

Early Cholecystectomy Vs Delayed Cholecystectomy for Gall Stone Pancreatitis

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ABSTRACT

Objective: To compare the outcome of early cholecystectomy and delayed cholecystectomy in patients with gallstone pancreatitis.

Study design: Randomized clinical trial.

Setting: Department of East Surgical Ward, Mayo Hospital, Lahore

Duration of study: Nine months

Methodology: Total 62 patients; 12 to 60 years of age, prepared for general anesthesia and open cholecystectomy were analyzed for the study. The patients were distributed into two groups by random assignment. Group A (early cholecystectomy), Group B (delayed cholecystectomy). The clinical variables were evaluated statistically.

Results: The male to female ratio was 1:5.2. In Group A the average hospital stay was significantly less than in Group B, (p value= 0.000). The morbidity and mortality was statistically insignificant in both groups (p-values 0.185 & 0.238 respectively).

Conclusion: Early cholecystectomy has a better outcome as compared to delayed cholecystectomy for gallstone pancreatitis.

Keywords: Early cholecystectomy, Delayed cholecystectomy, Gallstone pancreatitis, Gallstones

INTRODUCTION

Gallstones are the leading cause of pancreatitis accounting for 50-70% of all cases¹. Merely treating the pancreatitis does not cure the patient because symptoms will recur unless the underlying cause (i.e., gallstones) is treated. The standard treatment of gallstones is cholecystectomy. So, the plan of management of Gallstone pancreatitis comprises of treatment of pancreatitis followed by cholecystectomy. After the symptoms of pancreatitis have settled the patient can be offered early cholecystectomy in the same hospital admission or he can be advised delayed cholecystectomy after a period six weeks of rest³.

Both treatment plans are standard and have their own merits and demerits. In patients with mild to moderate gallstones pancreatitis, a policy of early cholecystectomy reduces the hospital stay⁴. Whereas delayed cholecystectomy lengthens the hospital stay. Initially it was thought that delayed cholecystectomy might reduce the mortality and morbidity. Now it is proposed that delayed cholecystectomy may result in recurrence of gallstones pancreatitis with may increase the mortality, morbidity and length of hospital stay⁵.

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MATERIAL AND METHODS

This randomized clinical trial was conducted in East Surgical Unit of Mayo Hospital Lahore during a period of nine months. Non probability purposive sampling technique was used. The calculated sample size with 10% margin of error, 85% power of the study, taking magnitude of morbidity (post-operative wound infect bile duct injury) i.e. 17.4% in delayed vs 20.4% in early cholecystectomy was 30 cases in each group. Patients of the gallstone pancreatitis diagnosed on history, abdominal examination & investigations like serum amylase & ultrasound abdomen with the age 12-50 years either sex and Ranson's criteria 3-5 indicating mild to moderate pancreatitis were included in the study. While patients with co morbid conditions and other risk factor like alcohol intake, drug abuse, ERCP, trauma on history were excluded.

The patients were admitted through Emergency. The patients having Ranson's criteria 3-5 were included in the study. Patients were managed initially conservatively with IV antibiotic, analgesia & fluids and were kept NPO (nothing per orum) for two weeks. Then the patients were distributed into two groups by random assignment. Informed consent for the operation was obtained and patients were explained about the procedure. Group A was comprised of patients in which early cholecystectomy was done and the patients in group B were discharged home after initial management and called again for delayed cholecystectomy after 6 weeks. Open cholecystectomy was done through standard

Right Subcostal Incision. All the patients were followed postoperatively by 1 week, 2 weeks, & 3 weeks interval and morbidity (post-operative wound infection and bile duct injury), mortality & hospital stay in both groups were assessed.

All the data was tabulated and analyzed by using computer soft ware SPSS. Descriptive statistics like mean & SD for age, frequency and percentage for gender were measured.

Chi square test was applied for comparing two groups for qualitative variables like morbidity (postoperative wound infection & bile duct injury). Independent sample t-test was applied for comparing two groups for hospital stay. In cases $p \leq 0.05$ was considered as significant.

RESULTS

In this study, 62 patients were equally divided into two groups; Group A and B in gallstone pancreatitis. The study was conducted in East Surgical Ward, Mayo Hospital Lahore. There were 5 males (16.12%) and 26 females (83.87%) in Group A while in Group B, 5 males (16.12%) and 26 females (83.87%). Male to female ratio was 1:5.2 in both groups (Table 1).

Table 1

Variables		Group A	Group B
Mean age		40.22	53.51
Mean hospital stay		7.19	11.83
Mortality	1 st Week	0	2
	2 nd Week	0	0
	3 rd Week	0	0
Morbidity	1 st Week	2	5
	2 nd Week	0	0
	3 rd Week	0	0

The average age of the patients was 46.87±8.86 years. The average age of the patients in Group A was 40.22±5.42 years as compared to 53.51±6.24 years in Group B. The average hospital stay was 9.51±3.24 days. In Group A the average hospital stay was significantly less than Group B, p value (0.000). Two patients died in Group B. No mortality was seen in Group A. The p value was insignificant i.e., 0.238. In second & third week, no more mortality was noted. There were 7 patients who presented with mild morbidities like wound infection in which 5 patients were treated in Group B and 2 in Group A. The p value was insignificant 0.185. Moreover in the 2nd and 3rd week no morbidity was seen.

DISCUSSION

The salient features of acute pancreatitis are severe upper abdominal pain and markedly elevated pancreatic enzyme levels in the blood and urine. The migration of biliary calculi or impaction of a stone at

the ampulla of Vater is the probable cause of gallstone pancreatitis.⁵ Mostly, the diagnosis is made by clinical, radiological and laboratory findings. The combination of abdominal pain, nausea, raised amylase levels and radiologically confirmed biliary calculi lead to the diagnosis of acute gallstone pancreatitis. The laparotomy may be required to rule out other extrapancreatic conditions in 5% of cases⁶.

The original Ranson's criteria are still widely used in spite of modifications. A study showed that mortality was 2% in patients with Ranson score 0-2, 15% with Ranson score 3-4, 40% with score 5-6 and 100% with score 7-8.⁷ Other scoring system is APACHE II. Wilson et al analyzed 160 patients and noted that none of the patients with score below 10, died⁸.

The common indications for surgery in gallstone pancreatitis are; diagnosis, treatment of pancreatitis, treatment of complications, amelioration of ongoing pancreatitis, and prevention of recurrence of pancreatitis. Increased morbidity due to gallstone pancreatitis can be controlled by cholecystectomy.⁹

The first report on early surgery was published by Acosta et al. According to this study, 86 patients with acute pancreatitis were treated conservatively, and the mortality was 16% and the mean hospital stay was 25 days. Whereas, cholecystectomy was done in 46 cases and mortality was found to be 2% and the mean hospital stay was 13 days.¹⁰ Ranson et al. noted that early surgery causes a dramatic increase in mortality.¹¹

Stone et al. found mortality rates of 2.8% and 0%, respectively in a study on early surgery and conservative approach.¹² Kelly et al. reported that early cholecystectomy in the first 48 hours in gallstone pancreatitis decreases the mortality and complication rates from 15.1% and 30.1%, respectively, to 2.4% and 5.1%¹³. Delayed cholecystectomy performed six weeks after the resolution of pancreatitis with conservative treatment seems to be a better approach.

Delayed cholecystectomy may regress the inflammation. Another benefit of delayed cholecystectomy is that it may be performed laparoscopically. According to Turkish study, delayed cholecystectomy is associated with a 20-23% rate of recurrent pancreatitis. Early cholecystectomy was done in 98 patients (51%), delayed cholecystectomy in 46 (24%) and elective surgery in 48 (25%). The complication rates in the early, delayed and elective surgery groups were 20.4%, 17.4% and 8.3%, respectively. Mortality was 5.1% and 4.3% in the early and delayed cholecystectomy groups, respectively; no death in the elective surgery group was reported¹⁴.

Rosing et al in an observational study consisting of a retrospective and a prospective group used the policy of early cholecystectomy for the prospective group. The length of hospital stay and time from admission to definitive operation and complications were noted. The length of hospital stay was 7 days in retrospective group versus 4 days in prospective group. The time from admission to cholecystectomy was 5 days in retrospective group versus 2 days in prospective group. Complication rates were similar and there was no death in either group¹⁵.

Tang et al. concluded that cholecystectomy was safe in patients recovering from gallstone pancreatitis (mortality rate, 0%; bile duct injury, 0.7%. Moreover, early cholecystectomy could be recommended in patients with mild pancreatitis. The operation during first week following admission was associated with an increase in operative complications and longer hospital stay in patients with moderate to severe pancreatitis^{16,17}. Alimoglu et al conducted a study of 43 patients with gallstone pancreatitis. He concluded that waiting to perform cholecystectomy might result in recurrent biliary pancreatitis, with increase in morbidity and length of hospital stay¹⁸.

According to the results of the present study, average hospital stay was 9.51±3.24 days in Group A, the hospital stay was significantly less than Group B which is comparable to the studies of international literature¹⁹. Two patients died in Group B during convalescence period due to the complications of pancreatitis. No mortality was seen in Group A. The morbidity was noted in 3 patients in Group B. No morbidity was noted in Group A. Statistically, the mortality and morbidity were found insignificant in the present study. The recurrence of gallstone pancreatitis was seen in 2 patients of group B and these patients were readmitted in the ward.

CONCLUSION

Cholecystectomy should be performed during the same hospital admission in patients with mild to moderate gallstone pancreatitis as soon as the pancreatitis is settled. In severe gallstone pancreatitis, cholecystectomy is delayed after resolution of inflammatory response and clinical recovery. So, early cholecystectomy has a better outcome as compare to delayed cholecystectomy for gallstone pancreatitis.

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