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Original Research Article

To Find the Incidence of Type of Post-Operative Wound Infection in Uncomplicated Acute Appendicitis Cases Using Prophylactic Post-Operative Antibiotics

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Abstract:

Background: Acute appendicitis is the most common surgical emergency. Life time prevalence rate of acute appendicitis is approximately one in seven and more common in men than women (8.6% versus 6.7%). About 310,000 appendectomies are performed/year in the United States, of which 250,000 have definite appendicitis, giving a negative appendectomy rate of about 15% to 30%.

Methods: This randomized control prospective study. Cases of uncomplicated acute appendicitis undergoing emergency open appendectomy were included in this study.

Results: 5 patients (3 in Group A and 2 in Group B) developed wound infection. All the 5 patients developed superficial site infection. None of the patients developed deep surgical site or intra-abdominal infections in either of the two groups. There was no statistically significant difference between the two groups (p value- 0.621).

Conclusion: Frequency of post operative wound infection is generally very low in uncomplicated appendicitis. The prolonged use of antibiotics post operatively is unnecessary, can increase antibiotic resistance, can produce side effects and increase cost of treatment.

Keywords: Wound infection, Antibiotic, Acute appendicitis.

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Introduction

Acute appendicitis is the most common surgical emergency [1]. Life time prevalence rate of acute appendicitis is approximately one in seven and more common in men than women (8.6% versus 6.7%) [2]. About 310,000 appendectomies are performed/year in the United States, of which 250,000 have definite appendicitis, giving a negative appendectomy rate of about 15% to 30% [3,4,5].

The efficacy of antibiotic prophylaxis in patients undergoing appendectomy has been examined in several randomized and observational studies showing that appropriate use of antibiotics reduces the risk of SSI following appendectomy by 40-60% [18-29]. These antibiotics are continued in postoperative period with different courses and combinations according to each case.

This seems logical and necessary for perforated cases due to peritoneal and wound contamination. There is 3 times increase in wound infection, 15-fold increase in intra-abdominal abscess and mortality may be 50 times greater in complicated appendicitis [6]

Material and Methods

Cases of uncomplicated acute appendicitis undergoing emergency open appendectomy were included in this study.

Inclusion Criteria: All patients aged 10-60 years undergoing emergency open appendectomy for acute uncomplicated appendicitis, in the Department of General Surgery, IGMC Shimla were included in this study.

Exclusion Criteria: The following patients were excluded from the study:

1. Complicated appendicitis cases (appendicular mass, gangrene, perforation and abscess).
2. Patients with pregnancy
3. Patients with other co morbidities like immune compromised state, diabetes, carcinoma and patients on steroids.

4. Co morbid conditions requiring antibiotics.
5. Patients who had received antibiotics within 72 hours of admission
6. History of symptoms more than 3 days
7. Cases lost to follow up
8. Allergic to the respective antibiotics
9. Refused to give consent

A detailed history was taken and thorough clinical examination was done in each case. Appropriate investigations were done as per Performa. Written informed consent was taken in each case.

Results

The age of the patients in both the groups ranged from 10 to 60 years. Mean age in group A was (23.3±10) years and in group B was (26.6±12) years. The youngest patient in group A was 10 years of age, whereas in group B was of 11 years. The oldest patient in group A was 52 years old and in group B was of 60 yrs. Most of the patients in both the groups were in the age group of 10 to 20 years. In group A, the total males were 28(56%) and total females were 22(44%). Similarly in group B, there were 24 (48%) male and total females were 26(52%).

Table 1: Comparison of type of wound infection between two groups

Variable	Options	Group A % (number)	Group B % (number)
Type of wound infection	None	88% (22)	92.00% (23)
	Superficial Incisional	12% (3)	8.00% (2)
	Deep Incisional	0% (0)	0% (0)
	Organ/space Infection	0% (0)	0% (0)

p-value=0.621

5 patients (3 in Group A and 2 in Group B) developed wound infection. All the 5 patients developed superficial site infection. None of the patients developed deep surgical site or intra-abdominal infections in either of the two groups. There was no statistically significant difference between the two groups (p value- 0.621).

Discussion

5 patients (3 in Group A and 2 in Group B) developed wound infection. All the 5 patients developed superficial site infection. None of the patients developed deep surgical site or intra-abdominal infections in either of the two groups. There was no statistically significant difference between the two groups (p value- 0.621).

The overall incidence of post appendectomy wound infection in various studies was between 5 to 10% and mostly the infection was superficial surgical site infection. It is due to better operative techniques, better asepsis and better antibiotics.

Mean hospital stay in group A was 2.62 days and mean hospital stay in group B was 2.51 days. It was statistically insignificant (p-value = 0.821). In both groups mean hospital stay was 5.12 days in those patients who had wound infection.

Overall mean hospital visits in group A were 2.11 and mean hospital visits in group B were 2.09

Number of hospital visits were more in patients with wound infections with a mean of 3.50 visits in both the groups. This was because patients were called for wound assessment and aseptic sterile dressings.

Similar observation was made by Mohammed Salman et al [7]. A total of 390 patients were included in the study, out of which 192(49.2%) were in Group A and 198(50.7%) were in Group B. All patients received cefuroxime and metronidazole. Group A received a single dose of cefuroxime sodium and metronidazole half-an-hour before induction, while Group B received one more dose of the same antibiotics postoperatively. Number of surgical site infections was 15(7.8%) in Group A and 18(9.1%) in Group B which was statistically insignificant (p-value - 0.65).

Conclusion

Frequency of post operative wound infection is generally very low in uncomplicated appendicitis. The prolonged use of antibiotics post operatively is unnecessary, can increase antibiotic resistance, can produce side effects and increase cost of treatment.

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