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RESEARCH ARTICLE

SINGLE DOSE ANTIBIOTIC AFTER APPENDICECTOMY IN PATIENTS WITH NON-PERFORATED APPENDICITIS A RANDOMISED CONTROLLED STUDY

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ABSTRACT

Introduction: Appendicectomy is one of the commonly performed surgeries in the emergency setup in our medical college (THANJAVUR MEDICAL COLLEGE). **Aim of the Study:** The study was conducted to know the effect of antibiotics in reducing surgical site infection and abscess formation after open appendicectomy.(1) **Materials and Methods:** A randomised controlled study was done in our medical college (THANJAVUR MEDICAL COLLEGE) between April 2019 and April 2020 in two groups. Group A received a single dose of postoperative antibiotic and group B received antibiotics for 3 days. Both groups received single dose preoperative antibiotic.(2) **Results:** Both groups were compared and there was no significant difference in rates of Surgical site infections between both groups. None of the patients developed intra-abdominal collection.(3) **Conclusion:** Single dose of postoperative antibiotic was sufficient in reducing surgical site infection after appendicectomy (5).

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INTRODUCTION

Appendicectomy is one of the most frequently performed emergency surgeries in our hospital.All the patients undergoing appendicectomy in our hospital are given preoperative prophylactic antibiotics because various studies have proven the efficacy of antibiotics in reducing surgical site infection and intra abdominal infection postoperatively. (1-5). Cases of non-perforated and perforated appendicitis are categorized as clean contaminated and contaminated respectively. Because of heavy contamination of wound and peritoneal cavity patients with perforated appendicitis after appendicectomy are treated with a variable course of postoperative therapeutic antibiotics. (16,18). But the role of postoperative antibiotics in reducing infections and its complications in non perforated appendicitis is controversial. (7-9). Hence, astudy was conducted to determine the role of antibiotics in reducing SSIs and intra-abdominal abscess formation after open appendectomy in patients with non-perforated appendicitis.

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METHODS

Between April 2019 and April 2020, a randomized clinical trial was conductedafter getting approval from the Departmental research Ethics Committee in the Department of General surgery in Thanjavur Medical College. All patients admitted with acute appendicitis undergoing emergency open appendectomy were included in this study. Patients who were pregnant or immune compromised, subjects with diabetes, heart failure, anemia and those patients found to have complicated appendicitis (gangrenous, perforated, appendicular mass or abscess) were excluded. In this study, informed consent has been taken from all the patients. All the patients received preoperative dose of Inj.cefotaxime (1g, IV). Open appendicectomy was performed through McBurney incision. After surgery, patients with intraoperative diagnosis of Non perforated appendicitis were randomly divided into two groups. Patients who were given postoperative antibiotic (Inj.Cefotaxime 1g IV BD) for 3 days after surgery and given single dose of Cefotaxime after surgery. On discharge, the patients were advised for a follow-up visit in surgical clinic on the 7-14 postoperative days. Second follow-up visit was arranged a month later after surgery. Surgical site of infection (SSI) was defined as pus discharge from the wound, tenderness and edema.

Table 1. Comparison between group A (no postoperative antibiotics) and B (post operative antibiotics) after surgery

Group variables	Single dose postoperative antibiotic (n=50)	Postoperative Antibiotics (n=50)	P - value
Age (years)	25.04+_10.56	25.69+_10.76	
Hospital stay	4.5+_0.53	4.6+_0.49	
Surgical site infections	1	1	Non-significant
Visits after surgery	2	2	

Intra abdominal collection was defined as the fluid collection inside the peritoneal cavity confirmed by ultrasound or CT scan. We used the mean and standard deviation for descriptive analysis and to analyze the data we used Chi square test and Fischer's exact test, OR or PR with 95%. A p-value of <0.05 was considered as statistically significant.

RESULTS

During the study period, 100 patients were admitted with acute appendicitis for open appendicectomy. Patients diagnosed to have appendicitis (non-perforated) were randomized divided into two groups. Finally, 100 patients were subjected to statistical analysis. 50 patients received only a single dose of postoperative antibiotics (group A): while 50 patients received postoperative antibiotics for 3 days (group B).There was no statistically significant difference between age in the two groups. One patient in group A and one patient in group B developed SSIs (table1). After a followup of 30 days, none of the patients developed intra-abdominal collection. There was no significant difference between the rate of SSIs in two groups.

DISCUSSION

The incidence of postoperative SSIs after appendicectomy in patients with NPA has been reported to range from 0 % to 11% (15-18). There was no significant difference between the rates of SSIs among the patients with non perforated appendicitis between two groups in our study. Hence, Postoperative antibiotics for 3 days with single dose of preoperative antibiotic did not reduce the rate of SSIs in patients with non-perforated appendicitis (7,10). Preoperative antibiotics play a vital role in reducing surgical site infection after appendicectomy. There was no significant difference between the rates of SSIs among the patients with Non perforated appendicitis between two groups in our study. Hence, the addition of postoperative antibiotics with single dose of preoperative antibiotics did not reduce the rate of SSIs patients with Non perforated appendicitis (7-11). The high risk patients were excluded from the study. There was no antibiotic-related complication in both groups because of short course of antibiotics. In non perforated appendicitis, intra-abdominal abscess formation has rarely been reported after appendicectomy and it counts for 2-3% of patients in complicated appendicitis (15). Good surgical and aseptic techniques play a major role in reducing SSI's after appendicectomy rather than antibiotics. Increased rate of antibiotic related complications such as antibiotic induced diarrhea, antibiotic resistance, increased duration of hospital stay, cost of care etc due to inadvertent use of antibiotics (10). Recent studies shows that long-term antibiotic use even in patients with complicated appendicitis does not reduce the post operative infectious complication (16). In conclusion, single dose of preoperative and postoperative antibiotics was sufficient in controlling SSIs after appendicectomy for Non perforated appendicitis.

Postoperative antibiotics did not add an appreciable clinical benefit in these patient. Therefore, surgeons need to be cautious in using antibiotics after appendicectomy and single dose of antibiotic is sufficient to prevent Surgical site infection and good aseptic surgical technique is mandatory.

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