

COMPARISON OF VARIOUS FACTORS IN ELECTIVE LAPAROSCOPIC
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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 post operative SSIs, post operative pain, hospital stay and post operative recovery rate in low risk group patients. **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:** There was no statistical difference in both the groups in terms of surgical site infection, post operative pain, hospital stay and post operative recovery rate regardless of the use of prophylactic antibiotics in low risk groups. **Conclusion:** As elective LC is a clean surgery, therefore In low-risk patients antibiotic prophylaxis does not seem to affect the incidence of post operative SSIs, post operative pain, hospital stay and post operative recovery rate in low risk group patients. It is justified only in high-risk patients.

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

INTRODUCTION

Cholelithiasis is one of the commonest cause of morbidity throughout the world. its incidence is increases with age. The credit of performing first ever cholecystectomy goes to Carl Langenbach, who performed it on 15 July, 1882 at the Lazarus-Krankenhaus in Berlin on a 42 years old man. The first laparoscopic cholecystectomy was performed by Prof. Dr Erich Muhe in Boblingen, Germany, on September 12, 1985. In this era of minimal invasive surgery; laparoscopic cholecystectomy has become gold standard for gall stone disease, mainly because postoperative pain is less, recovery is more rapid, cosmetic results are better, hospital stay is shorter, low morbidity and mortality including low rate of post operative infection and early return to work than with the open procedure.

AIM AND OBJECTIVES

Aim of the study is to compare the elective laparoscopic cholecystectomy with and without antibiotic prophylaxis in terms of post operative SSIs, post operative pain, hospital stay and post operative recovery rate in low risk group patients.

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.
- Patients with diabetes mellitus.
- Patients with immunocompromised status.
- Patients with intra-operative bile spillage/stone spillage.
- Patients with empyema gall bladder, gangrenous gall bladder.
- Pregnant woman with cholelithiasis.
- Patients with cholangitis, pancreatitis, choledocholithiasis.
- Patients with 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 each case, detailed history was taken, thorough clinical examination was done and required investigations were done. 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 anatomy, Adhesions, Intraoperative

bile/stone spillage, Whether empyema gall bladder, gangrenous gall bladder, Conversion to O/C from L/C, Need for drain, any complications.

The collected data was analysed and incidence of post operative wound site infection was looked for in both 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. In our study, youngest patient was 16 years of age and eldest was 75 years old. The mean age was 43 years. Patients of either sex having radiologically proven cholelithiasis and fulfilling the inclusion or exclusion criteria were enrolled in the plan of this study, and various factors were studied such as post operative pain, duration of operation, hospital stay, no. of hospital visits, wound infection, type of wound infection.

Table 1: Age wise distribution of patients in both groups.

Age Group (Years)	Control group Number (%)	Study group Number (%)	Total
<20	0(0.0%)	02(4%)	02(2.0%)
21-40	16(32%)	27(54%)	43(43%)
41-60	26(52%)	19(38%)	45(45%)
>60	08(16%)	02(4%)	10(10%)
Total	50	50	100

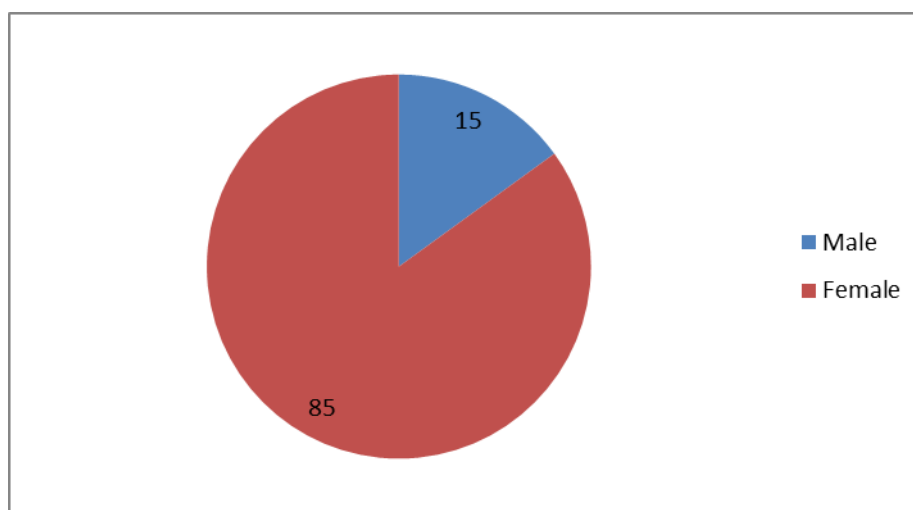


Figure 1: Gender wise distributions of total patients.

I. Duration of Operation

In the present study 94% of patients of both the groups had duration of operation between 30-50 minutes and 6 patients had duration of operation between 51-70

minutes (due to dense adhesion present between gallbladder, liver and omentum and unclear Callot's triangle anatomy). P value was 1 which was statistically insignificant. (Table 2)

Table 2: Comparison of duration of operation between two groups.

Duration of operation (minutes)	Control group Number (%)	Case group Number (%)	Total Number (%)
30-50	47(94%)	47(94%)	94(94%)
51-70	03(6.0%)	03(6.0%)	06(6.0%)
Total	50	50	100

II. Post Operative Pain

In our study, post operative pain was similar (as assessed by VAS, it was 'hurts little bit,') in both the groups. (Figure 2)

PAIN MEASUREMENT SCALE

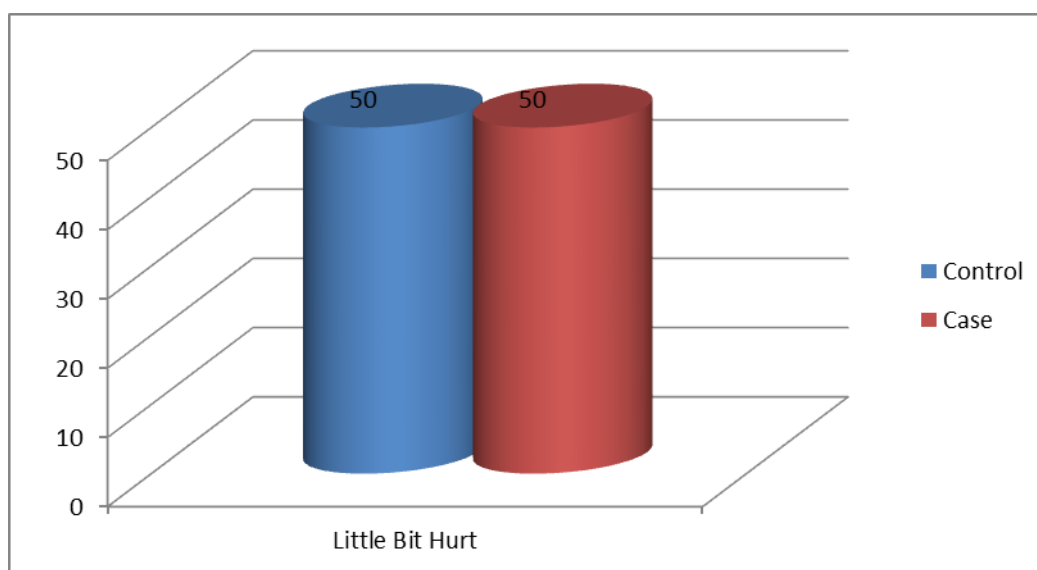
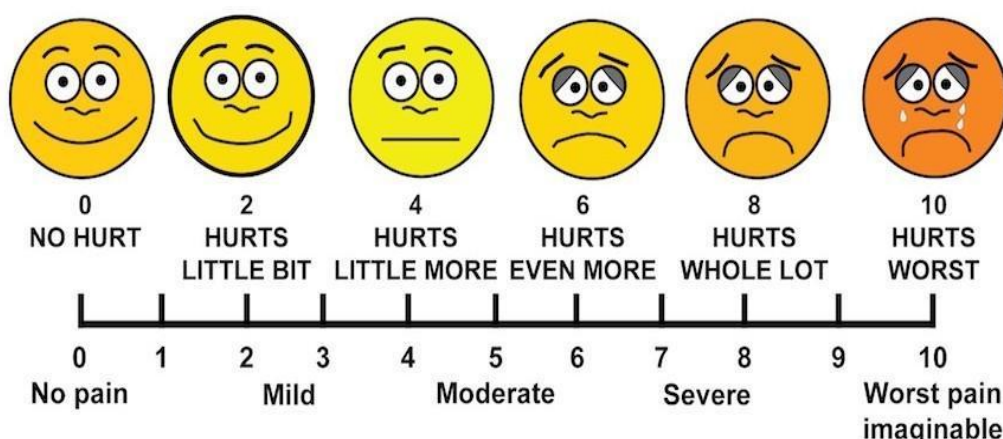


Figure 2: Comparison of post operative pain between two groups.

III. No. of hospital visits

In our study 99% of the patients had 2 hospital visits; one patient from case group had 3 hospital visits due to

wound sepsis. P value was 1 which was statistically insignificant. (Table 3)

Table 3: Comparison of no. of hospital visits between two groups.

No. of hospital visits	Control group Number (%)	Case group Number (%)	Total Number (%)
Two visits	50(100%)	49(98%)	99(99%)
Three visits	00(0%)	01(2.0%)	01(1.0%)
Total	50	50	100

IV. 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. (Table 4)

Table 4: 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

V. Wound Infection

In our study the overall postoperative infective complications were 3% (3 out of 100 patients), 2% in

control group (1 out of 50 patients) and 4% in case group (2 out of 50 patients). All of them were superficial surgical site infection. (Table 5 and table 6)

Table 5: Comparison of wound infection between two groups.

Wound infection	Control group Number (%)	Case group Number (%)	Total Number (%)
Present	01(2.0%)	02(4.0%)	03(3.0%)
Absent	49(98%)	48(96%)	97(97%)
Total	50	50	100

Table 6: Comparison of type of wound infection between two groups.

Type of wound infection	Control group Number (%)	Case group Number (%)	Total Number (%)
NONE	49(98%)	48(96%)	97(97%)
SUPERFICIAL INCISIONAL	01(2.0%)	02(4.0%)	03(3.0%)
DEEP/INTRA ABDOMINAL SEPSIS	00(0%)	00(0%)	00(0%)
Total	50	50	100

DISCUSSION

Cholelithiasis is one of the 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 affect various factors significantly such as SSIs, post operative pain, hospital stay, post operative recovery.

Similarly Koc M et al. in 2003 studied the role of prophylactic antibiotics in elective laparoscopic cholecystectomy. The overall rate of postoperative infective complications was comparable between two groups, in control group it was 2.04% and in case group

it was 2.3%. There was no statistical difference between the two groups in terms of infective complication, post op. pain, hospital stay and post operative recovery.

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, hospital stay, post operative recovery rate.

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 wound infection occurred in 2 out of 50 patients (4%) in case group and 1 out of 50 patients (2%) in control group, all of them had superficial SSI. Both the groups were comparable in terms of surgical site infection, post operative pain, hospital stay and post operative recovery rate regardless of the use of prophylactic antibiotics.

CONCLUSION

In conclusion, based on this data, there was no difference in the rate of postoperative SSIs, post operative pain, hospital stay and post operative recovery rate for patients undergoing elective LC regardless of the use of prophylactic antibiotics. Thus, in patients undergoing elective LC, antibiotic prophylaxis 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.

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