Original Article

Antibiotic Therapy with Appendectomy

Compare the Outcomes of Antibiotic Therapy with Appendectomy in Patients with Acute Appendicitis

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ABSTRACT

Objective: To compare the outcomes such as recurrence, complications, hospital stay and pain of antibiotic therapy and appendectomy in patients presented with acute appendicitis.

Study Design: Comparative study.

Place and Duration of Study: The study was conduct Department of Surgery, Bolan University of Medical & Health Sciences, Quetta from July 2017 to August 2019.

Materials and Methods: Eighty patients of both genders presented with acute appendicitis were included. Patient's demographical details were recorded after written consent. Patients were equally divided into two groups i.e. Group I consist of 40 patients and received appendectomy, Group II consist of 40 patients and received antibiotics. Outcomes such as recurrence, pain, hospital stay and complications were examined and compare the findings between both groups. SPSS 21.0 was used to analyze the data.

Results: Fifty three (66.25%) were male (Group I 28, Group II 25) with mean age 32.2±7.6 years and 27 (33.75%) were females (12 Group I, 15 Group II) with mean age of 31.5±9.1 years. Group I patients had less hospital stay, recurrence rate and pain score as compared to Group II patients (p-value <0.05). In Group I patients wound infection was the most common complication found in 10 (25%) patients and in Group II appendicular mass was most common complication found in 12 (30%) patients.

Conclusion: Appendectomy is very effective and better treatment modality as compared to antibiotic therapy for acute appendicitis.

Key Words: Acute Appendicitis, Appendectomy, Antibiotic Therapy, Outcomes

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INTRODUCTION

Acute appendicitis is most common abdominal emergency, world wise.[1] Acute appendicitis is associated with 40000 hospital admissions per years in United Kingdom.[2] Acute appendicitis is common in early ages from 10-20 years of age. However, it may occur at any age. Males are at high risk of developing acute appendicitis as compare to female (life time risk 8.6% vs 6.7%) in United States.[3] An estimated decline in acute appendicitis has been reported after1980s. Prevalence of acute appendicitis was 48% in 2008 at Pakistan Ordinance Factories, Wah Cantt.[4]

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Clinically acute appendicitis is defined as acute inflammation associated with vermiform appendix.[5] Moreover, the inflammation is due to obstruction of appendicular lumen. The obstruction might be due to infective agents, stools, lymphoid hyperplasia and faecolith.[6] Acute appendicitis is presented with abdominal pain in peri-umbilical region followed by localization in the right lower abdomen, vomiting, nausea, loss of appetite and constipation. Murphy described migration of pain to right iliac fossa in 50% of patients as diagnostic sequence (colicky central abdominal pain).[7] Literature reported that initial pain is termed as referred pain while the pain intensifies within 24 hours and become sharp or constant within this duration. Visceral innervations of midgut are responsible for referred pain while parietal peritoneumis responsible for localization of pain in acute appendicitis patients.[8]

Acute appendicitis treatment includes medical and surgical treatment.[9] Medical treatment includes antibiotics and analgesics use, while surgical treatment consists of open and laparoscopic procedures. Evidence exist that laparoscopic approach is associated with early recovery, abdominal exploration through small incision and lower pain level, while antibiotic

treatment resulted more hospital stay, pain and recurrence rate. Wound infection, post-operative abscesses and hematoma formation are common complications of surgery.[10-11]

Present study was conducted aimed to examine the outcomes of appendectomy and antibiotic therapy in term of hospital stay, recurrence, pain and complication in patients presented with acute appendicitis.

MATERIALS AND METHODS

This comparative study was conducted at Department of Surgery, Bolan University of Medical & Health Sciences, Quetta from 1st July 2017 to 31st August 2019. A total of 80 patients of both genders with ages 15 to 50 years presented with acute appendicitis were included. Patient's demographical details were recorded after written consent. Pregnant women, patients with irritable bowel disease, allergic to antibiotic and those not willing to sign consent were excluded from the study.Patients were equally divided into two groups i.e. Group I consist of 40 patients and received appendectomy, Group II includes 40 patients and received antibiotics treatment (ciprofloxacin 250mg, metronidazole 500mg) thrice a day for three days. Outcomes such as recurrence, pain, hospital stay and complications were examined and compare the findings between both groups. Pain score was examined by visual analogue score VAS. Data was analyzed by SPSS 21. Chi-square test and students 't' test was used to compare the findings between both groups. Data was recorded in the form of table. P-value <0.05 was considered as significant.

RESULTS

There were 53 (66.25%) males (Group I 28, Group II 25) with mean age 32.2±7.6 years and 27 (33.75%) were females (12 Group I, 15 Group II) with mean age of 31.5±9.1 years (Table 1). In Group I 30 (75%) patients had hospital stay less than 7 days and 10 (25%) patients had hospital stay >7days. In Group II 9 (22.5%) had stay <7 days while 31 (77.5%) patients had hospital stay >7 days. Recurrence rate was high in Group II patients 12 (30%) as compared to Group I 7.5%. According to the pain, In Group I 34 (85%) patient had no pain, 5 (12.5%) had mild pain and 1 (2.5%) had moderate pain while no patient had severe pain. In Group II 8 (20%) patients had no pain, 1 (2.5%) patient had mild pain, 21 (52.5%) patients had moderate pain and 10 (25%) patients had severe pain (Table 2).

In Group A patients wound infection was the most common complication found in 10 (25%) patients followed by peritonitis 6 (15%) and perforation 2 (5%). In Group II appendicular mass was most common complication found in 12 (30%) patients followed by perforation 7 (17.5%) and appendicular abscess 5 (12.5%) (Table 3).

Table No.1: Age and gender wise distribution among both groups (n=80)

Variable	Group I	Group II
Mean age (years)	32.2±7.6	31.5±9.1
Gender		
Male	28 (70%)	25 (62.5%)
Female	12 (30%)	15 (37.5%)

P-value >0.05

Table No.2: Outcomes in term of hospital stay, recurrence and pain score

Outcome	Group I	Group II	P value
Hospital stay (days)			
<7	30 (75%)	9 (22.5%)	0.001
> 7	10 (25%)	31 (77.5%)	
Recurrence			
Found	3 (7.5%)	12 (30%)	0.001
Not Found	37 (92.5%)	28 (70%)	
Pain (VAS)			
No Pain	34 (85%)	8 (20%)	0.001
Mild	5 (12.5%)	1 (2.5%)	
Moderate	1 (2.5%)	21 (52.5%)	
Severe	0 (0%)	10 (25%)	

Table No.3: Comparison of complication among both groups (n=80)

Complications	Group I	Group II
Wound Infection	10 (25%)	-
Peritonitis	6 (15%)	-
Perforation	2 (5%)	7 (17.5%)
Appendicular Mass	-	12 (30%)
Appendicular Abscess	-	5 (12.5%)

DISCUSSION

Acute appendicitis is one of the most common disorders in all over the world and appendectomy is the most common surgical treatment performing worldwide.[12] Appendectomy and antibiotic therapy are the two main treatment modalities for acute appendicitis but appendectomy consider as a treatment of choice for this malignant disorder.[13] Present study was conducted to examine the outcomes of appendectomy and antibiotic therapy in patients with acute appendicitis and compare the findings between both methods. In this regard 80 patients were enrolled and equally divided into two groups i. e. Group I consist of 40 patients and received appendectomy, Group II consist of 40 patients and received antibiotics treatment (ciprofloxacin 200mg, metronidazole 500mg) thrice a day for three days. Out of 80 patients, 53 (66.25%) were male (Group I 28, Group II 25) with mean age 32.2±7.6 years and 27 (33.75%) were females (12 Group I, 15 Group II) with mean age of 31.5±9.1 years. These results showed

similarity to many of previous studies in which male patients were high in number 55 to 75% as compared to females and majority of patients were ages 25 to 40 years.[14,15]

In this study we found that 75% patients whom were received appendectomy had hospital stay less than 7 days while 22.5% patients whom were received antibiotics had hospital stay less than 7 days. There was significant difference in term of hospital stay (p=0.001). These results were similar to some other studies in which patients treated with appendectomy had less hospital stay as compared to those who received antibiotic therapy.[15,16]

In the present study, we found a significant difference in term of recurrence and pain score (p=<0.05). We found recurrence rate was high in Group II patients 12 (30%) as compared to Group I 7.5%. According to the pain score appendectomy group had high rate of no pain 85% as compared to antibiotic group 20%. A study conducted by Farzana et al[17] regarding efficacy of appendectomy and antibiotic treatment for acute appendicitis reported antibiotic group had high recurrence rate 13.3% as compared to appendectomy patients 3.3%.

In present study In Group A patients wound infection was the most common complication found in 10 (25%) patients followed by peritonitis 6 (15%) and perforation 2 (5%). In Group II appendicular mass was most common complication found in 12 (30%) patients followed by perforation 7 (17.5%) and appendicular abscess 5 (12.5%). These results were comparable to some other studies.[13,16,18].

CONCLUSION

Appendectomy is safe and effective treatment modality for acute appendicitis as compared to antibiotic therapy in term of hospital stay, recurrence and pain. It is also concluded that appendectomy resulted low complications rate as compared to antibiotic therapy.

Author's Contribution:

Concept & Design of Study:	Samina Karim
Drafting:	Ahmad Shah
Data Analysis:	Muhammad Ishaq Durani
Revisiting Critically:	Samina Karim, Ahmad Shah
Final Approval of version:	Samina Karim

Conflict of Interest: The study has no conflict of interest to declare by any author.

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