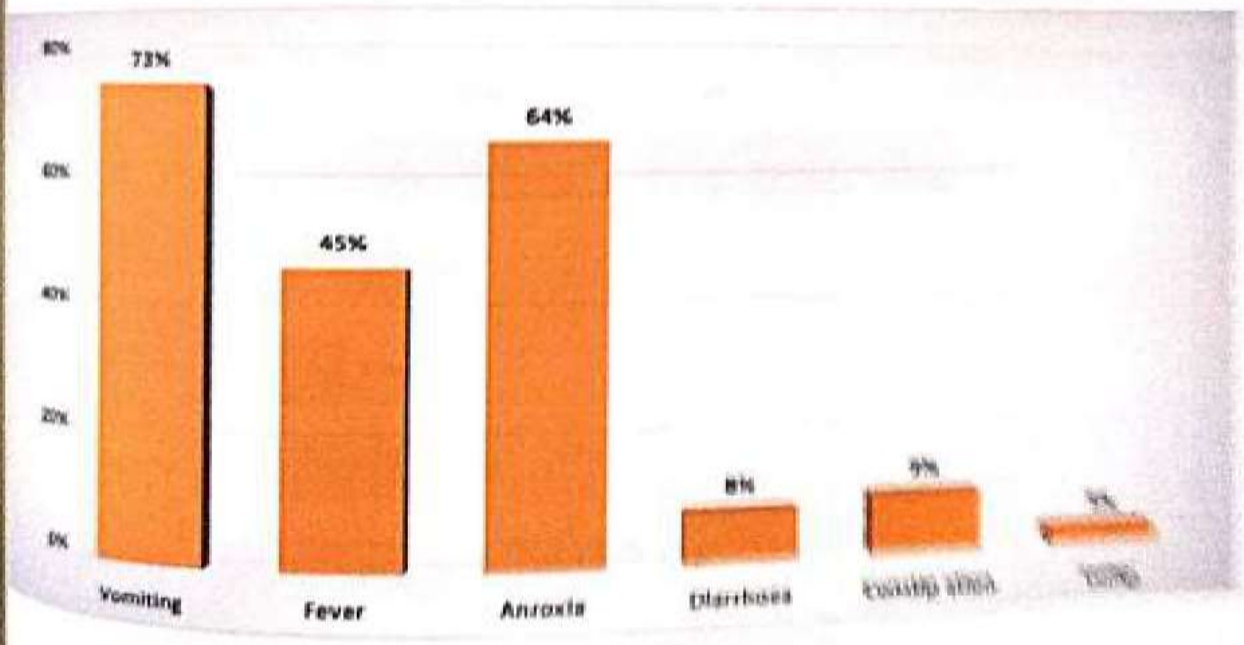


Graph No: 3 Pain among study subjects

Table 4: Clinical symptoms among study subjects

Clinical symptoms	Freq.	Percent
Vomiting	109	73%
Fever	68	45%
Anorexia	96	64%
Diarrhea	12	8%
Constipation	14	9%
Lung	4	3%

Clinical symptoms among study subjects showed that 73% had vomiting, 64% had anorexia, 45% had fever and 9% had constipation.

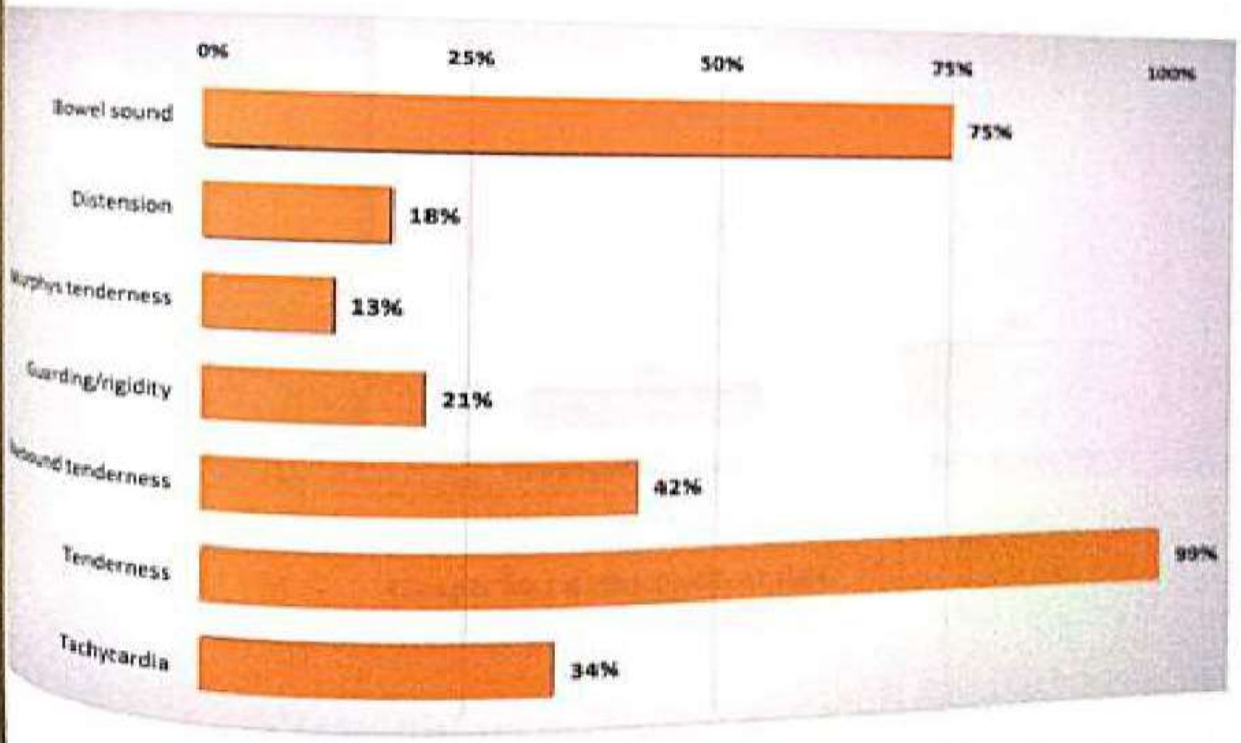


Graph No: 4 Clinical symptoms among subjects

Table 5: Distribution of Clinical sign

Clinical sign	Freq.	Percent
Tachycardia	51	34%
Tenderness	148	99%
Rebound tenderness	63	42%
Guarding/rigidity	32	21%
Murphys tenderness	19	13%
Distension	27	18%
Bowel sound	112	75%

Distribution of clinical signs showed that 99% had tenderness, 75% had bowel sound, 42% had rebound tenderness, 34% had tachycardia, 21% had guarding/rigidity, 18% had distension and 13% had murphys tenderness.



Graph No: 5 Distribution of clinical sign

Table 5: Distribution of Clinical sign

Clinical sign	Freq.	Percent
Tachycardia	51	34%
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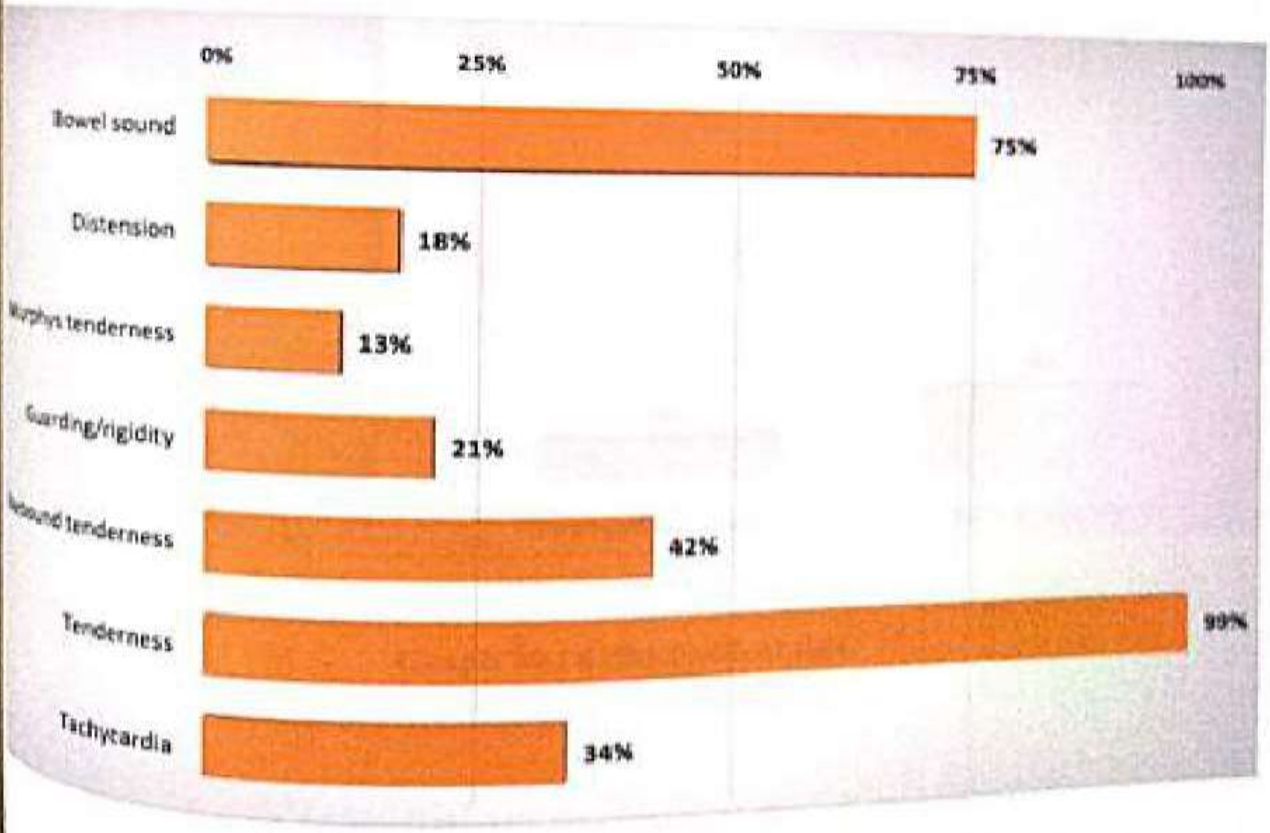
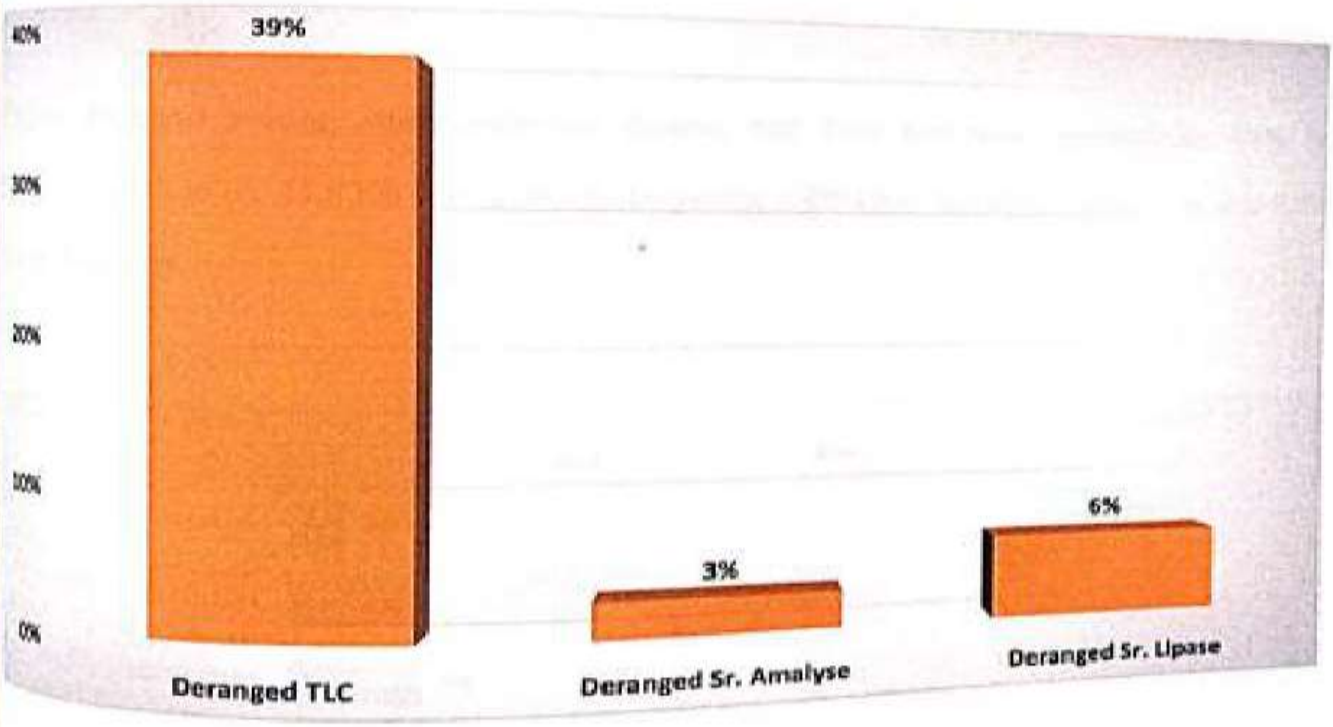


Graph No: 5 Distribution of clinical sign

Table 6: Biochemical sign among study subjects

Biochemical sign	Freq.	Percent
Deranged TLC	59	39%
Deranged Sr. Amalyse	4	3%
Deranged Sr. Lipase	9	6%

Among study subjects 39% had deranged TLC, 6% had deranged Sr. Lipase and 3% had deranged Sr.Amylase.

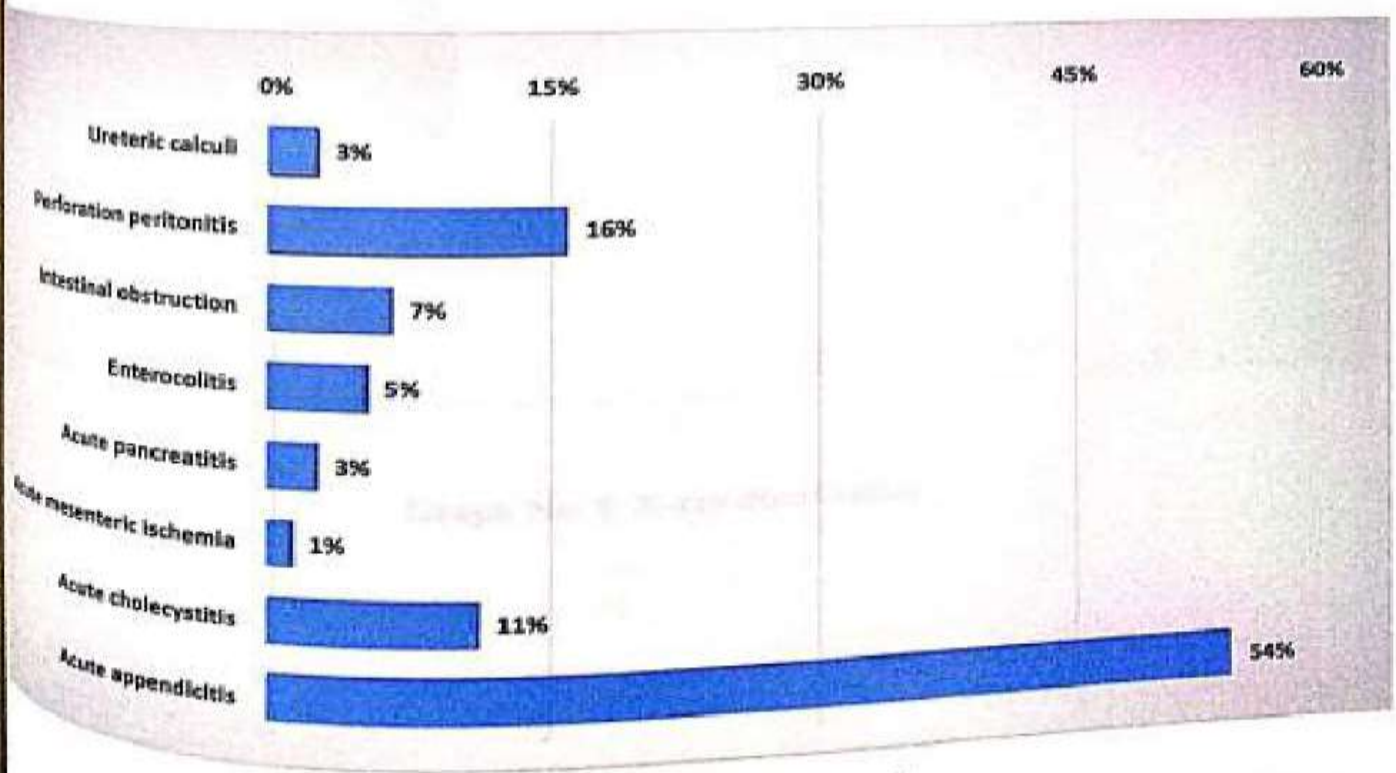


Graph No: 6 Biochemical sign

Table 7: Clinical diagnosis among study subjects

Clinical diagnosis	Freq.	Percent
Acute appendicitis	81	54
Acute cholecystitis	17	11.33
Acute mesenteric ischemia	2	1.33
Acute pancreatitis	4	2.67
Enterocolitis	8	5.33
Intestinal obstruction	10	6.67
Perforation peritonitis	24	16
Ureteric calculi	4	2.67
Total	150	100

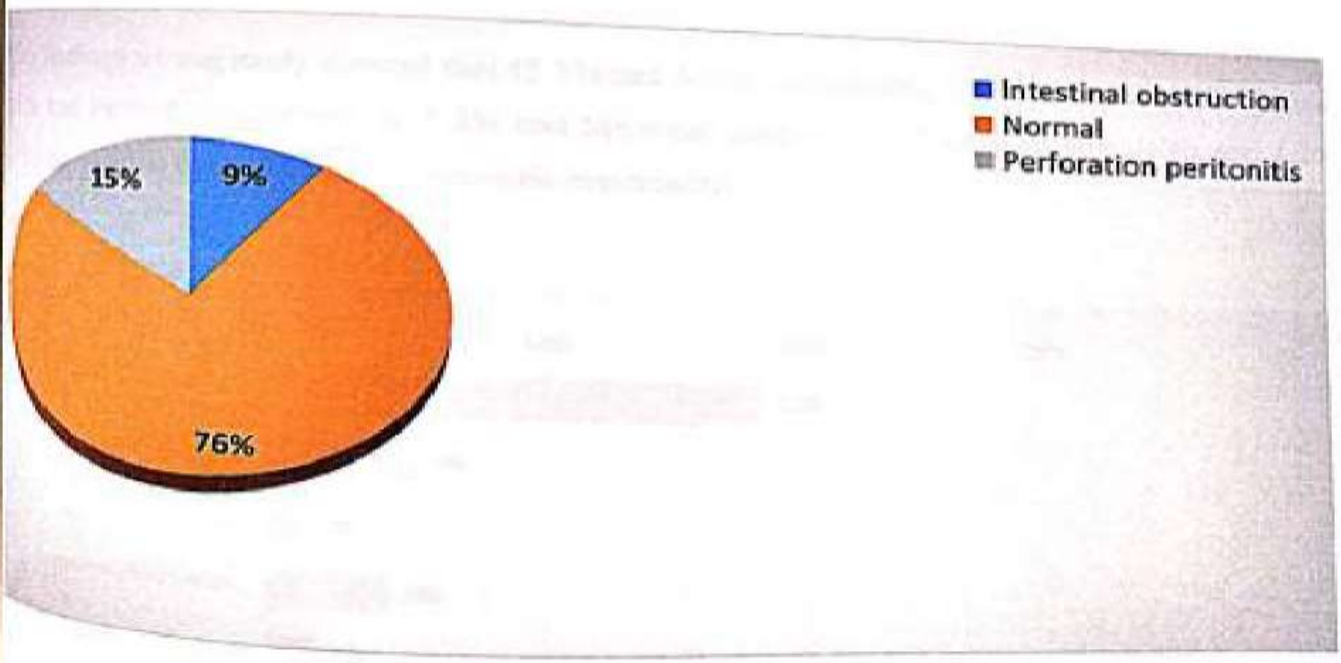
Clinical diagnosis among study subjects showed that 54% had acute appendicitis, 16% had perforation peritonitis, 11.33% had acute cholecystitis, 6.67% had intestinal obstruction, and 5.33% had enterocolitis.



Graph No: 7 Clinical diagnosis

X-ray findings	Frequency	Percent
Intestinal obstruction	14	9.3
Normal	114	76
Perforation peritonitis	22	14.7
Total	150	100.0

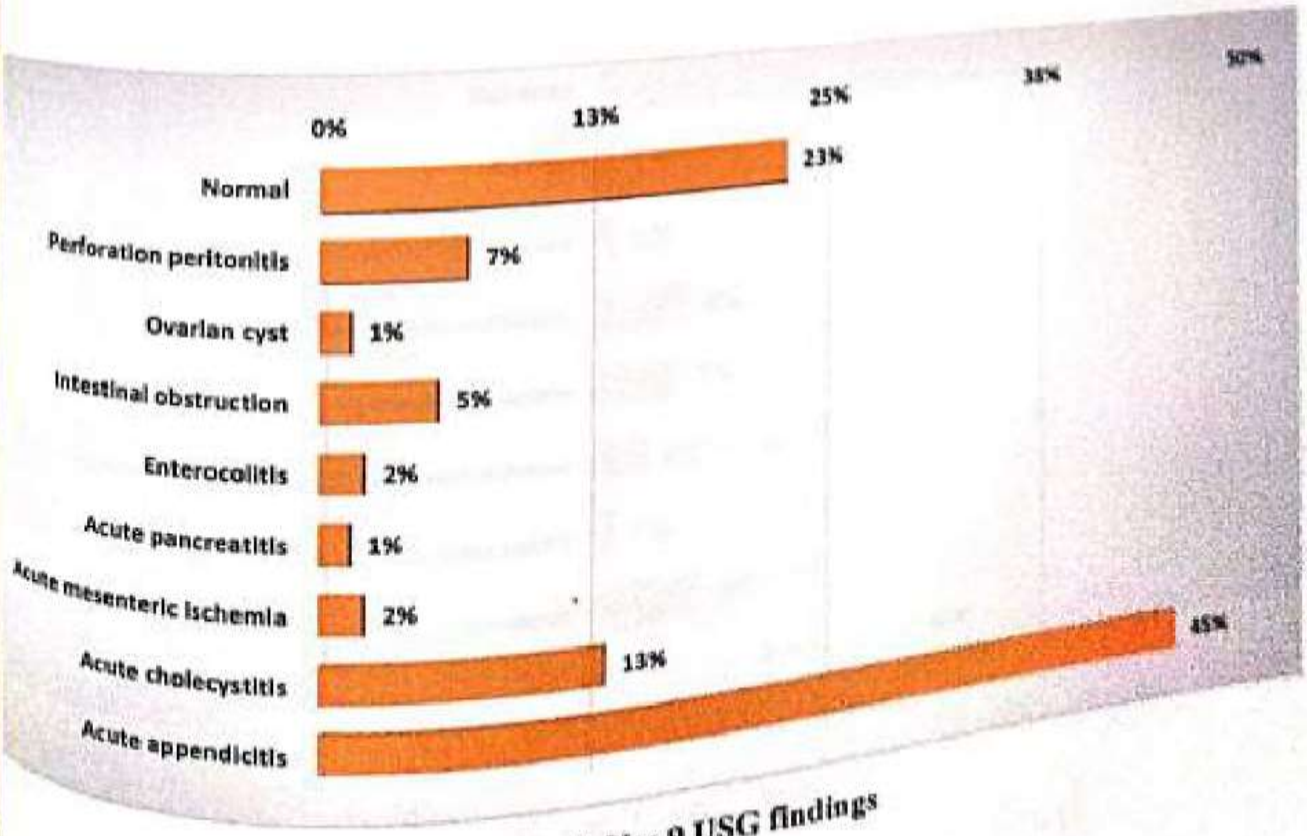
X-ray distribution among study subjects showed that 76% had normal X-ray, 14.7% had perforation peritonitis, 9.3% had intestinal obstruction.



Graph No: 8 X-ray distribution

USG findings	Frequency	Percent
Acute appendicitis	68	45.3
Acute cholecystitis	20	13.3
Acute mesenteric ischemia	3	2.0
Acute pancreatitis	2	1.3
Enterocolitis	3	2.0
Intestinal obstruction	8	5.3
Ovarian cyst	2	1.3
Perforation peritonitis	10	6.7
Normal	34	22.7
Total	150	100

USG findings among study showed that 45.3% had Acute appendicitis, 13.3% had acute cholecystitis, 6.7% had Perforation peritonitis, 5.3% had Intestinal obstruction, 2% had enterocoloitis and 1.3% each had ovarian cyst and acute mesenteric pancreatitis.

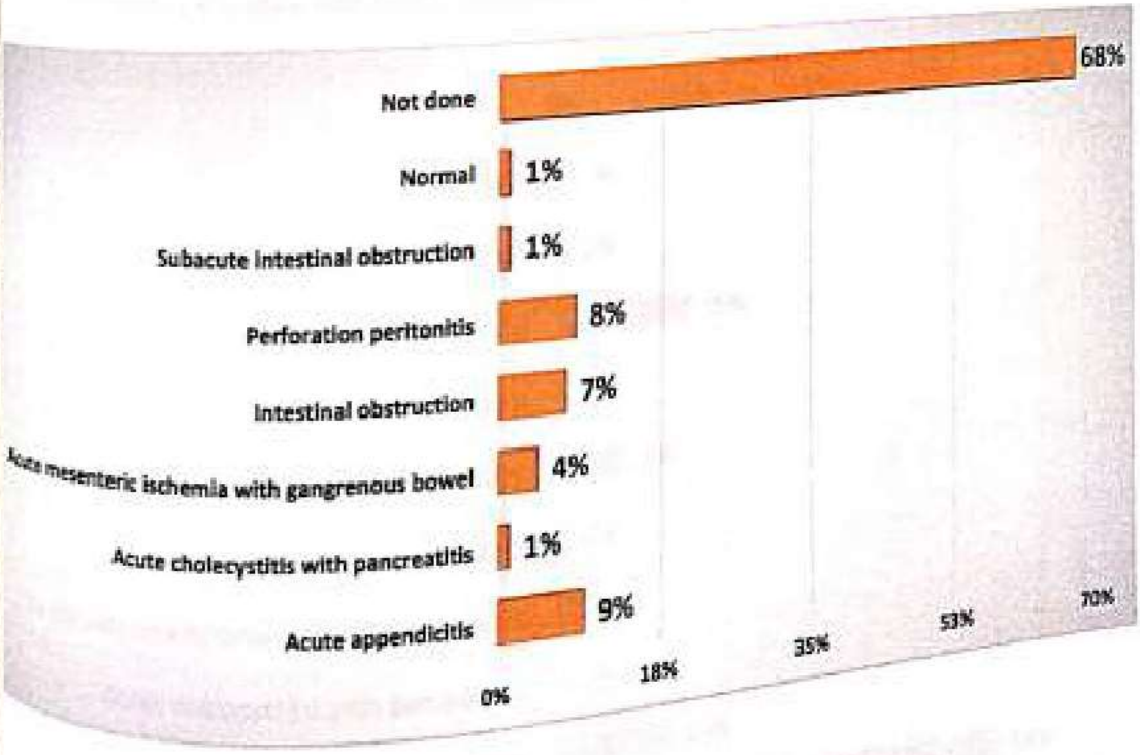


Graph No: 9 USG findings

Table 10: CT findings

CT findings	Frequency	Percent
Acute appendicitis	14	9%
Acute cholecystitis with pancreatitis	2	1%
Acute mesenteric ischemia with gangrenous bowel	6	4%
Intestinal obstruction	10	7%
Perforation peritonitis	12	8%
Subacute intestinal obstruction	2	1%
Normal	2	1%
Not done	102	68%
Total	150	100%

CT findings among study subjects showed that 9% had acute appendicitis, 8% had Perforation peritonitis, 7% had Intestinal obstruction, 4% had Acute mesenteric ischemia with gangrenous bowel and 1% each had Acute cholecystitis with pancreatitis and Subacute intestinal obstruction.

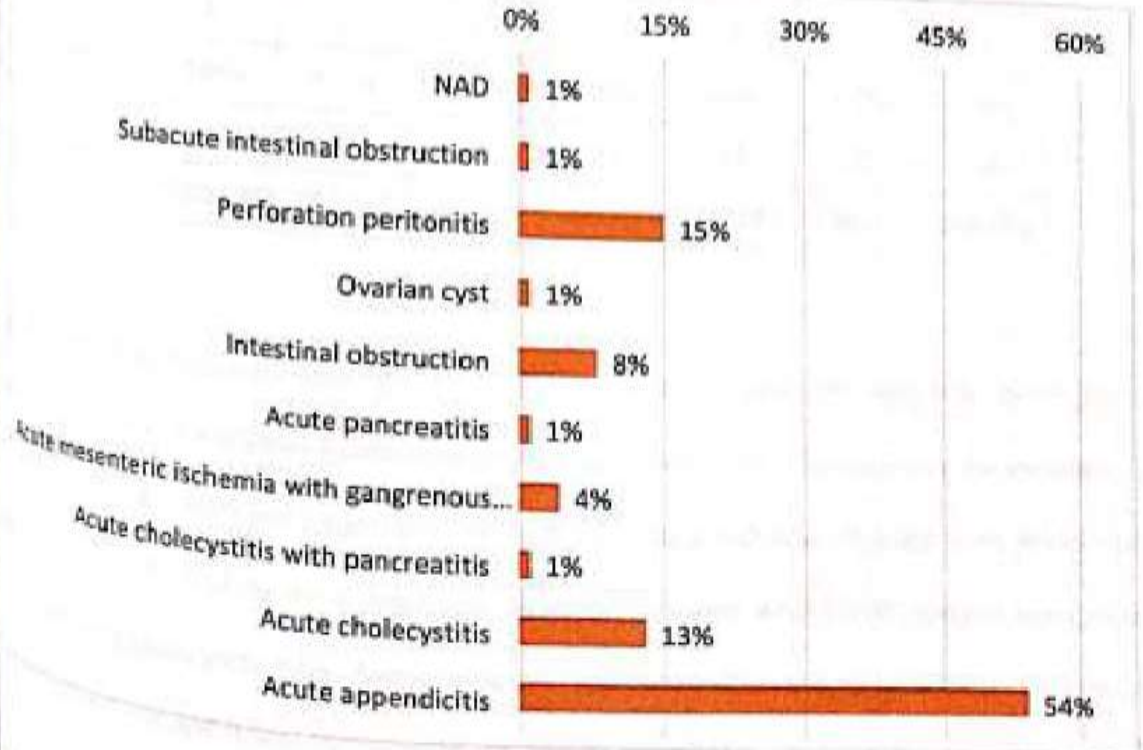


Graph No: 10 CT finding

Table 11: Radiological findings

Radiological findings	Frequency	Percent
Acute appendicitis	81	54%
Acute cholecystitis	19	13%
Acute cholecystitis with pancreatitis	2	1%
Acute mesenteric ischemia with gangrenous bowel	6	4%
Acute pancreatitis	2	1%
Intestinal obstruction	12	8%
Ovarian cyst	2	1%
Perforation peritonitis	22	15%
Subacute intestinal obstruction	2	1%
NAD	2	1%
Total	150	100%

Radiological findings showed that 54% had Acute appendicitis, 15% had Perforation peritonitis, 13% had Acute cholecystitis, 8% had intestinal obstruction, 4% had Acute mesenteric ischemia with gangrenous bowel, 1% each had Acute pancreatitis, Ovarian cyst and Subacute intestinal obstruction.



Graph No: 11 Radiological findings

Clinical diagnosis	Age distribution						Total
	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years	66-75 years	
Acute appendicitis	6	34	25	10	2	4	81
	100.0%	69.4%	67.6%	55.6%	11.1%	18.2%	53.6%
Acute cholecystitis	0	9	4	2	2	0	17
	0.0%	18.4%	10.8%	11.1%	11.1%	0.0%	11.3%
Acute mesenteric ischemia	0	0	0	0	2	0	2
	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	1.3%
Acute pancreatitis	0	0	0	0	4	0	4
	0.0%	0.0%	0.0%	0.0%	22.2%	0.0%	2.6%
Enterocolitis	0	2	0	0	2	4	8
	0.0%	4.1%	0.0%	0.0%	11.1%	18.2%	5.3%
Intestinal obstruction	0	0	2	2	2	4	10
	0.0%	0.0%	5.4%	11.1%	11.1%	18.2%	6.6%
Perforation peritonitis	0	2	4	4	4	10	24
	0.0%	4.1%	10.8%	22.2%	22.2%	45.5%	15.9%
Ureteric calculi	0	2	2	0	0	0	4
	0.0%	4.1%	5.4%	0.0%	0.0%	0.0%	2.6%
Total	6	49	37	18	18	22	150
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Age distribution and clinical diagnosis showed that maximum cases 49 were b/w 26-35 years age group and maximum 69.4% had Acute appendicitis, followed by 18.4% had Acute cholecystitis. Then 37 cases were 36-45 years and majority 67.6% had Acute appendicitis, 18 cases were 46-56 years of age group and 55.6% had Acute appendicitis. Whereas 18 cases were 56-65 years of age group and 22.2% had Perforation peritonitis. Association b/w age distribution and clincial diagnosis was tested using chi square test and it was statistically significant ($p<0.01$).

Table 13: Age distribution and Radiological diagnosis

Radiological diagnosis	Age distribution						
	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years	66-75 years	Total
Acute appendicitis	6	34	25	10	2	4	81
	100.0%	69.4%	67.6%	55.6%	11.1%	18.2%	53.6%
Acute cholecystitis	0	11	4	2	2	0	19
	0.0%	22.4%	10.8%	11.1%	11.1%	0.0%	12.6%
Acute cholecystitis with pancreatitis	0	0	0	0	2	0	2
	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	1.3%
Acute mesenteric ischemia with gangrenous bowel	0	0	2	0	2	2	6
	0.0%	0.0%	5.4%	0.0%	11.1%	9.1%	4.0%
Acute pancreatitis	0	0	0	0	2	0	2
	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	1.3%
Intestinal obstruction	0	0	0	2	2	8	12
	0.0%	0.0%	0.0%	11.1%	11.1%	36.4%	7.9%
NAD	0	2	0	0	0	0	2
	0.0%	4.1%	0.0%	0.0%	0.0%	0.0%	1.3%
Ovarian cyst	0	0	2	0	0	0	2
	0.0%	0.0%	5.4%	0.0%	0.0%	0.0%	1.3%
Perforation peritonitis	0	2	4	4	4	8	22
	0.0%	4.1%	10.8%	22.2%	22.2%	36.4%	14.6%
Subacute intestinal obstruction	0	0	0	0	2	0	2
	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	1.3%
Total	6	49	37	18	18	22	151
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Age distribution and radiological diagnosis showed that maximum cases 49 were b/w 26-35 years age group and maximum 69.4% had Acute appendicitis, followed by 22.4% had Acute cholecystitis. Then 37 cases were 36-45 years and majority 67.6% had Acute appendicitis, 18 cases were 46-56 years of age group and 55.6% had Acute appendicitis. Whereas 18 cases were 56-65 years of age group and 36.4% had Perforation peritonitis. Association b/w age distribution and Radiological diagnosis was tested using chi square test and it was statistically significant ($p<0.01$).

Clinical diagnosis	X ray findings			Total
	Intestinal obstruction	Normal	Perforation peritonitis	
Acute appendicitis	8	64	9	81
	9.9%	79%	11.1%	100.0%
Acute cholecystitis	3	12	2	17
	17.6%	70.6%	11.8%	100.0%
Acute mesenteric ischemia	0	2	0	2
	0.0%	100.0%	0.0%	100.0%
Acute pancreatitis	1	3	0	4
	25.0%	75.0%	0.0%	100.0%
Enterocolitis	0	5	3	8
	0.0%	62.5%	37.5%	100.0%
Intestinal obstruction	1	6	3	10
	10.0%	60.0%	30.0%	100.0%
Perforation peritonitis	1	18	5	24
	4.2%	75.0%	20.8%	100.0%
Ureteric calculi	0	4	0	4
	0.0%	100.0%	0.0%	100.0%
Total	14	114	22	150
	9.3%	77.2%	14.7%	100.0%

...nal diagnosis showed that maximum 81 cases had Acute appendicitis of that 79% were normal ...-ray findings, 11.1% had Perforation peritonitis and 9.9% had Intestinal obstruction. 24 cases had ...ration peritonitis as clinical diagnosis of that 20.8% had Perforation peritonitis, 4.2% had ...nal obstruction in X-ray findings. 17 cases had Acute cholecystitis as clinical diagnosis of that ...% had Perforation peritonitis, 17.6% had Intestinal obstruction in X-ray findings. Association ...een clinical diagnosis and X-ray findings was tested using chi square test and it was statistically ...ificant (p<0.05).

Table 15: Clinical diagnosis Vs USG findings

Clinical diagnosis	USG findings									
	Acute appendicitis	Acute cholecystitis	Acute mesenteric ischemia	Acute pancreatitis	Enterocolitis	Intestinal obstruction	Normal	Ovarian cyst	Perforation peritonitis	Total
Acute appendicitis	38	12	1	1	0	5	30	2	2	81
	46.90%	14.80%	1.20%	1.20%	0.00%	6.20%	25%	2.50%	2.50%	100.00 %
acute cholecystitis	8	1	0	0	2	1	4	0	2	17
	47.10%	5.90%	0.00%	0.00%	11.80%	5.90%	18%	0.00%	11.80%	100.00 %
Acute mesenteric ischemia	1	0	0	0	0	0	1	0	0	2
	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50%	0.00%	0.00%	100.00 %
Acute pancreatitis	2	1	0	0	0	1	0	0	0	4
	50.00%	25.00%	0.00%	0.00%	0.00%	25.00%	0%	0.00%	0.00%	100.00 %
Enterocolitis	2	1	0	0	0	0	3	0	2	8
	25.00%	12.50%	0.00%	0.00%	0.00%	0.00%	25%	0.00%	25.00%	100.00 %
Intestinal obstruction	4	1	0	0	0	1	3	0	2	10
	40.00%	10.00%	0.00%	0.00%	0.00%	10.00%	20%	0.00%	20.00%	100.00 %
Perforation peritonitis	11	3	1	1	1	0	6	0	2	24
	45.80%	12.50%	4.20%	4.20%	4.20%	0.00%	21%	0.00%	8.30%	100.00 %
Uretric calculi	2	1	0	0	0	0	1	0	0	4
	50.00%	25.00%	0.00%	0.00%	0.00%	0.00%	25%	0.00%	0.00%	100.00 %
Total	68	20	3	2	3	8	50	2	10	150
	45.30%	13.30%	2.00%	1.30%	2.00%	5.30%	23%	1.30%	6.70%	100.00 %

Clinical diagnosis Vs USG findings showed that maximum 81 cases had Acute appendicitis of that 46.9% had acute appendicitis in USG findings, 14.8% had Perforation cholecystitis and 3.7% had intestinal obstruction. 24 cases had Perforation peritonitis as clinical diagnosis of that 45.8% had

Perforation peritonitis and 12.5% had Acute cholecystitis in USG findings. 17 cases had Acute cholecystitis as clinical diagnosis of that 47.1% had acute appendicitis in USG findings. Association b/w clinical diagnosis and USG findings was tested using chi square test and it was statistically not

significant ($p>0.05$).

DISCUSSION

Discussion

The present study has been conducted to assess the role of clinical acumen and radiological investigation to arrive at an accurate diagnosis of acute abdominal

conditions.

In present study the mean age of study subjects was 45±15.6 years. Majority around one-third (32.7%) were b/w 26-35 years, followed by 24.7% were b/w 36-45 years. Whereas among cases 67% were female and 33% were male.

Chhetri RK et al (2005) did a comparative study of pre-operative with operative diagnosis in acute abdomen. They reported that disease was most common in the age group 20-29 years with male predominance. [23]

Aijaz A et al (2008) Spectrum of Diseases in Patients with Non-Traumatic Acute Abdomen. They reported the incidence of acute abdomen (27.81%) in patients of 21- 30 years age group, followed by under 20 age group (25.59%) and 30-40 years age group (17.23%). There were (70.30%) males and (29.69%) females. [24]

Sharma N et al (2014) study correlation of radiological investigations with clinical findings in cases of abdominal mass in the paediatric age group. They reported that

male to female ratio was 2:1. [25]

In present study all cases had pain; majority 55% had pain at right iliac fossa, followed by 17% had diffuse pain and 14% had umbilical pain. Along with pain 73% had vomiting, 64% had anorexia, 45% had fever and 9% had constipation.

SN Shirbur et al (2019) study the clinical and radiological correlation with operative findings in acute abdomen. Out of total 60 patients pain abdomen was the leading symptom present in 60 patients, followed by vomiting in 43 patients and fever in 17 patients, abdominal distension in 9, constipation in 2 patients and diarrhea in 5 patients. [29]

Sharma P et al (2023) did a comparative study between clinical diagnosis, plain radiography and sonography for the diagnosis of nontraumatic acute abdomen. Among study subjects all had pain, 92% had vomiting, 32% had abdominal distension, 28% had anorexia, 22% had fever and 22% had constipation.[31]

In present study distribution of clinical signs among study subjects showed that 99% had tenderness, 75% had bowel sound, 42% had rebound tenderness, 34% had tachycardia, 21% had guarding/rigidity, 18% had distension and 13% had murphys tenderness.

Ali MZ et al (2019) study the comparative analysis of clinical, radiological and operative findings in acute abdomen. Out of total 60 patients' tenderness was the leading sign present in 58 patients, followed by guarding in 23 patients and decreased/sluggish bowel sounds in 20 patients, abdominal distension in 17 patients,rigidity in 16 patients, free fluid in the abdomen in 4 patients, rise in temperature in 2 patients and liver dullness obliteration in 2 patients. [30]

Prabhu R et al (2018) did a study of correlation between clinical, radiological and pathological diagnosis of appendicitis. Total of 237 patients with acute abdominal pain were included and evaluated. 94% had tenderness, 71% had bowel sound, 38% had rebound tenderness, 31% had tachycardia, 18% had guarding/rigidity, 14% had distension and 11% had murphys tenderness [28]

In present among study subjects 39% had deranged TLC, 6% had deranged Sr. Lipase and 3% had deranged Sr. Amylase.

Bhavinder Arora, et al. (2015) Comparative Analysis of Clinical, Radiological and Operative Findings in Acute Abdomen. A total of 59(47.2%) patients had raised total leucocyte count and differential leukocyte count was raised in 86(68.8%) patients (p= .0092). [26]

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In present study the clinical diagnosis among study subjects showed that 54% had acute appendicitis, 16% had perforation peritonitis, 11.33% had acute cholecystitis, 6.67% had intestinal obstruction, and 5.33% had enterocolitis.

Ali MZ et al (2019) study the comparative analysis of clinical, radiological and operative findings in acute abdomen. Out of total 60 patients clinically 55% patients were diagnosed as acute appendicitis, 36.7% patients were diagnosed as hollow viscus perforation, 8.3% patients were diagnosed as intestinal obstruction [30]

Arora B et al (2015) did comparative analysis of clinical, radiological and operative findings in acute abdomen. Acute appendicitis was the most common cause of acute abdomen, accounting for 55(44%) cases. Second commonest cause for acute abdomen was perforation peritonitis 38(30.4%), which include peptic perforation and intestinal perforation. Less commoner diagnosis for acute abdomen were intestinal obstruction 24(19.2%) and mesenteric ischemic disease accounting for total of 8(6.4%) cases. [26] In present study X-ray findings among study subjects showed that 76% had normal X- ray, 14.7% perforation peritonitis, 9.3% intestinal obstruction.

Collins, N et al (2023) study the role of Plain Abdominal X-Ray in the Differential Diagnosis of Common Acute Abdominal Conditions. Differential diagnosis made with the plain abdominal x-ray were intestinal obstruction in 74.6%, perforated viscus 17.2% patients, intra-abdominal masses 3.2% patients and location of intra-abdominal foreign body 3.5. [32]

Sharma P. Comparative study between clinical diagnosis, plain radiography and sonography for the diagnosis of nontraumatic acute abdomen. Out of the 30 clinically diagnosed acute appendicitis cases, 29 cases (96.6%) were found to have acute appendicitis intraoperatively. In 10 acute generalized peritonitis x-ray had done correct clinical diagnosis in all cases (100%). In acute intestinal obstruction out of the 11 cases, eight cases (72.7%) were diagnosed correct clinically. [31]

In present study USG findings among study showed that 45.3% Acute appendicitis, 13.3% acute cholecystitis, 12% ovarian cyst, 2.7% enterocoloitis and 1.3% each Acute pancreatitis and Acute mesenteric ischemia.

Sharma P. Comparative study between clinical diagnosis, plain radiography and sonography for the diagnosis of nontraumatic acute abdomen. Sonography findings were seen in 38 (76%) patients out of 50 patients. It was able to diagnose correctly 18 (62.06%) patients out 29 cases of acute appendicitis. Free fluid was found in 16 (326) of patients. Dilated bowel loops were observed in eight (72.7%) patients out of 11 cases of acute intestinal obstruction. [31]

CT findings among study subjects showed that 9% had acute appendicitis. 8% had Perforation peritonitis. 7% had Intestinal obstruction, 4% had Acute mesenteric ischemia with gangrenous bowel and 1% each had Acute cholecystitis with pancreatitis and Subacute intestinal obstruction.

Bhavinder Arora, et al. (2015) Comparative Analysis of Clinical, Radiological and Operative Findings in Acute Abdomen. CT findings among study subjects showed that 13% had acute appendicitis, 22% had Perforation peritonitis, 9% had Intestinal obstruction, 7% had Acute mesenteric ischemia. [26]

In

present study radiological findings showed that 54% had Acute appendicitis, 15% Perforation peritonitis, 13% Acute cholecystitis, 8% intestinal obstruction, 4% Acute mesenteric ischemia with gangrenous bowel. 1% each Acute pancreatitis, Ovarian cyst and Subacute intestinal obstruction.

SN Shirbur et al (2019) study the clinical and radiological correlation with operative findings in acute abdomen. Total 60 cases radiological findings showed that 48% had

Acute appendicitis, 21% Perforation peritonitis, 8% Acute cholecystitis, 5% intestinal obstruction, 2% Acute mesenteric ischemia with gangrenous bowel. [29]

Ali MZ et al (2019) study the comparative analysis of clinical, radiological and operative findings in acute abdomen. Radiological accurately diagnosed acute appendicitis in 74.2%, hollow viscus perforation in 50%, and intestinal obstruction in 60% of patients. 95% clinical accuracy was found when compared to intra operative diagnosis. Kappa is 0.912 ($p<0.0001$). [30]

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ABBREVIATIONS

LIST OF ABBREVIATIONS

1. AXR: Plain abdominal X-ray erect 2. CXR: Plain chest X-ray

3. CT: Computer Tomography scan

4. CECT: Contrast Enhanced Computer Tomography Scan

5. USG: Ultrasonography

6. MRI: Magnetic resonance imaging 7. Hb: Hemoglobin

8. TLC: Total Leukocyte Count 9. WBC: White Blood Cell count 10. PT Prothrombin Time

11. INR International Normalised ratio

12. LFT: Liver Function Test

13. SGOT Serum glutamic oxaloacetic transaminase

14. SGPT Serum glutamic pyruvic transaminase

15. ABG: Arterial blood gas analysis

16. eg: Example; b/w :- between

17. SPSS Statistical Package for the Social Science

18. cm Centimeter

19. mm Millimeter

20. m Meter

21. IV: Intra-venous

22. TPN: Total parenteral nutrition

23. HIV Human immunodeficiency virus

24. SMA: Superior mesenteric artery

25. GIT: Gastro-intestinal tract

26. KUB Kidney, Ureter, Bladder

27. IP No. In patient number

28. MRN: Medical record number

29. DOA: Date of admission

30. DOO: Date of operation

31. DOD: Date of discharge

32. H/O: History of

33. BMI: Body mass index 34. Sr: Serum

35. In master chart- Y: Present

N: Absent

Bowel sound Y: Present

N: Absent

S: Sluggish

E: Exaggerated