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To compare the efficacy of single dose versus conventional (multiple doses) antibiotic use in laparoscopic cholecystectomy in terms of hospital stay

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Abstract

Background: To compare the efficacy of single dose versus conventional (multiple doses) antibiotic use in laparoscopic cholecystectomy in terms of hospital stay

Methods: This study was carried out in the department of General Surgery Indira Gandhi Medical College Shimla (H.P.) on patients admitted with radiologically proven cholelithiasis.

Results: Mean of hospital stay in SD (Single dose) group was 1.62±0.78 days; however in patients of C (Conventional) group mean hospital stay was 2.48±0.84 days. P value for length of hospital stay was 0.001 which is statistically significant.

Conclusion: The hospital stay wise difference in both groups was found significant.

Keywords: Single dose, Conventional, Gallstone, Hospital stay

Introduction

Prevention of postoperative infection is an essential factor in improving the results of surgical procedures. Following the introduction of antibiotics and early clinical trials done in 1950; it has been reported that no benefit has been derived in terms of control of infection rate with antibiotic prophylaxis.[1-3] The antibiotic selected should be according to the activity of agent against the most common organism encountered during surgical procedure and the antibiotic should have a large volume of distribution with longer half-life and should be safe in terms of renal and hepatic toxicity. A single, effective and nontoxic drug is used to prevent infection by a specific microorganism or to eradicate an early infection. Single or multiple dosage regimes of antibiotics will be depending upon the patient resources, the surgical condition of the patient and the vulnerability of the patient for infection. [4]

Material and Method

Study Setting: This study was carried out in the department of General Surgery Indira Gandhi Medical College Shimla (H.P.) on patients admitted with radiologically proven cholelithiasis.

Study Design

This was prospective study in which comparison of outcome in the form of wound sepsis between two groups was done. 1st was SD group (Received Single dose of pre-operative antibiotic) and 2nd was C group (Received Single dose Pre-operative antibiotic followed by post-operative antibiotic for 5 days). Laparoscopic cholecystectomy was done and Comparison of outcome in the form of wound sepsis was done between two groups.

Sample Size

A total of 100 patients randomly selected with ultrasound proven symptomatic cholelithiasis and admitted for elective laparoscopic cholecystectomy were included in the study.

Study Population

Inclusion criteria

All patients with radiologically proven cholelithiasis.

Exclusion criteria

- Patients with acute cholecystitis.
- Patients with diabetes mellitus.
- Patient with immunosuppression.
- Patients with intra-operative bile spillage.
- Patients with intra-operative stone spillage.
- Patients with empyema gall bladder.
- Patients not willing to give consent.
- Patient unfit for general anaesthesia.
- Pregnant woman with cholelithiasis.
- Patients with underlying bleeding diathesis.
- Patients who had intra-operative complications or were converted to open cholecystectomy.

Method

Patients presenting to General surgery OPD at I.G.M.C. Shimla with pain abdomen subsequently diagnosed radiologically with cholelithiasis were included in this study after duly informing about the nature of study and taking informed consent.

Subsequently patients were divided into two groups

Group-1 [SD (Single Dose)]:- Patients who were given single dose of antibiotic (Inj. Cefuroxime 1.5gm) 30 to 60 min before giving skin incision.

Group-2 [C (Conventional)]:- Patients who were given single dose of antibiotic (Inj. Cefuroxime 1.5gm) 30 to 60 min before giving skin incision followed by same antibiotic for five post-operative days.

Laparoscopic Cholecystectomy was performed.

Statistical Analysis

All data were expressed as mean +/- standard deviation. Data was analysed for comparison of outcome in the form wound sepsis occurring in two groups and P value was calculated. P value less than 0.05 was considered to be statistically significant.

Results

Total number of patients in our study were 100, 50 in each SD and C group. Out of 100 patients, 13 patients were male and 87 were female.

Mean of hospital stay in SD group was 1.62±0.78 days; however in patients of conventional group mean hospital stay was 2.48±0.84 days. P value for length of hospital stay was 0.001 which is statistically significant.

Table 1: Length of Post-Operative Hospital Stay

Group	Length of hospital stay (days)		
	Mean	Std. Deviation	P value
SD	1.6200 days	0.7796	<0.001
C	2.4800 days	0.8389	

Discussion

There have been no studies in Indira Gandhi Medical College Shimla comparing the efficacy of single dose of antibiotic and conventional use (multiple doses) of

antibiotics in patients undergoing laparoscopic cholecystectomy.

Mean duration of post-operative hospital stay in SD group was 1.62±.78 days and in C group was 2.48±.84 days with P value of <0.001 which is statistically significant. So indicating that single shot antibiotic is beneficial to patients in the form of reduced post-operative hospital stay. In a study performed by **Vagenas K et al.** titled "Laparoscopic cholecystectomy: A report from a single center" in 2006 average hospital stay was found to be 2.29 days. Results of our study are comparable to this study.[5]

Conclusion

The hospital stay wise difference in both groups was found to be significant.

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