## *Al_nahrian university college of medicine*


# *Management of acute abdominal pain*

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**Class of : 2018 - 2019**

# Acknowledgement

**I would like to dedicate this research to my family for their support and loved all my six years and to my doctors who teach me , and thank's to my supervisor Dr.TAQI**

**For his help . with me in this research thank you a lot with out you this study would not be completed .and I also would like to thank the stuff of the hospital who helped me at the emergency with surgical medical and Gynecologcal floors .finally I'd like thank my husband Hussain for his love and helped and my baby Ali for his helped !**

**THANK YOU ALL**
**With all my love.**

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# *Abstract*

## Background :

**Abdominal pain is a common presentation that requires almost immediate management within first 24 hours. It is almost crucial to diagnose at the earliest time and make a decision as to operate.**

## patient and method:

A prospective study for patients admitted to admitted to AL_imamain al kadhmia teaching hospital (emergency department) who complain of acute abdomen were collected during time period from 1/11/2018 to 1/1/2019 . appropriate history and physical examination done for all patients .

## Rsults:

**The total cases collected "100" case the result were according to the age from (1-69) years and the most common age group is (20-29) , and according to the sex the female was more incidence than male , "20" cases were discharge at the same day and "80" cases were admitted to be treated , according to cause acute appendicitis "48%" was the most common cause ,according to geographical distribution Al shua'la was the most common area .**

## CONCLUSION:

**The most common cause of acute abdominal pain is appendicitis most of cases required surgical intervention the decision to operate is based on the result of agood history and physical examination with the guidance of investigation.**



## key words:

**acute abdominal pain.**

# Introduction

## Acute abdomen

**Acute abdominal pain is pain that may necessities surgical intervention within first 24 hour …[1]**

- **pathophysiology**

**The abdominal wall and parietal peritoneum are supplied by the somatic nervous system, while the abdominal organs and visceral peritoneum are innervated by the autonomic nervous system[2]. Therefore pain will appear to change in position and nature as the underlying pathology spreads from a local intraperitoneal structure to the parietal peritoneum.The skin and the muscles of the abdominal wall are supplied by the lateral and anterior cutaneous branches of the lower six intercostal nerves and the iliohypogastric and ilioinguinal nerve The dermatome levels of the xiphoid process umbilicus and pubis are T7, T10 and T12, respectively. The parietal peritoneum is supplied segmentally by the same nerves that innervate the overlying muscles[2]**

**The central part of the diaphragmatic peritoneum is supplied by the phrenic nerve (C4); therefore, pain arising in this region is referred to the tip of the shoulder as it has the same segmental supply. The peripheral rim of the diaphragmatic peritoneum is supplied by the intercostal nerves. The obturator nerve is the chief nerve supply of the pelvic parietal peritoneumPain from the viscera is principally due to ischaemia, muscle spasm and stretching of the visceral peritoneum. Unlike somatic pain, autonomic pain is deep and poorly localised.[2]**

**This pain is transmitted via sympathetic fibres and so is referred to the appropriate somatic distribution of that nerve root from T1 to L2 (However, when an inflamed organ touches the parietal peritoneum, the pain becomes sharp and localises to the appropriate segmental dermatome of the abdominal wall. Pain arising from the parietal peritoneum may radiate to the back or the front along the appropriate dermatome. This referral pattern is classically seen in acute cholecystitis**

# *Causes of Acute abdominal pain*

## *A-Intraperitoneal Causes(3)*

1. ***congenital :*** *pyloric stenosis , biliary atresia, intestinal atresia.*
2. ***Inflamatory:*** *appendicitis , cholecystitis , peptic ulcer , pancreatitis.*
3. ***Traumatic:*** *bullet injury , blast injury , iatrogenic trauma.*
4. ***Neoplastic:*** *benign , malignant.*
5. ***Miscellous:*** *hematological , cardiac , endometriosis.*

## *B-Extra peritoneal causes(3)*

1. ***Cardiac:*** *myocardial ischemia , myocardial infraction.*
2. ***Respiratory:****pneumonia , empyema.*
3. ***Genitourinary:*** *pylonephritis , perinephric abscess , testicular torsion.*
4. ***Metabolic:*** *diabetic ketoacidosis.*
5. ***Hematological:*** *sickel cell.*

## *C-Retroperitoneal causes(3)*

***(diseases of the kidney, ureter , spine ,and retroperitoneal lymph nodes)***

1. **Congenital**
2. **Inflamatory: Tuberculosis of the spine.**
3. **Traumatic**

## *Clinical Evaluation*

### *History*

**A careful and methodical clinical history should be obtained Key features of the history include the dimensions of pain(i.e., mode of onset, duration, frequency, character, location, chronology, radiation, and intensity), as well as the presence or absence of any aggravating or alleviating factors and associated symptoms. Often such a history is more valuable than any single laboratory or x-ray finding and determines the course of subsequent evaluation and management[(2)].**

**The mode of onset of abdominal pain may help the examiner determine the severity of the underlying disease. Pain that has a sudden onset suggests an intra-abdominal catastrophe Rapidly progressive pain that becomes intensely centred in a well_defined area within a period of few minutes to an hour or two suggest as acute pancreatits or cholecystitis..Pain that usually beginning as slight or vague discomfort and slowly progressing to steady and more localized pain, suggests a subacute process and is characteristic of processes that lead to peritoneal inflammation. Numerous disorders may be associated with this mode of onset, including acute appendicitis, diverticulitis, pelvic inflammatory disease (PID), and intestinal obstruction.[(1)]**

# physical examination

**In the physical examination of a patient, as in the taking of the history, there is no substitute for organization and patience;The physical examination begins with a brief but thorough evaluation of the patient's general appearance and ability to answer questions. The degree of obvious pain should be estimated. The patient's position in bed should be notedThe area of maximal pain should be identified before the physical examination is begun. The examiner can easily do this by simply asking**

**the patient to cough and then to pointwith two fingers to the area where pain seems to be focused.[1]**

**however, does not necessarily exclude a serious intra-abdominal process. Examination of the abdomen begins with the patient resting in a comfortable supine position. . The examination should include inspection, auscultation, percussion, and palpation of all areas of the abdomen, the flanks, and the groin (including all hernia orifices) in addition to rectal and genital examinations (and, in female patients, a full gynecologic examination). A systematic approach is crucial: an examiner who methodically follows a set pattern of abdominal examination every time will be rewarded more frequently than one who improvises haphazardly with each patient. The first step in the abdominal examination is careful inspection of the anterior and posterior abdominal walls, the flanks, the perineum, and the genitalia for previous surgical scars (possible adhesions), hernias (incarceration or strangulation), distention (intestinal obstruction), obvious masses (distended gallbladder, abscesses, or tumors), ecchymosis or abrasions (trauma), striae (pregnancy or ascites), an everted umbilicus (increased intra-abdominal pressure),**

**In general, however, the absence of bowel sounds indicates a paralytic ileus; hyperactive or hypoactive bowel sounds often are variations of normal activity; and high-pitched bowel sounds with splashes, tinkles (echoing as in a large cavern), or rushes (prolonged, loud gurgles) indicate mechanical bowel obstruction. The third step is percussion to search for any areas of dullness, fluid collections, sections of gas-filled bowel, or pockets of free air under the abdominal wall. Tympany may be present in patients with bowel obstruction or hollow viscus perforation. Percussion can be useful as a way of estimating organ size and of determining the presence of ascites (signaled by a fluid wave or shifting dullness). Gentle percussion over the four quadrants of the abdomen can also be used to elicit a sign of peritoneal irritation, and patients tolerate this maneuver reasonably well[1]. Pain associated with mild levels of percussion is a good indicator of peritonitis if the maneuver is performed in the same way each time. In general, however, maneuvers associated with palpation are best for determining whether peritonitis is present. The last step, palpation, is the most informative aspect of the physical examination. Palpation of the abdomen must be done very gently to avoid causing additional pain early in the examination. It should**

**begin as far as possible from the area of maximal pain and then should gradually advance toward this area, which should be the last to be palpated. The examiner should place the entire hand on the patient's abdomen with the fingers together and extended, applying pressure with the pulps (not the tips) of the fingers by flexing the wrists and the metacarpophalangeal joints. It is essential to determine whether true involuntary muscle guarding (muscle spasm) is present. This determination is made by means of gentle palpation over the abdominal wall while the patient takes a long, deep breath. If guarding is voluntary, the underlying muscle immediately relaxes under the gentle pressure of the palpating hand.[(1)]**

**Although a carefully performed pelvic examination can be invaluable in differentiating nonsurgical conditions (e.g., pelvic inflammatory disease and tubo-ovarian abscess) from conditions necessitating prompt operation (e.g., acute appendicitis), the possibility that a surgical condition is present should not be prematurely dismissed solely on the basis of a finding of tenderness on a pelvic or rectal examination. with other conditions (e.g., intestinal obstruction, mesenteric thrombosis, and perforated ulcer). Urinalysis may reveal red blood cells (RBCs) (suggestive of renal or ureteral calculi), WBCs (suggestive of urinary tract infection or infl ammatory processes adjacent to the ureters,[(1)]**

## Investigative Studies

**Laboratory tests and imaging studies rarely, if ever, establish a definitive diagnosis by themselves; however, if used in the correct clinical setting, they can confirm or exclude specific diagnoses suggested by the history and the physical examination. [(1)]**

## Aim of the study:_

**To find out the most common cause of acute abdominal pain in this study .**

## *patient and Methods :*

**A prospective study for patients admitted to admitted to AL_imamain al kadhmia teaching hospital (emergency department) who complain of acute abdomen were collected during time period from 1/11/2018 to 1/1/2019 .Proper history and appropriate physical examination done for all patients according to this formula**

**The data contains :**

- **Name**
- **Age**
- **Sex**
- **address**
- **Date of admissiom**
- **Date of history taking**
- **Chief complaint**
- **History of presenting illness contains :_ pain, onset,site,character , radiation , aggrevating and relieving factors and the associated symptoms..**
- **Systemic review including : the cardiovascular, gastrointestinal ,respiratory , genitourinary, skeletal and neurological system.**

- **Investigation :**

**If any ultrasound done WBC , urea and creatinine PCV ,urinalysis, serum amylase .**

- **Past medical history and past surgical history .**

**And to be able to distinguish if the patient require medical therapy or only treated conservatively or needed admission for surgical intervention this is done by taking full history and examination and full analysis.**

**The patiants were followed from their entry to the emergancy room ( whether they were admitted to the hospital or not ) and then to the surgical ,medical ,or gynecological ward accordingly , their time of staying the hospital was recorded and the date of discharge was taken .**

- ✓ **The "SPSS" version 20 computer program was used to helped doing the statistical part of the research and the below variables were entered**

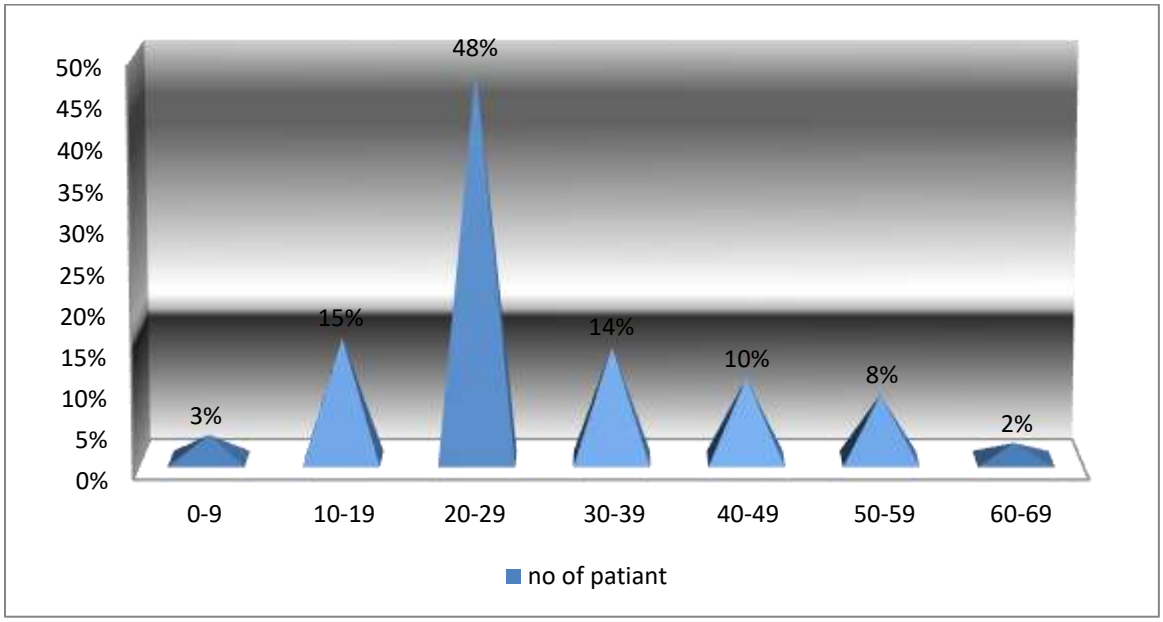
- Number of the patient.
- Gender,Male or Female.
- The age divided into groups (0-9), (10-19), (20-29), (30-39), (40-49), (50-59), (60-69), (70-79) 80 and above.
- The residency areas: Al Shu'la, Sade' El boor, Al Taji , AlHurria, Al Kahdhmia, and other areas.
- The site of pain : Right iliac fossa, Left iliac fossa, Right hypochondrial , Left hypochondrial, Right lumbar, Left lumbar, Epigastric, Umbilical, Hypogastric, and generalized.
- The radiation posative or nagative.
- Type of pain: Continuous or intermittent.
- Rigidity on examination:present or absent.
- Tenderness:present or not.
- Primary diagnosis: Appendicitis, Cholecystitis, Pancreatitis, Intestinal obstruction, Renal colic, Mesentric ischemia, Acute gynecological condition, Diverticulitis, other medical causes.
- Fate of the patient: Surgery floor, Medical floor, Gynecological floor, Discharged or dead.
- Operation done or not.

# *Result*

**The total cases collected "100" case the result were according to the age from (0 to79) years and according to the sex female cases with more incidence than male cases "20" cases were discharged at the same day and "80" of cases were admitted to be treated advanced cases "10" cases were admitted to the gynecological wards "6" cases were admitted to the medical wards about "64" cases were admitted to the surgical department to be treated as conservative or as operative and cases were taken according to the geographical distribution which are AL_taji, Al_kadhmia ,, al shoula , al chocok , al houria**

**Table 1 :_ shows the incidence of patient with acute abdominal according to the age**

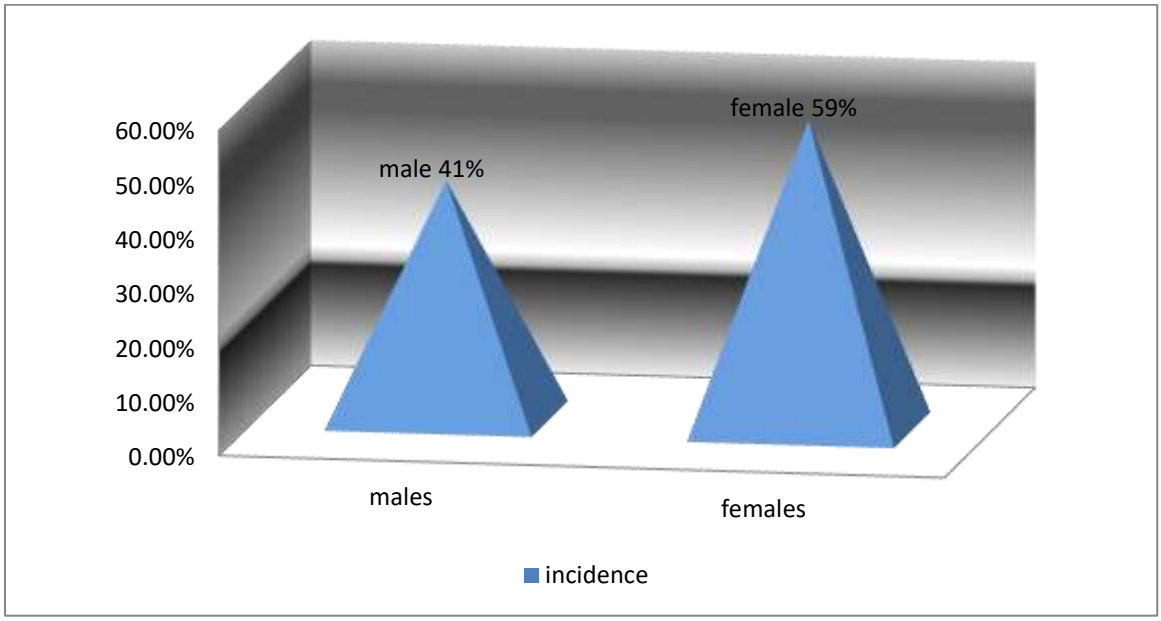
| Age | NO.of patients | Incidence |
|---|---|---|
| (1_9) | 3 | 3% |
| (10_19) | 15 | 15% |
| (20_29) | 48 | 48% |
| (30_39) | 14 | 14% |
| (40_49) | 10 | 10% |
| (50_59) | 8 | 8% |
| (60-69) | 2 | 2% |
| total | 100 | |




**Figure(1): shows the incidence of patient with acute abdominal according to the age**

**Table 2:_ shows the cases of acute abdomen according to the sex**

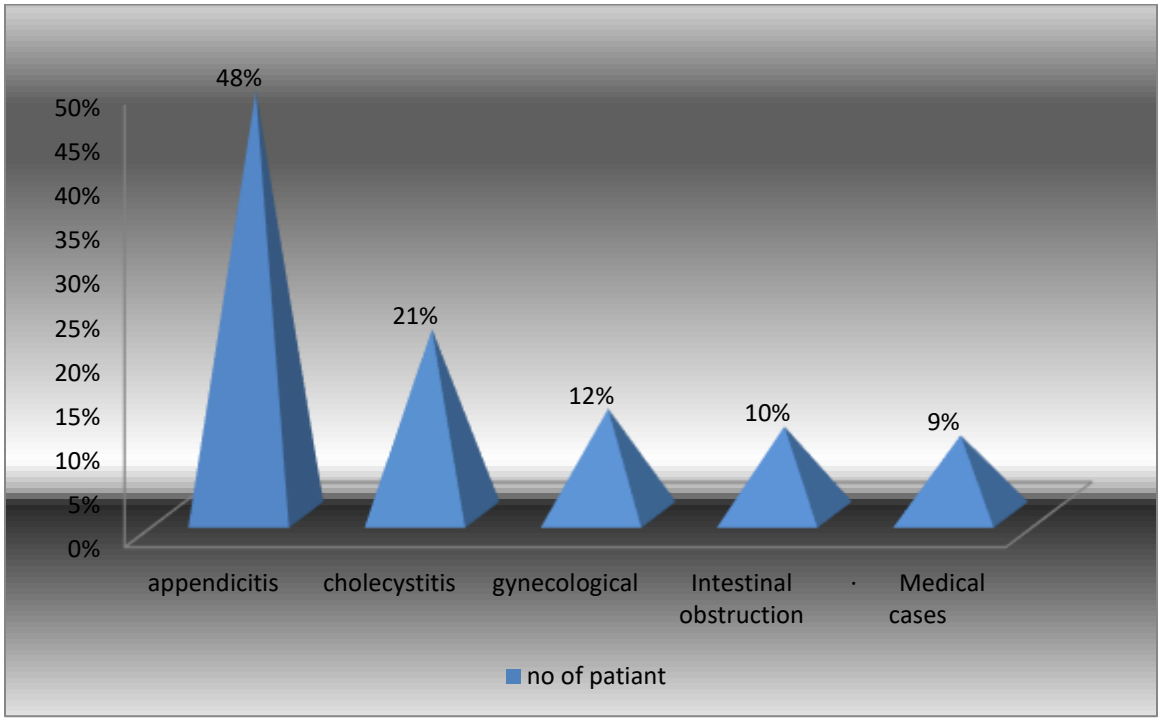
| gendre | Number | Incidence |
|---|---|---|
| Male | 59 | 59% |
| female | 41 | 41% |
| total | 100 | |




**Figure(2): shows the cases of acute abdomen according to the sex**

**Table 3 :_ shows the incidence of cases according to the causes of acute abdomen**

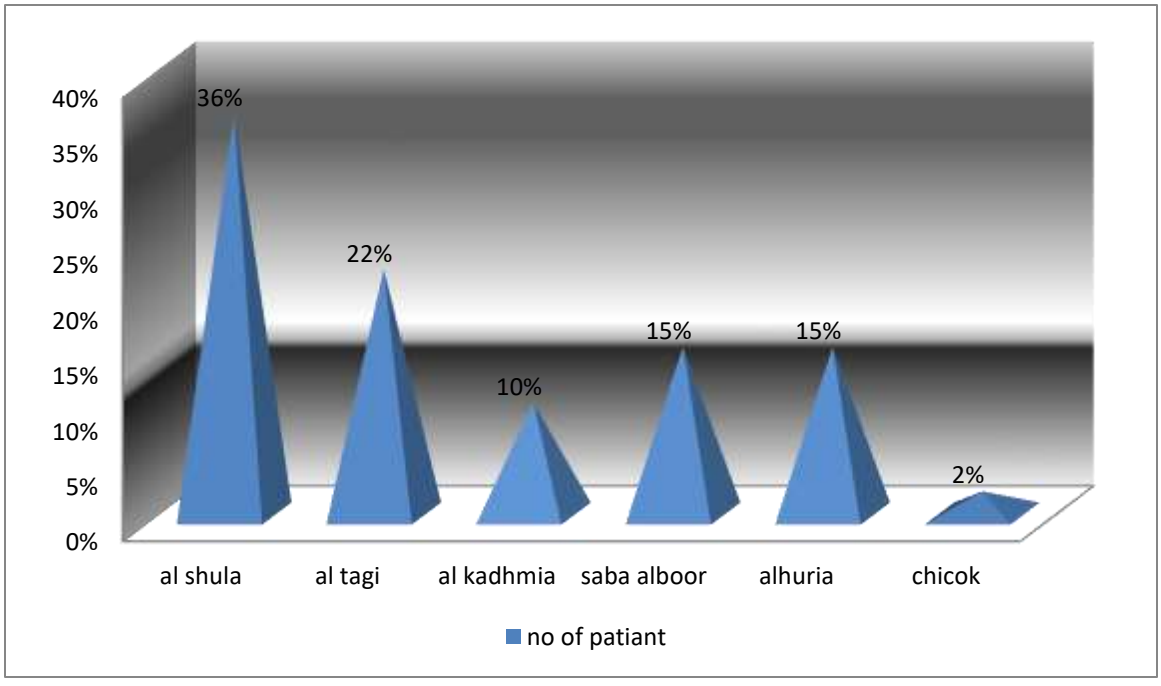
| ddx | Number of patients | Incidence |
|---|---|---|
| appendicitis | 48% | 48% |
| cholecystitis | 21 | 21% |
| gynecological | 12% | 12% |
| Intestinal obstruction | 10 | 10% |
| • Medical cases<br>1. Renal pain<br>2. Myocardial infarction | <br>6<br>3 | <br>6%<br>3% |




**Figure(3): shows the incidence of cases according to the causes of acute abdomen**

**Table 4 :_ shows geographical distribution of cases of acute abdomen**

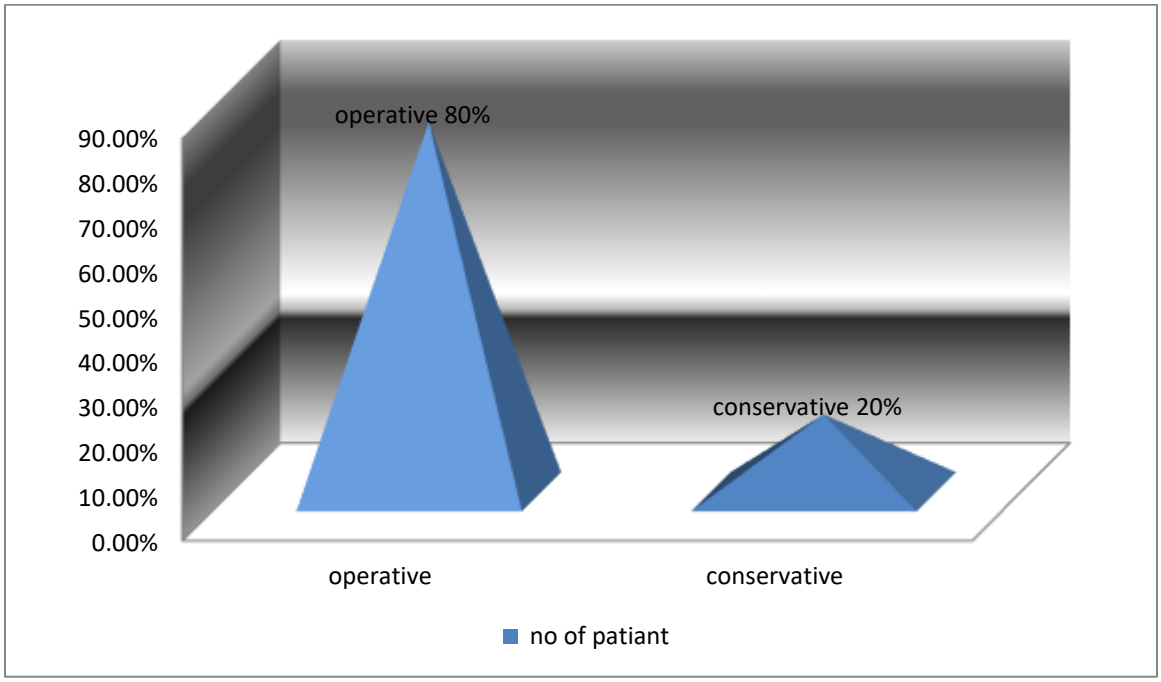
| Area | No .. of patients | Incidence |
|---|---|---|
| Al shula | 36 | 36% |
| Al tagi | 22 | 22% |
| Al kadhmia | 10 | 10% |
| Saba' alboore | 15 | 15% |
| Al huria | 15 | 15% |
| chicok | 2 | 2% |




**Figure(4): shows geographical distribution of cases of acute abdomen**

**Table 5:_ shows the incidence of patients that required surgical treatment or conservative**

| Type of management | No . of patients | Incidence |
|---|---|---|
| operative | 80 | 80% |
| conservative | 20 | 20% |
| | | |




**Figure(5): shows the incidence of patients that required surgical treatment or conservative**

## DISSCUTION

**By this study of my research in"100" cases were collected from AL_Imamain Al_kadhmain teaching hospital was found that the most common cause of acute abdominal pain was (appendicitis) the incidence were about 48% which are 48 cases which is resembiling a study done in " GREEK UNIVERSITY HOSPITAL " but differ in percent hence it was 37,6% and almost all cases needed surgical intervention only about 8 cases required conservative treatment regarding appendicitis..**

**In our study the highest incidence of acute abdominal pain was between the age of (20_29) was 48% and which is about the same study conducted by " Canada medical teaching hospital " and The American Journal of Emergency Medicine in the study of University of Calgary Faculty of Medicine,**

**the highest incidence were in female which is about 69 of cases and incidence were about 69% because most of males joined the army or died because of explosions , and the number of females in our society are more than males.. according to the age group the children has number of 3 cases only because there are pediatric surgery department for these age group. From the age of (60_69) has only 2 cases and most of them referred to the medical wards .. and according to the geographical distribution the most common area are Al_shu'la because most referred cases from there ..**

**But in other study the most common cause of acute abdominal pain in the Society of Gastrointestinal Radiologists was**

**intestinal obstruction ..and as in other study of European Radiology the result were s (mean age 47; 55% female) were appendicitis (284; 28%), diverticulitis (118; 12%) and cholecystitis (52; 5%).in the study of Sina (tahran,Iran) were the same result in our study .other study in tikur anbessa teaching hospital the most common cause were also appendicitis incidence were 55.6%**

**Some of patient presented with abdominal pain and fever other patints presented with nausea vomiting ..the second most common cause of acute abdominal pain was cholecystitis incidence were (21%) all cases required surgical cholecystectomy, all causes were investigated by GUE ,WBC , and US, by increase WBC in appendicitis and presence of appendicular mass in US..**

**other medical causes such as myocardial infarction required only medical treatment discovered by abnormal ECG .. in other studies Patients will also most likely receive a complete blood count (or full blood count in the U.K.), looking for characteristic findings such as neutrophilia in appendicitis.**

**A 59-year-old man was admitted to our hospital because of right lower abdominal pain. He was suspected of having acute appendicitis and soon after admission, appendectomy was performed. Macroscopically, the appendix was greatly swollen and reddened, but had no abscess. Microscopically, polymorphonuclear leukocytes were not found, but diffuse infiltration of atypical cells was observed. Examination of a bone**

**marrow aspirate revealed 74% blasts that were peroxidase stain positive. We diagnosed acute myelogenous leukemia (FAB classification, M2). He received induction chemotherapy, but died 49 days after admission. Leukemic cell infiltration of the appendix is rare and acute appendicitis as the initial manifestation of leukemia is even rarer and this is a case in Sapporo hokuyu hospital other studies in Florence surgery unite was found most of cases has females with presentation of of endometriosis of the terminal ileum and appendix presenting as an acute surgical emergency is reported. At laparotomy, the macroscopic appearance of the lesion mimicked Crohn's disease. Pathological and clinical features as well as problems in the differential diagnosis of intestinal endometriosis are discussed. Other studies in Diaconessenhuis EINDHOVEN Netherland most of presentayions of acute abdominal pain due to intestinal infarction due to *ter Meulen P.H. · Repelaer van Driel O.J. · Ooms H.W.A.***

## CONCLUSION

**In this study the most common cause is appendicitis and the decision of operation was according to careful history taking and proper examination with presence of +ve abdominal signs .. such as rebound tenderness with proper investigations and imaging with the severity of pain and associated symptoms during the presentation.. the best modalities of imaging is ultrasound .. and the most common cases come from other area because our hospital was excellent in managing emergency cases and contain most medical specialties and various medical devices,**

**So I recommend building new hospitals at other regions providing them with capable staff and equipments to decrease the load on our hospital and to helped the patient from different area to reach faster and managed effectively.**

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