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A COMPARISON OF HOSPITAL STAY IN ELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY WITH AND WITHOUT ANTIMICROBIAL PROPHYLAXIS

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ABSTRACT

Background: Laparoscopic cholecystectomy has become the gold standard treatment for gallstone disease. Aim of the study is to compare the laparoscopic cholecystectomy with and without antibiotic prophylaxis in term of hospital stay. **Method:** This prospective study was carried out in the department of General Surgery Indira Gandhi Medical College Shimla (H.P) on patients admitted with diagnosis of cholelithiasis, over a period of 1 year from 1st August, 2018 to 31st July, 2019.Total of 100 patients were included in the study, and were randomly divided into two groups. Group A was control group in which antibiotic was given and group B was case group in which no antibiotic was given. **Result**. The difference was statistically not significant with P value of 1. Both the groups were comparable in terms of hospital stay. **Conclusion:** In patients undergoing elective LC, antibiotic prophylaxis have no effect on hospital stay, there was no statistical difference in both the groups regardless of the use of antimicrobials.

KEYWORDS: Prophylactic antibiotics, Laparoscopic Cholecystectomy, Surgical site Infections.

INTRODUCTION

Gallstone is the most common disease of biliary system. Cholelithiasis is one of the commonest disease throughout the world. Its prevalence has geographical variations. It is estimated that there are about one million newly diagnosed cases annually that are hospitalized. Gall stones have higher prevalence in female and prevalence increases with the age, from 4% in 3rd decade to 27% in 7th decade. This may be related to the changes in the biochemistry of the bile with age. In this era of minimal invasive surgery; laparoscopic cholecystectomy has become gold standard for the treatment of gall stone disease. Laparoscopic cholecystectomy has spread rapidly worldwide mainly because postoperative pain is less, recovery is fast, cosmetic results are better, hospital stay is shorter, low morbidity and mortality, including low rate of post operative infection than with the open procedure.

AIM AND OBJECTIVES

Aim of the study is to compare the hospital stay in elective laparoscopic cholecystectomy with and without antibiotic prophylaxis.

MATERIAL AND METHOD

This prospective study was carried out in the department of General Surgery Indira Gandhi Medical College Shimla (H.P) on patients admitted with diagnosis of cholelithiasis, over a period of 1 year from 1st August, 2018 to 31st July, 2019.

Inclusion criteria

All patients with ultrasonographically proven cholelithiasis.

Exclusion criteria

Patients with acute cholecystitis, diabetes mellitus, immunocompromised status, intra-operative bile spillage/stone spillage, empyema gall bladder, gangrenous gall bladder, Pregnant woman with cholelithiasis, cholangititis, pancreatitis, choledocholithiasis, previous ERCP.

Methods

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

In every case, detailed history was taken, thorough clinical examination was done and required investigations were done including USG abdomen. Patients had undergone following investigations:-

- ✓ CHG, RFT, S.Electrolytes, RBS, LFT, Viralmarker, Ultrasound Abdomen, Chest X-ray, ECG.

Total of 100 patients were included in the study, Patients were distributed into group A and B randomly.

Group A (With antibiotic prophylaxis):- patients were given single dose of antibiotic (Inj. Cefuroxime 1.5gm) at the time of induction of anaesthesia. Same antibiotic was given intravenously for two days postoperatively and then orally for next 5 days.

Group B (Without antibiotic prophylaxis):- In this group no antibiotic was given pre operatively, intra operatively and post operatively.

Laparoscopic Cholecystectomy was performed in routine operation theatres. Following parameters were recorded: Operation time, Callot's triangle Conversion to O/C from L/C, Need for drain and any complications.

The collected data was analysed and incidence of post operative wound site infection and hospital stay was compared in both the groups of patients receiving antibiotic prophylaxis and not receiving antibiotic prophylaxis.

RESULTS AND ANALYSIS

The present study was a 1-year prospective study conducted in the department of general surgery, Indira Gandhi Medical College, Shimla, in a time period of 1 year from 1st August, 2018 to 30th July, 2019 which included a total of 100 patients aged between 16 to 75 years of age, divided into two groups, study group(group B) consisting of 50 patients in which no prophylactic antibiotic was given and control group(group A) consisting of another 50 patients in which prophylactic antibiotic was given. Patients of either sex having radiologically proven cholelithiasis and fulfilling the inclusion or exclusion criteria were enrolled in the plan of this study. In our study, youngest patient was 16 years of age and eldest was 75 years old. The mean age was 43 years.

TABLE 1: Gender wise distribution of patients in both the groups.

Gender	Control Group Number (%)	Case group Number (%)	Total Number (%)
Male	06(12%)	09(18%)	15(15%)
Female	44(88%)	41(82%)	85(85%)
Total	50	50	100

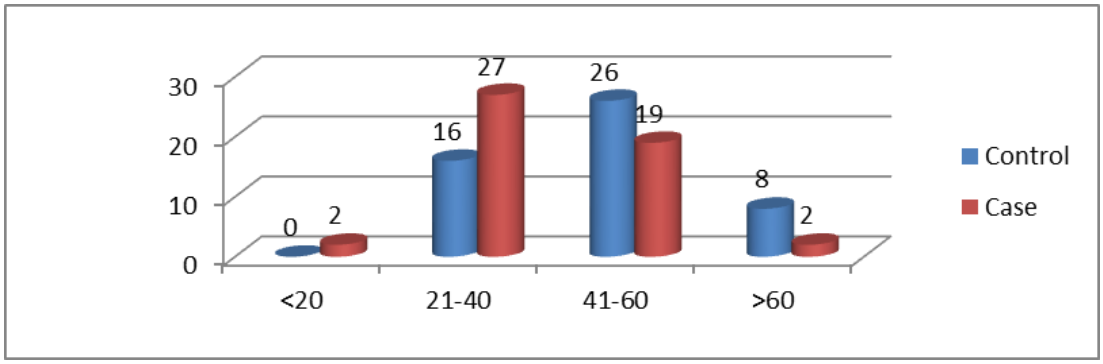

Table: 2 Age wise distribution of patients in both groups.

Hospital Stay

In the present study 98% of the patients were discharged on post operative day 2, one patient in case group and one patient in control group was discharged on post operative day 4(due to persistent drain output and soakage from umbilical port site wound). P value was 1 which was statistically insignificant. Therefore result was comparable among the groups. (Table 3 and Fig.1)

Table 3: Comparison of hospital stay between two groups.

Hospital stay (*Days*)	Control group Number (%)	Case group Number (%)	Total Number (%)
2-3	49(98%)	49(98%)	98(98%)
4-5	01(2.0%)	01(2.0%)	02(2.0%)
Total	50	50	100

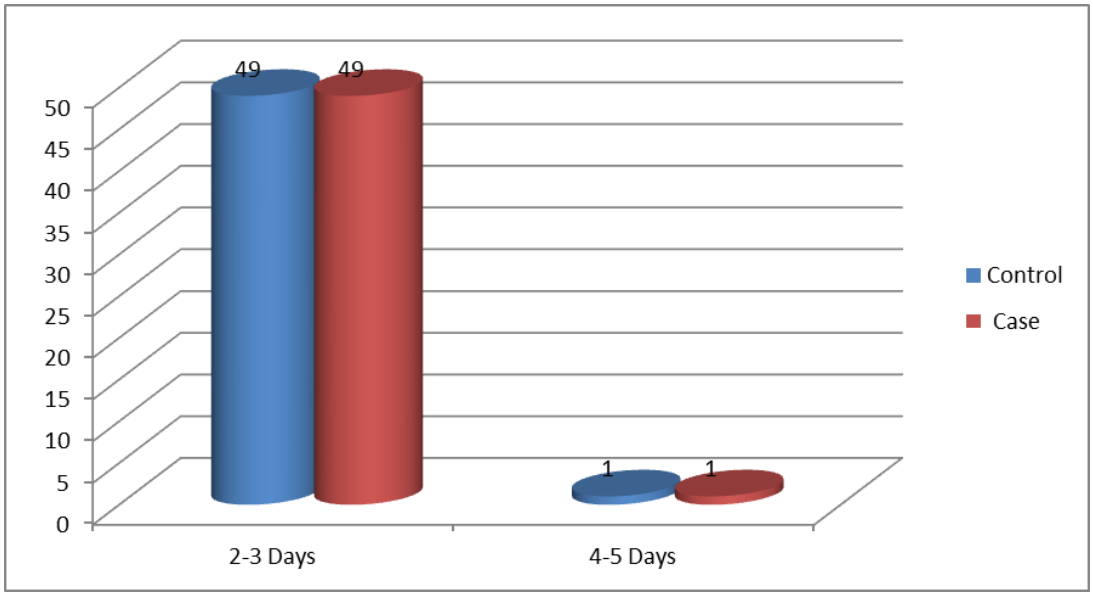

Figure 1: Comparison of hospital stay between two groups.

DISCUSSION

Cholelithiasis is a common disease having a incidence of 2-29%. As laparoscopic cholecystectomy is now the gold standard of management of patients with gallstones, evaluation of antibiotic prophylaxis and its indication for laparoscopic cholecystectomy is warranted.

Several prospective studies have concluded that the use of prophylactic antibiotic in low-risk patients undergoing LC is unnecessary, because the rate of postoperative infective complications is already low in such patients, and therefore the use of prophylactic antibiotics will not reduce the rate of postoperative SSIs and does not affect the hospital stay.

Nilay Mandal et al. in 2015 performed a prospective randomized trial to study LC without prophylactic antibiotics. 102 patients with symptomatic gallstones were operated by laparoscopic technique without receiving preoperative antibiotics and studied over a period of 1.5 years. There was no statistical difference in term of hospital stay, post operative pain and SSIs in both the groups regardless of the use of antimicrobials and fulfills the aims and objectives of the study.

Similarly Koc M et al. in 2003 studied the role of prophylactic antibiotics in elective laparoscopic cholecystectomy. There was no statistical difference between the two groups in terms of post operative pain, operative SSIs and hospital stay.

In another study performed by Kutha SA et al. in 2006, there was no statistical difference between the two groups in terms of post operative pain and SSIs.

Similarly Yildiz et al. (2009) performed a prospective randomized trial to evaluate the effect of antibiotic prophylaxis on the development of infectious complications in laparoscopic cholecystectomy. Overall rate of infection was 3.36%. 4 out of 105 (3.8%) patients in control group and 3 out of 103 (2.9%) patients in case group developed infection. Both the groups were comparable in term of SSIs, post operative pain and hospital stay.

Similarly in 2017 Hyung Jin Kim et al. had performed a prospective randomized trial to study LC without prophylactic antibiotics. Patients were randomized into 2 with the aim of including 100 patients in each group. In conclusion, based on this data, there was no difference in the rate of postoperative seromas, postoperative SSIs, post operative pain and hospital stay for patients undergoing elective LC regardless of the use of prophylactic antibiotics.

In the present study 98% of the patients were discharged on post operative day 2, one patient in case group and one patient in control group was discharged on post operative day 4(due to persistent drain output and soakage from umbilical port site wound). P value was 1 which was statistically insignificant. Therefore result was comparable among the groups.

CONCLUSION

Thus, in patients undergoing elective LC, antibiotic prophylaxis have no effect on hospital stay, results are comparable in both the groups regardless of the use of antimicrobials. It seems justified only in high-risk patients such as patients with acute cholecystitis, diabetes mellitus, immunocompromised status, intra-operative bile spillage/stone spillage, empyema gall bladder, gangrenous gall bladder, cholangitis, choledocholithiasis, severe gall stone induced pancreatitis, previous ERCP to reduce the post operative infective complications.

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