A TWO YEAR RETROSPECTIVE ANALYSIS OF PATTERN AND PREVALENCE OF ACUTE ABDOMEN IN JIMMA UNIVERSITY SPECIALIZED HOSPITAL, JIMMA, SOUTH WEST ETHIOPIA.

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(MEDICAL INTERN)

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JIMMA UNIVERSITY

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Abstract

Background: - Acute abdomen is one of the common clinical conditions.Acute abdomen is an acute onset of abdominal disease entities that require immediate surgical intervention in most of the cases. It's a medical slang for sudden abdominal symptoms consisting of most part of pain, vomiting, constipation and genitourinary function. The correct interpretation of acute abdomen is challenging, which requires immediate attention and prompt action, as many of the condition producing acute abdomen are potentially lethal. The diagnosis of acute abdomen is not easy. Abdominal symptoms are possibly the frequent of all symptoms encountered in surgical practice .Some of the common causes of acute abdomen are acute appendicitis, intestinal obstruction, perforated PUD, Volvulus and Intussusception. They require urgent treatment including emergency operation.

The most obvious of acute abdomens may not require operative intervention; on the other hand, the mildest of abdominal pain and other symptoms may require an urgent intervention. The leading cause of acute abdomen in several African countries was intestinal obstruction, where as acute appendicitis is top in the list of some studies.

Of the major gastrointestinal disorders, acute appendicitis was the most common condition, accounting for one third of the cases in Black Lion hospital.The presentation of different causes of acute abdomen overlap but there are some sig ns and symptoms that may help to narrow the differential diagnosis.

Objective: - To determine the causes of acute abdomen in JUSH, major causes morbidity and mortality, post op complications.

Methodology: - A retrospective analysis of all patients diagnosed to have acute abdomen and managed accordingly in JUSH from Meskerem 1, 2005 to Pagumae 6, 2006 E.C was undertaken. During the study period all consecutive adult patients admitted to our hospital emergency department with suspected acute abdomen and who subsequently had an operation done provide the study material for the study. A special proforms was

designed to record patient demographic details, clinical features, laboratory data, operative findings and outcome of treatment.

RESULT-There were a total of 1453 cases of acute abdomen registered on the surgical ward and OPD logbooks out of which 1201 cards are found making the response rate 82.65% out of this 68.25% patients are males. Most of them are out of Jimma town.The most common presenting symptom was abdominal pain (99.99 %) and the most common sign was abdominal tenderness (87.54%). The mean duration of illness when the patients arrive at hospital was 3 day. Blood group and hematocrit was the the commonly done investigation (91.03%) followed by abdominal X-ray (43.70%). The most common cause of acute abdomen was acute appendicitis (45.70%). Sepsis was the most common pot op complication (33.81 %) followed by pneumonia (19.56 %).

-The mean duration of hospital stay was7 day.

-There were 129 deaths related to acute abdomen.

-There was an association between duration of illness and post operative complication.

CONCLUSION-All in this study showed that the commonest cause of acute abdomen was acute appendicitis followed by intestinal obstruction.

-Post operative complications were more common in those patients who came late to hospital late.

Acknowledgement

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Definition of terms

Acute abdomen – acute presentation of a patient with acute abdominal conditions which need urgent surgical intervention.

Obstipation - Failure of a patient to pass feaces and flatus.

Constipation – Failure of a patient to pass feaces but can pass flatus.

Sepsis – a clinical syndrome that complicates severe infection and is Characterized by systemic inflammatory response syndrome and wide Spread tissue injury.

Hypotension- Blood pressure of a patient systolic < 90 mmHg and diastolic < 60 mmHg.

List of abbreviations

JUSH- Jimma University specialized Hospital

OPD - out patient department

U/S - Ultra sound

HCT - Hematocrite

B/F - Blood Film

CBC- Complete blood cell count

S/E - Stool Examination

U/A - Urine Analysis

PUD - Peptic Ulcer Disease

OR - Operation Room

GOO- Gastric outlet obstruction

PPUD- perforated peptic Ulcer disease

CHAPTER 1
Introduction

1.1 Background information

Jimma University teaching Hospital (JUTH) is one of the oldest public hospitals in the country. It was established in 1930 E.C by Italian invaders for the service of their soldiers. Geographically, it is located in Jimma city 352 km southwest of Addis Ababa. After the withdrawal of the colonial occupants, it has been governed under the Ethiopian government by the name of "**Ras Desta Damtew Hospital**" and later "**Jimma Hospital** "during Dergue regime and currently Jimma University Teaching Hospital.

Currently it is the only teaching and referral hospital in the southwestern part of the country, providing services for approximately 15,000 inpatient, 160,000 outpatient attendants, 11,000 emergency cases and 4500 deliveries in a year coming to the hospital from the catchment population of about 15 million people. Cognizant of the fast growing service and teaching role of the hospital, the federal government considered construction of a new and level- best 600 bedded hospital which' will be functional as of September 2015.

1.2. Statement of the problem

Acute abdomen is one of the common situations in clinical medicine which demand prompt and decisive action.

Acute condition of the abdomen are produced by inflammatory, obstructive and vascular mechanisms and are manifested by sudden onset of abdominal pain, vomiting, distention and varying degrees of local and systemic reaction. Some of the common causes are acute appendicitis, intestinal obstruction, perforated PUD, penetrating abdominal injuries and bullet injuries ruptured ectopic pregnancy, ovarian torsion and ruptured ovarian cyst. They require urgent treatment including emergency operation. For this to be accomplished there should be a good referral system and effective way of health communication. The health facilities should also be accessible and well equipped. These conditions are unavailable in peripheries and remote areas so the problem is much more in developing countries like Ethiopia where communication in general is very poor and the infrastructure in health delivery system is weak.

Even with appropriate surgical treatment some of the conditions are associated with high mortality This is made worse by the delay in reaching the appropriate health facility especially lack of transportation and also by the delay made by traditional healers which is very common in our society

Postoperative complications are also common because of the delay in reaching health facilities which prolong the hospital stay and further affect the underlying poor socio economic situation of the country. Some of the disease entities are common in the young productive age group which further affects the economy of the family and the society

1.3. Significance of the study

The prevalence of acute abdomen worldwide and in some parts of Ethiopia is not known. So this research is significant as it tries to identity some of the commonest causes of acute abdomen in Jimma university specialized hospital. By serving as a base line data the results which are of help retrieved are in improving the problems which are addressed in this study.

CHAPTER 2

2.1 Literature review

Acute abdomen is an acute onset of abdominal disease entities that require immediate surgical intervention in most of the cases. The numbers of researches done on acute abdomen in general are Very few in Ethiopia. The main objective of this study was to document the burden of acute abdomen in general and the outcome of emergency laparotomy. Acute abdomen is the presentation of the patients with the history of abdominal pain lasting less than one week patients with apparent abdominal pain which has been present in reality for 6-8 weeks such as strangulated hernia and abdominal trauma are also included in abdominal emergences. (1)

Based on study done at Gonder hospital on April, 2006 G.C. Small bowel obstruction (43.4%), acute appendicitis (34.6%) and large bowel obstruction (11.5%) were the commonest three indications for non-traumatic emergency abdominal surgeries respectively. In a study done in the same hospital the commonest cause of intestinal obstruction was sigmoid volvulus. The Study put large bowel obstruction as the third commonest cause of operated acute abdomen. (2)

Reports from various parts of the world indicate that the incidence and cause of acute abdomen varies from one country to the other. Research done at university teaching hospital of Rwanda done on 199 patients showed that causes of acute abdomen, peritonitis (41.5%), intestinal obstruction (28.4%), acute appendicitis (11.8%), peptic ulcer disease (27.3%), sigmoid and small bowel volvulus (31.4%), intussusceptions (31.3%), adhesion (31.3%). Post operative complications included wound infection (8.7%), septicemia (4.8%), abdominal sepsis (3.5%), anastomotic leak (3.1%), and chest infection (2.2%). The outcome of patients who

had abdominal emergency surgery morbidity (20%), mortality (18%) The overall influencing factors of morbidity and mortality are leucocytosis, hct, duration of surgery more than one hour, duration of hospital stay. In this research abdominal pain (100%) and constipation (51.1%) were the commonest complaints. Abdominal distention (59%) and tenderness and guarding each (45.4%) are the most frequent physical findings. (3)

Based on research done at Tikur Anbessa hospital, acute appendicitis accounting for 52% of cases was the leading cause of acute abdomen followed by intestinal obstruction (26%) and perforated Peptic ulcer disease (PPUD) (9%). There were 36 deaths giving an overall mortality rate of 15.3%. A higher mortality rate was observed in patients who presented late. (4)

Post operative complication and number of deaths in relation with the causes of acute abdomen, there were 60(28%) cases that developed post operative complications. Sepsis was the most frequently identified complication in 25 (12%) followed by wound infection in 19 (9%) and pneumonia in 6 (3%). Overall, 36(15.3%) of the 235 patients who were admitted with the diagnosis of acute abdomen died. The mortality was very high (25%) in those with late presentation as compared to those who came relatively early taking two days as a cutoff point. Of the 214 patients who were operated, 30 died postoperatively accounting for an operative mortality rate of 14%, the mean duration of presentation was 8 days. Twenty-four were males and 15 were females. The mean age of the patients was 31.5 years and two-third were from outside of A.A. Seven out of the 33 patients with small bowel obstruction had died giving a mortality rate of 21.2%.(4)

A study conducted in JUSH in 1994 indicated that the most common cause of acute abdomen was secondary to trauma (31.3%) followed by generalized peritonitis (15.3%) appendicitis (11.5%). From the symptoms abdominal pain was the most common presenting symptom (79 %) o f the cases. In the same study the most common post operative complication was found to be wound infection (84.4%) pneumonia (30.0 %) and paralytic illeus (18%).(5%)

Study done at Lelong Malawi indicates, the most common etiologies were appendicitis (22%), intestinal volvulus (17%), perforated peptic ulcer (11%) and small bowel perforation (11%). The overall mortality rate associated with peritonitis was 15%, with the highest mortality rates observed in solid organ rupture (35%), perforated peptic ulcer (33%), primary/idiopathic peritonitis (27%), tubo-ovarian abscess (20%) and small bowel perforation (15%). Factors associated with death included abdominal rigidity, generalized (versus localized) peritonitis, hypotension, tachycardia and anemia ($p < 0.05$). Age, gender, symptoms (obstipation, vomiting) and symptom duration, tachypnea, abnormal temperature, leukocytosis, hemoconcentration, thrombocytopenia and thrombocytosis were not associated with mortality. (6)

CHAPTER 3

Objective

3.1. General objective

To determine the causes of acute abdomen in JUSH between Meskerem 1, 2005-Pagume 6, 2006 E.C.

3.2. Specific objective

3.2.1. To classify causes of acute abdomen by age and sex

3.2.2. To determine presenting symptoms and signs of acute abdomen

3.2.3. To determine post operative complications

3.2.4. To know the commonly requisted investigation

CHAPTER 4

Method and Materials

4.1 study area and period

This study on the pattern and prevalence of acute abdomen was conducted on patients who came to surgical OPD and surgical wards of JUSH with diagnosis of acute abdomen and managed accordingly during the year between Meskerem 1, 2005- Pagumae 6, 2006E.C.

4.2 study Design

A retrospective analysis on all patients presented to surgical OPD and those admitted to surgical ward with a diagnosis of acute abdomen and managed accordingly was done.

4.3. Populations

4. 3.1. Source population

Patients presented with surgical emergency at JUSH surgical OPD and admitted surgical ward.

4.3.2. Study population

All patients diagnosed to have acute abdomen and managed at OPD or as in patient.

4.4. Sample size and sampling techniques

4.4.1. Sample size

All patients diagnosed to have acute abdomen was taken.

4.4.2. Sampling techniques

No sampling techniques was used.

4.5. Variables

4.5.1. Dependent variables

- Presenting sign and symptoms
- Laboratory investigation
- Type of diagnosis
- Post op complication
- Duration of illness

4.5.2. Independent variables

- Age
- Sex

4.6. Data collection

Cards has been collected using appropriate card numbers from the registry book in the OPD and OR, and the necessary information were filled by health professional after proper orientation.

4.7. Data quality assurance

Data was checked for its completeness and was coded everyday. Those incomplete data about patient characteristics were eliminated from the Study.

4.8. Data analysis

After collecting the data it was analyzed manually.

4.9. Ethical considerations

Prior to data collection official letter was written from Jimma University Medicine and HO Coordinating office to JUSH Clinical director. The Clinical director write to card office. After getting permission data collection was undertaken. Confidentiality has been maintained during the study and after study.

CHAPTER 5

RESULTS

In this study cards of 1201 patients diagnosed to have acute abdomen and managed accordingly were revised. Among those patients 820 (68.27%) were males and 381 (31.72%) were females. Most of the patients are found in the age group 35-44 (24.55%), followed by 15-24 (20.36%) and 25-34 (19.16%). 896(74.64%) of the patients came from outside of Jimma town.

The most common presenting symptom was abdominal pain 1200 (99.98%) followed by vomiting 1006 (83.77%), obstipation 336 (28.02%), distension 330 (27.54%) and constipation 104 (8.68%) respectively. Abdominal tenderness being the most common presenting sign found on 931 (77.54%) of patients, followed by distended abdomen 527 (43.91%), fever 293 (24.43%), abdominal mass 284 (23.66%) and hypotension 151 (12.63%) respectively.

The average duration of illness when the patients arrive at the hospital was 4 day. Most of the patients 823 (68.57%) came earlier than 4 days while 378 (31.43%) of them came after 4 days.

The most commonly done investigation was blood group and Hematocrit (91.03%) followed by abdominal X-ray (45.7%) and CBC (25.86%).Ultrasound accounts for (12.9%).

The most common cause of acute abdomen in JUSH was acute appendicitis 549 (45.7%) followed by small bowel obstruction 257 (21.14%), large bowel obstruction 203 (16.98%), abdominal trauma 153 (12.74%) perforated peptic ulcer disease 36(2.99%) and typhoid perforation 3 (0.25%) respectively.

The most common postoperative complication was wound infection 466 (38.8%) followed by pneumonia 235 (19.56%), sepsis 179 (14.93%), anastomosis leak 59 (4.91%) and intra-abdominal abscess 47(3.91%). The mean duration of hospital stay was 7 days. There were a total of 129 deaths.

Except for the association assumed between duration of illness during presentation and postoperative complication ($p<0.001$) other associations (age of the patient and postoperative complication and duration of hospital stay had no association ($p<0.05$).

Table 1.Age and sex distribution of patients with acute abdomen in JUSH Meskerem 1, 2005 – Pagumae 6, 2007 E.C.

Age	Sex		Total No (%)
	MaleNo (%)	Female No (%)	
< 15	54	25	79 (6.58%)
15-24	160	87	244 (20.36%)
25-34	130	100	230 (19.16%)
35-44	200	95	295 (24.55)
45-54	140	40	180 (14.97%)
55-64	98	17	115 (9.58%)
≥ 65	38	20	58 (4.79%)
Total	820(74.25)	381(25.75)	1201 (100%)

Table 2. Signs and symptoms of acute abdomen at presentation to surgical OPD of JUSH Meskerem 1, 2005-Pagumae 6, 2006 E.C

Symptoms	No (%)
Abdominal Pain	1200(99.99%)
Vomiting	1006 (83.77%)
Obstipation	336(27.97%)
Fever	213(17.73%)
Distension	330(27.47%)
Constipation	104(8.65%)
Sign	No (%)
Abdominal tenderness	931(77.54%)
Distended abdomen	527(43.88%)
Fever	293(24.49%)
Hypotension	151(12.63%)
Abdominal Mass	150(12.48%)

Table 3: Investigations done at presentation for patients with acute abdomen in JUSH Meskerem 1, 2005-Pagume 6, 2006 E.C.

S. No	Type of investigation	%
1	Blood group and Hematocrit	91.03%
2	X-ray	45.70%
3	CBC	25.86%
4	Other	31.03%

Table 4: Distribution of the causes of acute abdomen in surgical wards JUSH Meskerem 1, 2005-Pagume 6, 2006 E.C.

S. No	Diagnosis	No %
1	Acute appendicitis	549 (45.70%)
2	Small bowel obstruction	257 (21.14%)
3	Large bowel obstruction	203(16.98%)
4	Abdominal trauma	153(12.74%)
5	PPUD	36(2.99%)
6	Typhoid perforation	3(0.25%)
	Total	1201(100%)

Table 5: Post-operative complication of patients with acute abdomen in JUSH Meskerem 1, 2005-pagumae 6, 2006 E.C.

S. No	Post op complication	No %
1	Wound infection	166 (36.40%)
2	Pneumonia	105 (23.02%)
3	Sepsis	79(17.33%)
4	Anastomosis leak	59(12.94%)
5	Intra- abdominal abscess	47(10.31%)
	Total	456(100%)

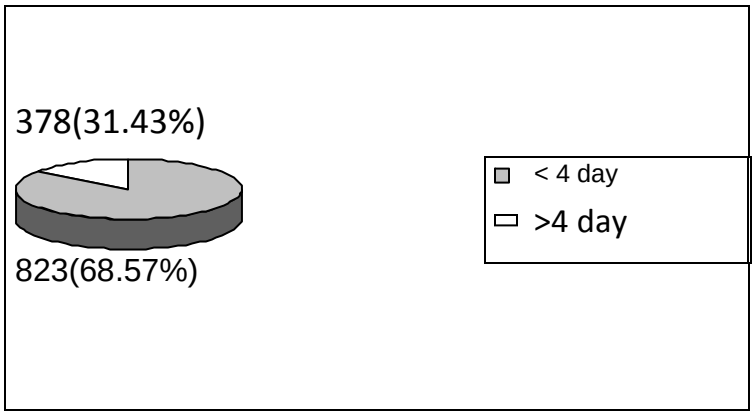

Fig 1: The frequency distribution of the duration of acute abdomen at presentation to surgical OPD of JUSH Meskerem1, 2005-Pagumae 6, 2006 E.C.

Table 6: The association between duration of illness at presentation and post-operative complications.

Duration of illness	Post-operative complication		
	Yes	No	Total
≤ 4	33	111	144
> 4	188	124	312
Total	221	235	456

X^2-55.0002

Df-1

P <0.001

CHAPTER SIX

DISCUSSION

In this study the commonest cause of acute abdomen was acute appendicitis accounting for 45.7% of cases which is also the most common cause of acute abdomen accounting 52 % in Tikur Anbessa teaching hospital according to a study done on 2006 G.C. The study done at Gonder University hospital show Small bowel obstruction the most common cause acute abdomen accounting for 43.4%.

All patients (99.99%) were having abdominal pain during presentation which is the same as other studies done at Tikur Anbessa teaching hospital and Gondar teaching hospital in both studies accounting for 100%. Vomiting was the next most common presenting symptom accounting for 63.77% in Gonder University it accounts for 90.3% and study done at Tikur Anbessa hospital showed vomiting accounts for about 70% of the cases.

Abdominal tenderness was the most frequently found abdominal finding (77.54%) which comparable finding in the study done at Tikur Anbessa teaching hospital accounts for 83%.

The mean duration of illness at presentation to the hospital was 3 days which is relatively earlier than Studies done at Tikur Anbessa teaching hospital which is 4.6 days but the same as that of Gondar teaching hospital. This may be due to the fact that most of the patients were coming from outside of Jimma town and most of the patients were treated at local health center before they come to the hospital.

The most common post-operative complication was wound infection 36.40% which is also the most common complication with a slightly higher

percentage at Gondar teaching hospital 20.6% but in Tikur Anbessa hospital the commonest cause of post-operative complication was sepsis. This may be due to the overload of number of patients treated at JUSH and most patients do not get adequate wound care. Pneumonia and sepsis were the next most common post op complication (25.37% & 14.93). Post-operative complications were most commonly seen in patients who came to the hospital late.

One hundred twenty nine 10.74% of patients died. This comparable to study done at Gonder hospital 9.3%.But the figure is higher in Tikur Anbessa hospital 15.3%.This because of most patients come earlier.

CHAPTER SEVEN

CONCLUSION

- All in all this study showed that the most common cause of acute abdomen was acute appendicitis.
- Wound infection is the most common post-operative Complication followed by pneumonia and wound infection.
- There is an association between duration of illness at Presentation and operative complication.
- The average duration of illness at presentation was 3 day.
- The average duration of hospital stay was 7 days.
- Most of the patients come out of Jimma town.
- Most of the patients are males.
- Abdominal pain is the most common symptom while abdominal tenderness is comments sign.

CHAPTER EIGHT

RECOMMENDATION

The hospital nurses should get adequate training regarding infection prevention and greater attention should be given for wound care.

The referral system should be well coordinated and health professionals working at local health center should be trained to immediately send patients with acute abdomen to the hospital.

More physicians should be trained on managing acute abdomen at rural areas operatively as most post –operative complication and death occur because of delay in reaching health facility where operation were done.

Annex-1

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ANNEXE-2
Questioner

1) Identification

A) Sex male ◯ female ◯

B) Age < 15 ◯
15-24 ◯
25-34 ◯
35-44 ◯
45-54 ◯
55-64 ◯
>65 ◯

C) Address Jimma ◯

Out of Jimma ◯

2) Symptoms at presentation to hospital

Fever ◯
Vomiting ◯
Abdominal pain ◯
Abdominal distention ◯
Constipation ◯
Obstipation ◯
Other (mention any) ◯

3) Signs at presentation at hospital

Abdominal tenderness ◯
Fever ◯
Abdominal mass ◯
Hypotension ◯
Guarding ◯
Pallor ◯

4) Duration of illness

< 6 hours ◯
7-24 hours ◯
1 day -2 day's ◯
3-4 days ◯
>4days ◯

5) Investigation done at presentation

Abdominal x-ray ◯

Blood group and hematocrit ◯

B/F ◯

S/E ◯

CBC ◯

U/S ◯

Others ◯

6)Settled diagnosis

Acute appendicitis ◯

Small bowl obstruction ◯

Large bowl obstruction ◯

Perforated PUD ◯

Peritonitis ◯

Abdominal trauma ◯

Typhoid perforation ◯

Other ◯

7) Post-operative complications

Wound infection ◯

Sepsis ◯

Pneumonia ◯

Intra-abdominal abscess ◯

Anastomotic leak ◯

Other (mention if any) ◯

8) Duration of hospital stay

<4 day ◯

>4day ◯

9) Outcome Improved ◯

Death ◯