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Outcomes of early versus delayed cholecystectomy in patients with mild to moderate acute biliary pancreatitis

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Abstract

Background: Acute pancreatitis (AP) means sudden inflammation of the pancreas. The present study was conducted to assess outcomes of early versus delayed cholecystectomy in patients with mild to moderate acute biliary pancreatitis.

Materials & Methods: 64 acute biliary pancreatitis patients of both genders were divided into 2 groups of 32 each. Group I were early cholecystectomy group and group II were or delayed cholecystectomy group. Cholecystectomy was performed as a laparoscopic procedure by single hepatobiliary surgeon. All patients received appropriate perioperative antibiotic prophylaxis.

Results: There were 20 males and 12 females in group I and 18 males and 14 females in group II. Conversion to open was seen in 5 each in group I and II, duration of surgery was 81 minutes in group I and 86 minutes in group II, perioperative complications were 0 in group I and 2 in group II, postoperative complications were 2 in group I and 3 in group II and overall complications were 4 in each group. The difference was significant ($P < 0.05$).

Conclusion: Authors recommend early laparoscopic cholecystectomy in patients with mild to moderate acute biliary pancreatitis.

Keywords: Acute biliary pancreatitis, laparoscopic cholecystectomy, pancreatic necrosis

Introduction

Acute pancreatitis (AP) means sudden inflammation of the pancreas. It is clinically characterized by sudden onset of abdominal pain and elevated levels of pancreatic enzymes in the blood [1]. Its incidence ranges from 10 to 50/1 lakh per annum. This disease has an overall mortality of approximately 4–6 %, and the mortality increases to 17–39 % in severe cases [2].

Gallstone disease is the leading cause of acute pancreatitis in developed nations, accounting for up to 75% of cases. Most cases of acute biliary pancreatitis (ABP) are mild and self-limiting; however, 10–20% of patients develop severe pancreatitis, which is associated with high morbidity and mortality. The timing of cholecystectomy in patients with clinically severe pancreatitis, with local complications such as pancreatic necrosis and organ failure, is deliberately delayed until local complications have resolved, typically after approximately 6 weeks [3]. For mild to moderate ABP, international guidelines recommend early cholecystectomy. The improved outcome in patients with acute pancreatitis has, however, often been attributed to general improvements in intensive care, including initial management with fluid resuscitation and thereby improved microcirculation, nutritional concerns and the use of antibiotics [4]. The present study was conducted to assess outcomes of early versus delayed cholecystectomy in patients with mild to moderate acute biliary pancreatitis.

Materials & Methods

The present study comprised of 64 acute biliary pancreatitis patients of both genders. The consent was obtained from all patients.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 32 each. Group I were early cholecystectomy group and group II were or delayed cholecystectomy group.

In group I, cholecystectomy with IOC was performed within the index admission when patients had serum C-reactive protein concentration < 100 mg/L. In group II, interval cholecystectomy with IOC was performed on an elective basis after hospital discharge from the index admission, at approximately 6 weeks after the pancreatitis episode.

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Cholecystectomy was performed as a laparoscopic procedure by single hepatobiliary surgeon. All patients received appropriate perioperative antibiotic prophylaxis. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I: Distribution of patients

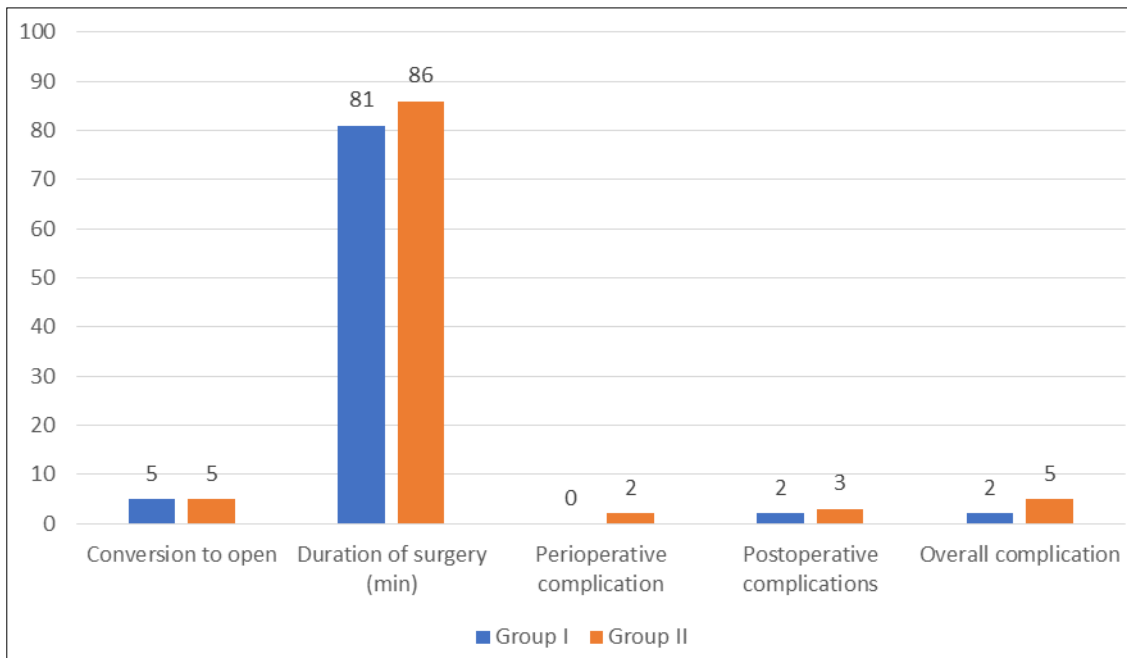
Groups	Group I	Group II
Status	Early cholecystectomy	Delayed cholecystectomy
M:F	20:12	18:14

Table I shows that there were 20 males and 12 females in group I and 18 males and 14 females in group II.

Table II: Perioperative outcomes

Parameters	Group I	Group II	P value
Conversion to open	5	5	1
Duration of surgery (min)	81	86	0.17
Perioperative complication	0	2	0.05
Postoperative complications	2	3	0.14
Overall complication	2	5	0.01

Table II, graph I shows that conversion to open was seen in 5 each in group I and II, duration of surgery was 81 minutes in group I and 86 minutes in group II, perioperative complications were 0 in group I and 2 in group II, postoperative complications were 2 in group I and 3 in group II and overall complications were 4 in each group. The difference was significant ($P < 0.05$).



Graph I: Perioperative outcomes

Discussion

Acute pancreatitis is a common disease with wide clinical variation and its incidence is increasing. The average mortality rate in severe acute pancreatitis approaches 2–10 %. Severe acute pancreatitis (SAP) develops in about 25% of patients with acute pancreatitis. Severe acute pancreatitis is a two phase systemic disease [1]. The first phase is characterised by extensive pancreatic inflammation and/or necrosis and is followed by a systemic inflammatory response syndrome (SIRS) that may lead to multiple organ dysfunction syndrome (MODS) within the first week [5, 6].

The clinical features and the severity of AP are related to extra pancreatic organ failure secondary to the patient's systemic inflammatory response syndrome (SIRS) elicited by acinar cell injury [7]. The spectrum of AP ranges from interstitial pancreatitis, which is a mild and self-limited disorder to necrotizing pancreatitis [8]. Almost all patients with AP have acute upper abdominal pain at onset typically accompanied in approximately 90% of patients by nausea and vomiting [9, 10]. The present study was conducted to assess outcomes of early versus delayed cholecystectomy in patients with mild to moderate acute biliary pancreatitis.

In present study, there were 20 males and 12 females in group I and 18 males and 14 females in group II. Jee *et al.* [11] assessed

the outcomes of early versus delayed cholecystectomy. We hypothesize that early cholecystectomy as compared to delayed cholecystectomy reduces recurrent biliary events without a higher peri-operative complication rate. Patients with mild to moderate ABP were prospectively randomized to either an early cholecystectomy versus a delayed cholecystectomy group. Recurrent biliary events, peri-operative complications, conversion rate, length of surgery and total hospital length of stay between the two groups were evaluated. A total of 72 patients were enrolled at a single public hospital. Of them, 38 were randomized to the early group and 34 patients to the delayed group. There were no differences regarding peri-operative complications (7.78% vs 11.76%; $p < 0.700$), conversion rate to open surgery (10.53% vs 11.76%; $p < 1.000$) and duration of surgery performed (80 vs 85 minutes, $p < 0.752$). Nevertheless, a greater rate of recurrent biliary events was found in the delayed group (44.12% vs 0%; $p < 0.0001$) and the hospital length of stay was longer in the delayed group (9 vs 8 days, $p < 0.002$).

We observed that conversion to open was seen in 5 each in group I and II, duration of surgery was 81 minutes in group I and 86 minutes in group II, perioperative complications were 0 in group I and 2 in group II, postoperative complications were 2 in group I and 3 in group II and overall complications were 4 in

each group. Chauhan *et al.*^[12] found that majority of patients 22 (44.0%) were in age group ranging from 41 to 60 years. Males were dominant (58%). The most common etiology was alcoholism followed by gall stone. The majority of patients were found with abdominal pain (100.0%). The majority of the patients were having moderate Balthazar CT Severity Index (CTSI) (54.0%). In all, 43 patients were having pancreatic complications and pancreatic necrosis was the commonest; 31 developed extra-pancreatic complications, among which pleural effusion was the commonest. Some patients were having multiple complications. The duration of hospital stay was highest in severe group of Balthazar CTSI. Rise in total leucocyte count, serum amylase level and low calcium levels were significantly associated with increase in pancreatic/extra-pancreatic complications. There was only 1 (2%) patient who died and remaining 49 (98%) patients were discharged. Mustafa *et al.*^[13] suggested that ERCP and ES should be used as an alternative to cholecystectomy in treatment of ABP in high-risk surgical patients and elderly. However, for patients who are deemed fit for surgery, current literatures recommend ES followed by cholecystectomy in the treatment of ABP.

Conclusion

Authors recommend early laparoscopic cholecystectomy in patients with mild to moderate acute biliary pancreatitis.

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