

Acute abdomen: clinical patterns and outcomes

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Abstract

The acute abdomen accounts for 5% to 25% of all emergency department visits of 5 to 10 million patient encounters in the United States annually. The main objective of this study was to assess the surgical treatment outcomes for clinicopathological patterns of acute abdomen. This prospective descriptive study was conducted on 84 consecutive patients who underwent surgery in Al-Gamhouria Hospital within a period between January and December 2016.

The incidence of the acute abdomen was 12.03% (84) of the total population of the surgical emergency cases in the study period. The male to female ratio of 1.6:1 and the mean age was 29.13 ± 17.10 years. Acute appendicitis was the most common cause 63%. Out of 84 patients 18 (21%) had complications and surgical site infection was the most postoperative complication 7 (8%). Overall mortality in our study was 2.4% and the duration of hospital stay for ≤ 7 days was 83% and >7 days was 17%.

The recovery- rate from acute abdominal disease increases in proportion to the earliness of diagnosis and treatment.

Keywords: Acute abdominal pain; Peritonitis; Infection

Introduction

Abdominal pain accounts for 5% to 25% of all emergency department visits of 5 to 10 million patient encounters in the United States annually^[4, 6, 16]. The term acute abdomen designates symptoms and signs of intra-abdominal disease usually treated best by surgical operation^[14]. It has a large number of possible causes and so a structured approach is required^[4]. It makes sense, that many diseases some of which do not require surgical treatment produce abdominal pain, so the evaluation of patients with abdominal pain must be methodical and careful^[14].

The course, complication and mortality rates of each clinical patterns treatment in patients with acute abdomen remain unknown owing to the lack of data. The purpose of this study was to assess the surgical treatment outcomes for clinicopathological patterns of acute abdomen.

Patients and Methods

This study was designed as a perspective. It included 84 consecutive patients who were treated surgically for acute abdomen in Al-Gamhouria Hospital within a period between January and December 2016. In this study, acute abdomen is defined as a sudden onset of severe abdominal pain of less than 24 hours duration^[4]. The main variables were evaluated; demographic data, clinical presentations, etiology, postoperative complications, hospital mortality and length of hospital stay.

The X^2 test was used for categorical data or Fisher's exact test was used when it was smaller than 5 in any cell of our data table. Student *t*-test was used for continuous data. Statistical analyses were performed using SPSS version 17.0 and values of $p \leq 0.05$ were considered significant.

Results

The incidence of the acute abdomen was 12.03% (84) of the total population of surgical emergency cases in the study period. The male to female ratio of 1.6:1. Patients ranged in age from 9 to 70 years, with mean age of 29.13 ± 17.10 years. Forty-eight patients (57%) were presented with localized peritonitis and 36 patients (43%) were presented with generalized peritonitis.

The most common cause was acute appendicitis in 53 (63%) patients. Acute cholecystitis in 13 (15%) patients; calculous versus acalculous 13% and 2%, respectively. Small and large bowel obstructions were 7 (8%) patients and 5 (6%) patients, respectively. Perforated duodenal ulcer in 6 patients (7.1%).

Out of 84 operated patients, 18 (21%) had post-operative complications. Surgical site infection 7 (8%) was the most common post-operative complication (Table 2). Overall hospital mortality was 2 patients (2.4%) and length of hospital stay for ≤ 7 days versus for >7 days were 83% and 17%, respectively.

Table 1: Clinicopathological features of 84 patients with acute abdomen

Variables	No	Percentage	p- value
Clinical Presentation			
Local peritonitis	48	57%	0.547
General peritonitis	36	43%	0.489
Pathological cause			
Perforated viscus	14	16.7%	0.37
Bowel obstruction	12	14.3%	0.79
Inflammation	58	69%	0.049
There were no patients with bleeding and ischemic bowel			

Table 2: Outcome endpoints of 84 patients with acute abdomen

Variables	No	Percentage	p-value
Complications			
Surgical site infection	7	8%	0.657
Wound dehiscence	4	4.8%	0.490
Residual abscesses	3	3.6%	0.432
Anastomosis leak	2	2.4%	0.395
Septicemia	2	2.4%	0.395
Mortality	2	2.4%	0.002
Hospital stay (mean 5.67 ± 3.87)			
≤ 7 days	83	83%	0.003
>7 days	17	17%	0.006

Discussion

Abdominal pain is one of the most common conditions, which calls for prompt diagnosis and treatment [1]. The incidence of acute abdomen was reported to be 5% - 25% [4, 6, 15, 16]. In the present study, an incidence of acute abdomen lies in that range.

Several studies have reported that young patients aged in the 2nd and 3rd decades of have life the most effect than other age groups [1, 2, 4, 10, 12, 15, 17]. The present show similar result.

Regarding clinical presentation local peritonitis was the most presenting among patients than general peritonitis. The results of the present study are consistent with the literature [1, 4, 5, 6, 8, 9]. The causes of acute abdomen are several and their relative incidence varies in different populations [5].

The most common cause of the acute abdomen in this study was acute appendicitis. Previous studies reported acute appendicitis in most emergency surgical cases [1, 3, 5, 7, 11, 12, 15, 17].

Success in the treatment depends mostly on early diagnosis with early intervention and proper postoperative care [12]. The clinical outcomes in the present study are not vary far forth from previous studies. The Complications rate is significantly low in the case of laparoscopic surgery than open surgery [11,13, 14]. In this study, all patients had open surgery.

Ayenew et al. [3] reported that the post-operative complication rate was 16%, our result was high compared that finding. In a study by Gebre [5] post-operative complication rate was 20.5%, nearly same our finding. Several studies revealed that surgical site infection was the most common post-operative complication [2, 3, 5, 7, 11 - 16]. This finding is explained by the majority of acute abdomen patients who were contaminated cases.

Murata et al. [10] reported the death rate in the hospital was 2.3%, nearly the same our finding. Our postoperative mortality rate in hospital is a satisfactory outcome related to our situation.

Morbidity, preoperative co-morbidities age, and gender are all those risk factors that prolonged hospital stay. Prolonged hospitalization had economic effect on patients. Our result is consistent with the literature [2, 3, 5, 6, 7, 10].

Finally, we need education programmes aimed at the public and the surgical residents result in greater awareness, earlier presentation and better overall outcome.

Conclusion

The recovery- rate from acute abdominal disease increases in proportion to the earliness of diagnosis and treatment.

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التهاب البطن الحاد: الأنماط السريرية والنتائج

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المخلص

مرض البطن الحاد يمثل من 5% إلى 25% من جميع زيارات قسم الطوارئ أي من 5 إلى 10 مليون مريض في الولايات المتحدة سنويًا. الهدف من هذه الدراسة هو تقييم نتائج العلاج الجراحي للأنماط السريرية والمرضية للمرضى الذين يعانون من مرض البطن الحاد.

هذه الدراسة استثنائية وصفية شملت 84 مريضًا خضعوا للجراحة في مستشفى الجمهورية خلال الفترة من يناير إلى ديسمبر 2016. بلغ معدل حدوث التهاب البطن الحاد 12.03% من مجموع حالات الطوارئ الجراحية. كانت نسبة الذكور إلى الإناث 1:1.6 ومتوسط العمر 17.10 ± 29.13 سنة. وكان التهاب الزائدة الدودية الحاد هو السبب الأكثر شيوعًا المسؤول عن 63% من الحالات. وكانت نسبة المضاعفات ما بعد الجراحة 21%. وكانت عدوى الجروح هي أكثر مضاعفات ما بعد الجراحة 8%. كان معدل الوفيات الإجمالي 2.4%، وكانت مدة الإقامة في المستشفى لـ 7 أيام أو أقل تمثل 83% بينما مدة الإقامة لأكثر من 7 أيام مثلت 17% فقط. نخلص من هذه الدراسة أن نسبة الشفاء من مرض البطن الحاد تزداد طرديًا مع التشخيص والعلاج المبكرين.

الكلمات المفتاحية: البطن الحاد، التهاب الصفاق الموضعي، عدوى الموقع الجراحي .