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Original Research Article

TO COMPARE THE DURATION OF SURGERY IN SINGLE DOSE INTRAVENOUS ANTIBIOTIC PROPHYLAXIS OVER NO ANTIBIOTIC PROPHYLAXIS IN THE PREVENTION OF WOUND INFECTION FOLLOWING LICHTENSTEIN TENSION FREE INGUINAL HERNIOPLASTY

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Abstract

Background: We conducted a study to compare the duration of surgery in single dose intravenous antibiotic prophylaxis over no antibiotic prophylaxis in the prevention of wound infection following Lichtenstein tension free inguinal hernioplasty

Methods: This prospective study was conducted in the Department of Surgery, Dr. Rajendra Prasad Government Medical College Kangra at Tanda from May 2018 to December 2019after being approved by institutional protocol review committe and ethics committee.50 patients were included in the study.These patients were randomised into two groups i.e. Group A (Antibiotic Group) and Group B (Non-antibiotic Group).

Results: The mean duration of surgery in Antibiotic group (Group-A) was 56.6±15.66 minutes whereas it was 50.2±9.62 minutes in Non-antibiotic group (Group-B). The mean duration of surgery was more in Antibiotic group (Group-A) as compared to Non-antibiotic group (Group-B), however the difference was not statistically significant (p= 0.088).

Conclusion: In our study, we concluded that statistically insignificant difference was found in the duration of surgery in Antibiotic and Non-antibiotic Group

Keywords: Duration of surgery, Antibiotic, Pre-operative

Introduction

The description of Lichtenstein tension free mesh repair introduced a new era in groin hernia repair. It is one of the most common procedures performed by general surgeons. Inguinal hernia repair is the most commonly performed operation in the United States, owing to a significant lifetime incidence and variety of successful treatment modalities. It offers many advantages, such as simplicity, effectiveness, minimal pain, early return to work, low recurrence rates and a high patient satisfaction. It is currently considered as the preferred method for the plastic reconstruction of inguinal region. Inguinal hernia repair is one of the most common procedures performed by general surgeons. Even though hernia is classified as a clean surgery, the reported incidence of wound infection varies from 0% to 9%.[1]

The risk of wound infection increases after introduction of prosthetic material in the body, which is attributed to the detrimental effect of the prosthesis on the host defense mechanism.[2] The fear of infection of the prosthetic mesh raised the question of the potential role of antibiotic prophylaxis. It has been shown that administration of prophylactic antibiotics may inhibit the adherence of bacteria to the prosthesis and subsequently their growth rates

In view of above consideration, we conducted this study to assess the role of single dose intravenous antibiotic prophylaxis over no antibiotic prophylaxis in duration of surgery following Lichtenstein tension free inguinal hernioplasty in patients with no other co-morbid conditions.

Material and Method

This prospective study was conducted in the Department of Surgery, Dr. Rajendra Prasad Government Medical College Kangra at Tanda from May 2018 to December 2019after being approved by institutional protocol review committe and ethics committee.50 patients were included in the study.These patients were randomised into two groups i.e. Group A (Antibiotic Group) and Group B (Non-antibiotic Group).

Inclusion criteria

- All Patients of both gender above the age of 18yearswith unilateral or bilateral inguinal hernia.

Exclusion criteria

- Patients with recurrent or strangulated inguinal hernia.

- Femoral hernia and giant scrotal hernia with massive defect.
- Below 18 years of age.
- Allergic to injection Amoxicillin+ Clavulanic acid.
- With systemic diseases like diabetes mellitus.
- Liver or renal impairment.
- Patients on steroid or antibiotic therapy within a week before surgery.
- Pregnant or lactating women.
- Immunocompromised patients will be excluded from the study.

Characteristics of the study

- **Participants**: 50 patients who underwent inguinal mesh hernioplasty.
- **Group**: Group A (Antibiotic Group) and Group B (Non-antibiotic Group)
- **Type of study**: Randomized control clinical study.
- **Randomization**: By alternate method
- **Intervention**: Surgery-Lichtenstein tension freeinguinal mesh hernioplasty
- **Medication**: Group A (Antibiotic Group): Injection Amoxicillin+ Clavulanic acid 1.2gram single dose was given within one hour before skin incision in antibiotic group. The administration of the drug was done intravenously in the pre- operating room. No more antibiotic was given to these patients in the post-operative period.
- Group B (Non -antibiotic group):10millilitre normal saline was given in non-antibiotic group.

Statistical analysis

Data were expressed as frequency, percentage, mean and standard deviation. Diagnostic values were calculated using MedCalc for Windows, version 19.1.17(Med Calc Software, Ostend, Belgium).

Results

The socio-demographic variable in both groups were comparable

Table 1: Mean duration of surgery

Groups	Mean duration of surgery (Minutes)
Antibiotic group (Group-A)	56.6±15.66
Non-antibiotic group (Group-B)	50.2±9.62

The mean duration of surgery in Antibiotic group (Group-A) was 56.6±15.66 minutes whereas it was 50.2±9.62 minutes in Non-antibiotic group (Group-B). The mean duration of surgery was more in Antibiotic group (Group-A) as compared to Non-antibiotic group (Group-B), however the difference was not statistically significant (p= 0.088).

Discussion

The present study was aimed to evaluate the role of single dose antibiotic prophylaxis in elective open inguinal mesh hernioplasty to prevent surgical site infection in the patients admitted in department of surgery, Dr. Rajendra Prasad Government Medical College Kangra at Tanda, during 1year period from May 2018 to December 2019. Total 50 patients were enrolled into the study after fulfilling the inclusion and exclusion criteria.

Since inguinal hernia repair represents one of the most frequently performed surgical procedure, [3] any improvement in their treatment could have a large medical and economic impact, especially a reduction in number of wound infections. Conversely, discarding the use of antibiotic prophylaxis in inguinal hernia repair could reduce the risks of toxic and allergic side effects of drugs, the possible development of bacterial resistance[4] or super-infection and reduce costs.

Conclusion

In our study, we concluded that statistically insignificant difference was found in the duration of surgery in Antibiotic and Non-antibiotic Group.

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