

Comparison of Outcomes Between Antibiotics Treatments Versus Appendectomy Patients With Uncomplicated Acute Appendicitis

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ABSTRACT

Objective: To comparison between antibiotic therapy and appendectomy in patients presented with uncomplicated acute appendicitis.

Study Design: Randomized controlled trial

Place and Duration of Study: This study was conducted at the Department of Surgery Bacha Khan Medical Complex Swabi from March 2019 to February 2020.

Materials and Methods: One hundred and thirty patients of both genders presented with uncomplicated acute appendicitis were included and divided all the patients equally into two groups A and B. Each group comprised 65 patients. Group A received appendectomy while group B received antibiotic treatment. Outcomes such as hospital stay, complications, recurrence within one year and patient's satisfaction were examined.

Results: There were 40 (61.54%) male and 25 (38.46%) female patients in group A with mean age 30.06 ± 8.72 years while in group B 36 (55.38%) male and 29 (44.62%) were females with mean age 29.42 ± 9.65 years. Significant difference was observed regarding hospital stay between group A and B (2.02 ± 0.85 days Vs 6.28 ± 2.44 days) p-value 0.001. Regarding complications group B had overall lower rate of complications as compared to group A [(2 (3.08%) Vs 10 (15.38%)] a significant difference was observed between both group ($p=0.02$). In group A 1 (1.54%) patient develop recurrence while in group B 16 (27.69%) developed recurrence within 1 year. In group A 63 (96.92%) patients were satisfied while in group B 44 (67.69%) patients were satisfied with treatment modality.

Conclusion: Surgical treatment is safe and effective treatment modality with higher patients satisfaction and successful treatment rate as compare to antibiotics treatment.

Key Words: Uncomplicated acute appendicitis, Antibiotic drugs, Appendectomy, Hospital stay, Recurrence, Patients satisfaction

Citation of article: Khan J, Kashif M, Ramzan, Bilal M. Comparison of Outcomes Between Antibiotics Treatments Versus Appendectomy Patients With Uncomplicated Acute Appendicitis. Med Forum 2020;31(5):78-81.

INTRODUCTION

Appendicitis is the most well-known earnest condition by and large careful practice with a frequency ~100/100,000/year, and higher pervasiveness in men than ladies (8.6% versus 6.7%).^{1,2} Standard treatment is appendectomy (i.e., open and laparoscopic appendectomy).

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Received: March, 2020

Accepted: April, 2020

Printed: May, 2020

Around 310,000 appendectomies are performed/year in the United States, of which 250,000 have positive an infected appendix³, giving a negative appendectomy pace of about 15% to 30%.⁴

Appendectomy itself is related with intra and post-usable morbidities including vascular wounds, urinary tract inconveniences, hematomas, colonic fistulas, careful site diseases, bonds, inside deterrents, and huge length of medical clinic stay.^{5,6} The post-employable complexity rate ranges from 2% to 23% and over 3% of patients are readmitted with intestinal obstacle and post-usable grip.^{7,8}

Traditionalist treatment with anti-infection agents is an elective decision for an infected appendix; in spite of the fact that the danger of disappointment is about 13% higher, yet the danger of confusions is lower. Traditionalist treatment with anti-infection agents for simple a ruptured appendix is a topical issue by and large medical procedure and there are numerous investigations in kids, grown-ups and blended populaces (kids and grown-ups) individually.⁹⁻¹¹ Among 13 precise surveys in grown-ups, 10 audits

considered just randomized controlled preliminaries (RCT) distributed during 1995 to 2015 with the quantity of included RCTs running from 3 to 6. Among them, all aside from one audit¹² pooled adequacy and confusions among anti-infection agents and appendectomy applying meta-examination. Albeit different anti-infection agents (for example third era of cephalosporin, metronidazole, penicillin, and beta-lactamase) had been utilized, they were crumpled into one classification when contrasted and appendectomy.¹⁰ We conducted present study with aimed to examine the effectiveness of antibiotic treatment and compare it with surgical treatment (appendectomy).

MATERIALS AND METHODS

This randomized controlled trial was conducted at Department of surgery Bacha Khan Medical complex Swabi during from the period 1st March 2019 to 28th Feb 2020. During this period 130 patients of both gender presented with uncomplicated acute appendicitis were analyzed. Patients ages were ranging between 15 to 45 years. We divided all the patients equally into two groups A and B and each group consist of 65 patients. Patients demographics including age, sex, body mass index, and symptoms were recorded after taking informed consent. Patients with recurrence, complicated appendectomy and those with refusal of consent were excluded. Group A patients were received surgical treatment (open or laparoscopic appendectomy) while group B received antibiotic treatment. In antibiotic group 250 mg of ciprofloxacin and 500 mg of metronidazole were given three times a day for 5 days. Treatment outcomes were examined in term of hospital stay, complications such as wound infection, perforation, nausea vomiting, and abdominal abscess. Recurrence rate was examined within 1 year after treatment between both groups. All the data was analyzed by SPSS 24. Chi-square test was applied to compare the outcomes between both groups. P-value <0.05 was taken as statistically significant.

RESULTS

There were 40 (61.54%) male and 25 (38.46%) female patients in group A with mean age 30.06 ± 8.72 years while in group B 36 (55.38%) male and 29 (44.62%) were females with mean age 29.42 ± 9.65 years. Mean BMI in group A was 26.42 ± 3.6 kg/m² and in group B it was 25.54 ± 4.7 kg/m². Pain in lower quadrant was found in all the patients of both groups 100%. Loss of appetite found in 18 (27.69%) in group A and 20 (30.77%) in group B, 15 (23.08%) in group A and 18 (27.69%) in group B patients had nausea and vomiting, fever found in 15 (23.08%) in group A and in group B it was found in 13 (20%) patients. We found no significant difference regarding age, gender, BMI and symptoms between both groups ($p > 0.05$) (Table 1).

We found a significant difference regarding hospital stay between group A and B (2.02 ± 0.85 days Vs 6.28 ± 2.44 days) p-value 0.001.

Table No.1: Age, sex, BMI and symptoms between both groups

Variable	Group A	Group B	P-value
Age (Yrs)	30.06 ± 8.72	29.42 ± 9.65	>0.05
Gender			
Male	40 (61.54%)	36 (55.38%)	N/S
Female	25 (38.46%)	29 (44.62%)	
BMI (kg/m ²)	26.42 ± 3.6	25.54 ± 4.7	N/S
Symptoms			
Pain in lower quadrant	65 (100%)	65 (100%)	>0.05
Loss of Appetite	18 (27.69%)	20 (30.77%)	
Nausea & Vomiting	15 (23.08%)	18 (27.69%)	
Fever	15 (23.08%)	13 (20%)	

Table No.2: Hospital stay and overall complications between both groups

Variable	Group A	Group B	P-value
Hospital stay (days)	2.02 ± 0.85	6.28 ± 2.44	0.001
Complications			
Yes	10 (15.38%)	2 (3.08%)	0.002
No	55 (84.62%)	63 (96.92%)	

Table No.3: Treatment success rate and patients satisfaction between both groups

Variable	Group A	Group B	P- value
Treatment successful			
Yes	64 (98.46%)	49 (75.38%)	0.001
No	1 (1.54%)	16 (27.69%)	
Patients satisfaction			
Yes	63 (96.92%)	44 (67.69%)	0.001
No	2 (3.08%)	31 (47.69%)	

Regarding complications group B had overall lower rate of complications as compared to group A [(2 (3.08%) Vs 10 (15.38%)] a significant difference was observed between both group ($p = 0.02$). Regarding complications in group A 3 patients developed wound infection, 3 had perforation, 3 had nausea vomiting and

1 with fever and in group B 2 patients had abdominal abscess (Table 2). Regarding recurrence with 1 year after treatment, we found that in group A 1 (1.54%) patient develops recurrence while in group B 16 (27.69%) developed recurrence. A significant difference was observed between both groups A and B with p-value <0.001.

Overall successful treatment rate was high in group A as compared to group B 64 (98.46%) Vs 49 (75.38%), a significant difference was observed between both groups with p-value 0.024. According to patients satisfaction in group A 63 (96.92%) patients were satisfied while in group B 44 (67.69%) patients were satisfied with treatment modality (Table 3).

DISCUSSION

Appendicitis is one of the most common painful disorders found all over the world and appendectomy is the common surgical intervention performed in surgical settings.¹³ Many of treatment modalities have been used for the treatment of appendicitis in which antibiotic therapy and surgical treatment have been widely used. However surgical treatment considered as treatment of choice because of better efficacy, low recurrence and cost effectiveness.^{14,15} In present study 130 patients were analyzed and divided into two groups, one group received antibiotic therapy and one received surgical treatment (appendectomy). Overall male patients were high in numbers 76 (58.46%) as compared to females 41.54% with mean age 29.8 ± 8.42 years. These results showed similarity to many of previous study in which males were predominant 55% to 68% as compared to females and average age of patients were 25 years.^{16,17}

In our study we found that appendectomy treatment group had less hospital stay 2.02 ± 0.85 days (ranges 1 to 3 days) as compared to antibiotics treatment group 6.28 ± 2.44 days (ranges 3 to 10 days), a significant difference was observed between both groups with p-value <0.001. A meta analysis conducted by Salminen et al¹⁸ reported that median hospital stay in antibiotic and appendectomy groups was 3 days. However patients treated with antibiotics had hospital stay ranges 3 to 20 days. Another study conducted by Ibrahim et al¹⁹ reported that surgical treatment group had longer hospital stay 3.6 ± 1.2 as compared to medical treatment group 2.2 ± 0.3 days with p-value <0.05.

In present study we found that overall complications rate was high in appendectomy group 15.38% as compared to antibiotics group 3.08%. Some of studies demonstrated that appendectomy had high complications rate 10 to 25% as compared to antibiotic treatment.^{19,20} However, some of studies reported no significant difference regarding complications between both treatment modalities.^{18,21}

In this study regarding recurrence with 1 year after treatment, we found that in group A 1 (1.54%) patient

develops recurrence while in group B 16 (27.69%) developed recurrence. A significant difference was observed between both groups A and B with p-value <0.001. These results were comparable to many of previous studies in which surgical treatment had less recurrence rate and high efficacy rate as compared to antibiotics groups.^{22,23} We found that overall successful treatment rate was high in group A as compared to group B 64 (98.46%) Vs 49 (75.38%), a significant difference was observed between both groups with p-value 0.024. According to patients satisfaction in group A 63 (96.92%) patients were satisfied while in group B 44 (67.69%) patients were satisfied with treatment modality. These results showed similarity to many of previous studies in which appendectomy resulted better efficacy with higher patients satisfaction rate as compared to antibiotic treatment.^{24,25}

CONCLUSION

Surgical treatment is safe and effective treatment modality with higher patients satisfaction and successful treatment rate as compare to antibiotics treatment. However complications rate was high in appendectomy treated patients. We found no major complication in both groups.

Author's Contribution:

Concept & Design of Study:	Jehangir Khan
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Data Analysis:	Ramzan, Muhammad Bilal
Revisiting Critically:	Jehangir Khan, Muhammad Kashif
Final Approval of version:	Jehangir Khan

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

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