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Research Article

**RESULTS OF EARLY VS DELAYED CHOLECYSTECTOMY  
FOR IN PATIENTS WITH GALL STONE PANCREATITIS****<sup>1</sup>Dr Ammara Khaliq, <sup>2</sup>Dr Saqib Nasrullah, <sup>3</sup>Dr Eijaz Ahmed**<sup>1</sup>Nishtar Medical University, Multan<sup>2</sup>Nishtar Medical University, Multan<sup>3</sup>Nishtar Medical University, Multan**Article Received:** August 2020**Accepted:** September 2020**Published:** October 2020**Abstract:**

**Aim:** To compare the results of early cholecystectomy and delayed cholecystectomy in patients with pancreatitis and gallstone disease.

**Study design:** Randomized clinical trial.

**Place and Duration:** In the Surgical Unit-II of Nishtar Hospital, Multan for one-year duration from June 2019 to June 2020.

**Methodology:** 62 patients in total; The study included people aged 12 to 60, prepared for general anesthesia and open cholecystectomy. The patients were randomized into two groups. Group A (early cholecystectomy), Group B (delayed cholecystectomy). Clinical variables were statistically assessed.

**Results:** The male to female ratio was 1: 5.2. In group A, the mean hospital stay was significantly shorter than in group B ( $p$ -value = 0.000). Morbidity and mortality were statistically insignificant in both groups ( $p$ -values 0.185 and 0.238, respectively).

**Conclusion:** Early cholecystectomy gives better results than delayed cholecystectomy due to gallstone pancreatitis.

**Key words:** early cholecystectomy, delayed cholecystectomy, pancreatitis with gallstone disease, gallstones

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**INTRODUCTION:**

Gallstones are the leading cause of pancreatitis and account for 50-70% of all cases. Mere treatment of pancreatitis does not cure the patient as the symptoms will continue to recur unless the underlying cause (ie gallstones) is treated. The standard treatment for gallstones is cholecystectomy. Thus, the treatment plan for gallstone pancreatitis includes treating pancreatitis followed by cholecystectomy. After the symptoms of pancreatitis have resolved, the patient may be offered early cholecystectomy as part of the same hospital admission, or be advised to postpone cholecystectomy after a six-week rest period. Both treatment plans are standard and have advantages and disadvantages. In patients with mild to moderate pancreatitis due to gallstones, an early cholecystectomy policy shortens hospital stay. In contrast, delayed cholecystectomy extends the hospital stay. It was initially thought that delayed cholecystectomy could reduce mortality and morbidity. It is now proposed that delayed cholecystectomy may result in a recurrence of gallstone pancreatitis which may increase mortality, morbidity and length of hospital stay.

**MATERIAL AND METHODS:**

This randomized clinical trial was conducted at the Surgical Unit-II of Nishtar Hospital, Multan for one-year duration from June 2019 to June 2020. Non probability purposive sampling technique was used. Calculated sample size with a 10% margin of error, 85% study power based on morbidity (post-operative biliary damage due to wound infection), i.e. 17.4% for a delayed versus 20.4% for early cholecystectomy, 30 cases in each group. The study included patents for gallstone pancreatitis with a history, abdominal examination, and examinations, such as serum amylase and abdominal ultrasound at 12-50 years of age for both sexes, and Ranson criteria 3-5 indicating mild to moderate pancreatitis. While

patients with comorbidities and other risk factors such as alcohol consumption, drug abuse, ERCP, history of trauma were excluded. The patients were admitted by the ambulance service. The study included patients meeting Ranson 3-5 criteria. Patients were initially treated conservatively with intravenous antibiotic, analgesics and fluids, and were kept NPO (nothing per oral) for two weeks. The patients were then divided into two groups by random assignment. The informed consent to the operation was obtained and the procedure was explained to the patients. Group A included patients who underwent early cholecystectomy, and group B patients were discharged home after initial treatment and recalled for delayed cholecystectomy after 6 weeks. An open cholecystectomy was performed through a standard right subcostal incision. All patients were followed at 1-week, 2-week and 3-week intervals and assessed morbidity (post-operative wound infection and bile duct damage), mortality, and hospital stay in both groups. All data was compiled and analyzed using the SPSS computer software. Descriptive statistics such as mean and standard deviation of age, frequency, and percentage for gender were measured. The Chi-square test was used to compare the two groups for qualitative variables such as morbidity (postoperative wound infection and bile duct damage). The independent Student's t-test was used to compare the two groups while in hospital. In cases  $p \leq 0.05$  was considered significant.

**RESULTS:**

In this study, 62 patients were evenly divided into two groups; Groups A and B in pancreatitis with gallstone disease. In group A there were 5 men (16.12%) and 26 women (83.87%), while in group B there were 5 men (16.12%) and 26 women (83.87%). The 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 <sup>st</sup> Week	0	2
	2 <sup>nd</sup> Week	0	0
	3 <sup>rd</sup> Week	0	0
Morbidity	1 <sup>st</sup> Week	2	5
	2 <sup>nd</sup> Week	0	0
	3 <sup>rd</sup> Week	0	0

The mean age of the patients was  $46.87 \pm 8.86$  years. The mean age of the patients in group A was  $40.22 \pm 5.42$  years compared with  $53.51 \pm 6.24$  years in group B. The mean hospital stay was  $9.51 \pm 3.24$  days. In group A, the mean hospital stay was significantly lower than in group B, p-value (0.000). Two patients died in group B. There was no mortality in group A. p-value was negligible, ie 0.238. In the second and third weeks, no more mortality was

recorded. There were 7 patients with mild diseases such as wound infection, 5 of which were treated in group B and 2 in group A. p-value was negligible 0.185. Moreover, no morbidity was noted in weeks 2 and 3.

### DISCUSSION:

Significant features of acute pancreatitis are severe epigastric pain and markedly elevated levels of pancreatic enzymes in blood and urine. Gallstone migration or stone sticking into the Vater's bubble is a possible cause of gallstone pancreatitis. Diagnosis is mainly based on clinical, radiological and laboratory findings. The combination of abdominal pain, nausea, elevated amylase levels and radiographically confirmed gallstones leads to the diagnosis of acute pancreatitis with gallstone disease. In 5% of cases, a laparotomy may be necessary to rule out other extra-pancreatic conditions. The original Ranson criteria are still widely used despite the modifications. The study found that the mortality was 2% for patients with a Ranson 0-2, 15% with a Ranson 3-4, 40% with a 5-6 and 100% with a 7-8. Another scoring system is APACHE II. Wilson et al. Analyzed 160 patients and found that none of the patients with a score below 10 died. Common indications for surgery for pancreatic gallstone disease are; diagnosis, treatment of pancreatitis, treatment of complications, relief of ongoing pancreatitis, and prevention of relapse of pancreatitis. Increased incidence of gallstone pancreatitis can be controlled by cholecystectomy. The first report on early surgery was published by Acosta et al. According to this study, 86 patients with acute pancreatitis were treated conservatively, the mortality rate was 16%, and the mean hospital stay was 25 days. On the other hand, cholecystectomy was performed in 46 cases, mortality was 2%, and the average hospital stay was 13 days. Ranson et al. he noted that early surgery causes a dramatic increase in mortality. Stone et al. found a mortality of 2.8% and 0%, respectively, in the study of early surgery and conservative approach. Kelly et al. reported that early cholecystectomy in the first 48 hours of gallstone pancreatitis reduces the mortality and complication rate from 15.1% and 30.1% to 2.4% and 5.1%, respectively. A better approach seems to be a delayed cholecystectomy performed six weeks after resolving pancreatitis with conservative treatment. Delayed cholecystectomy can reverse inflammation. Another advantage of delayed cholecystectomy is that it can be performed laparoscopically. According to Turkish studies, delayed cholecystectomy is associated with a 20-23% rate of recurrence of pancreatitis. Early cholecystectomy was performed 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%, respectively, in the early and delayed cholecystectomy groups; no deaths were recorded in the group undergoing elective surgery. Rosing et al. In an observational study involving a retrospective and prospective group, they applied the policy of early cholecystectomy in the prospective group. Length of hospital stay and time from admission to final surgery and complications were recorded. The length of hospital stay was 7 days in the retrospective group compared to 4 days in the prospective group. The time from admission to cholecystectomy was 5 days in the retrospective group versus 2 days in the prospective group. The complication rates were similar and there were no deaths in either group. Tang et al. found that cholecystectomy is safe in patients after cholelithiasis (mortality 0%; damage to the bile duct 0.7%). Moreover, in patients with mild pancreatitis, an early cholecystectomy may be recommended. Surgery in the first week after admission was associated with an increase in surgical complications and prolonged hospital stays in patients with moderate to severe pancreatitis. Alimoglu et al. conducted a study in 43 patients with pancreatitis with cholelithiasis who concluded that waiting for cholecystectomy could result in recurrent biliary pancreatitis, increased morbidity and increased time hospitalization. According to the results of this study, the average hospital stay in group A was  $9.51 \pm 3.24$  days, the stay in hospital was significantly shorter than in group B, which is comparable to the studies in the international literature. Two patients died in group B during the recovery period due to complications of inflammation. Pancreatic enia In group A. there was no mortality morbidity was noted in 3 patients from group B. In group A. no morbidity was found. Statistically, mortality and morbidity in the present study were insignificant. Recurrence of pancreatitis caused by gallstone disease was found in 2 patients from group B who were re-admitted to the ward.

### CONCLUSION:

Cholecystectomy should be performed during the same hospital admission for patients with mild to moderate pancreatitis with gallstone disease as soon as the pancreatitis has resolved. In severe pancreatitis with cholelithiasis, cholecystectomy is delayed after the inflammatory response has subsided and clinically improved. Thus, early cholecystectomy gives better results than delayed cholecystectomy due to gallstone pancreatitis.

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