

# Prevalent Impediments of Acute Cholecystectomy in Acute Biliary Pancreatitis

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## ABSTRACT

**Aim:** To determine incidences of complications of acute cholecystectomy in cases of acute biliary pancreatitis.

**Study design:** Observational Descriptive study

**Place and duration of study:** Study was conducted at department of Surgery, Sheikh Zayed hospital, RYK during January 2016 to October 2016. The cases of acute biliary pancreatitis underwent cholecystectomy within 24 hours of admission.

**Methods:** Inclusion criteria of the study includes both gender either male or female patients were taken together between the ages of 30 to 60 years. Patients with first attack of acute biliary pancreatitis as per operational definition within seven days of the symptoms were also included for inclusion criteria. All patients were included in the study after obtaining their informed consent. Exclusion criteria of the study were include patients with history of substance abuse, and Patients presenting with complications like abscess, pseudocyst, necrotizing pancreatitis, Recurrent pancreatitis, and those patients whose Bilirubin level > 3 mg/dl and those patients who refused to participate were excluded from the study.

**Results:** Out of total 100 cases 38(38%) were males and 62(62%) females. The mean age of the patients was 40.13±5.31 years. The mean duration of symptoms undergoing cholecystectomy was 5.22±3.07 days. Mean duration of surgery was 51.17±4.25 minutes. Complications of early cholecystectomy were seen in 29(29%) of these cases. Prolonged duration of surgery was seen in 11(11%) cases. Prolonged duration of hospital stay was seen in 12(12%) cases while recurrence of pancreatitis was observed in 6(6%) out of 100 cases.

**Conclusion:** The complication rate is high in cases of early cholecystectomy and prolonged hospital stay is the most common.

**Keywords:** Acute biliary pancreatitis, Early cholecystectomy, Recurrence

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## INTRODUCTION

Acute Pancreatitis is defined as the inflammation of the pancreas. It is a life threatening condition with an overall mortality of 2–7% even with aggressive intervention. The prevalence of acute pancreatitis varies globally and it ranges from 5 to 80/100,000 population. The peak incidence is observed in United States and Finland. It is ranked as the 14<sup>th</sup> most common cause of death among the most fatal illnesses<sup>1</sup>.

There is wide range of etiologies leading to acute pancreatitis and amongst them alcoholism and gall stones are the most common and account for up to 80% of the cases. Pathophysiology of pancreatitis in the setting of gallstones is still not fully known but there are two most widely quoted theories. First of all there is possibility of reflux of infected bile that lead to activation of a cascade of proteolytic enzymes and secondly obstruction to the flow of bile in the

pancreatic duct lead to acinar disruption due to raised pressure. Gall stone size and gender are the most common confounders for gallstone pancreatitis. The risk to develop pancreatitis more in males while the actual number is higher in females as the likelihood to develop the galls stones is far high in females than males<sup>2,3</sup>.

There are multiple scoring system and clinical and lab based criteria to diagnose this condition. APACHI II, Modified Glasgow and Ranson's prognostic criteria are most widely used<sup>4</sup>. The management in such cases due to galls stones relied upon cholecystectomy as the chances of recurrence is high. The most common concern at this stage is the timing of surgery. Early and delayed are the most common types of cholecystectomies. Early cholecystectomy is defined as if done in the same admission. It seems safe, but early cholecystectomy is not suitable for all patients. The cases that have local pancreatic complications which includes abscess formation are not good candidate for immediate surgery. The most common complications are prolonged duration of surgery, bleeding,

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prolonged length of hospital stay and recurrence of pancreatitis<sup>3,4</sup>.

## MATERIAL AND METHODS

This Study was organized in the department of Surgical unit, Sheikh Zayed hospital, Rahim Yar Khan. Data were collected from the January 2016 to October 2016. Sampling technique was Non-probability consecutive sampling. Patients were selected by the help of a specialized surgeon with the use of a standardized form which was developed for this present study. This data included patient demographics, and geographic location, along with year of admission, clinical presentation, past medical history and history of substance abuse were also noted. In addition, laboratory and radiological examinations, clinical management, complications, severity and consequences as measured by interval of hospital stay, intensive care unit (ICU) admission, surgical intrusion were further determined. Inclusion criteria of the study includes both gender either male or female were taken together and age of the patients should be between 30 to 60 years. Patients with first attack of acute biliary pancreatitis as per operational definition within seven days of the symptoms were also included for inclusion criteria. All patients were included in the study after obtaining their informed consent. Exclusion criteria of the study were include patients with history of Alcoholism, and Patients presenting with complications like abscess, pseudocyst, necrotizing pancreatitis, Recurrent pancreatitis, and those patients whose Bilirubin level > 3mg/dl and those patients who refused to participate were excluded from the study. After the selection of the cases according to inclusion criteria patients were labeled as a case of acute biliary pancreatitis by the presents abdominal pain, raised serum amylase (>3 times of normal upper lab value) in cases that had gallstone assessed on ultrasonography abdomen. These cases then underwent cholecystectomy at department of surgery, Sheikh Zayed hospital RYK within 48 hours of the admission. The outcomes were assessed in terms of prolonged hospital stay (if it was more than 5 days post op) and recurrence of pancreatitis (recurrence of the same symptoms of appendicitis within 4 weeks of the surgery). The data were analyzed by SPSS version 21. Post stratification chi square test was applied and p value <0.05 was considered as significant.

## RESULTS

In this study there were total 100 cases out of which 38 (38%) were males and 62 (62%) females. The

mean age of the patients was  $40.13 \pm 5.31$  years. The mean duration of symptoms undergoing cholecystectomy was  $5.22 \pm 3.07$  days. Mean duration of surgery was  $51.17 \pm 4.25$  minutes (Table 1). Complications of early cholecystectomy were seen in 29(29%) of the cases. Prolonged duration of surgery was seen in 11(11%) cases. Prolonged duration of hospital stay were seen in 12(12%) cases while recurrence of pancreatitis were observed in 6(6%) out of the 100 cases (table 2).

Table 1: Study variables

	VARIABLES	
	Range	Mean±SD
Age (years)	30-60	40.13± 5.31
Duration of symptoms (days)	3-9	5.22± 3.07
Duration of surgery (minutes)	40-75	51.17± 4.25

Table 2: Frequency of complications

	Complications	
	n	%age
Prolonged duration of surgery	11	11
Prolonged duration of hospital stay	12	12
Recurrence of pancreatitis	6	06

## DISCUSSION

Acute pancreatitis is one of the dreadful gastrointestinal complications and galls stones are one of the salient etiologies detected in the majority of the cases. The number due to acute biliary pancreatitis is on the rise globally. The reason might be due to rising number of alcoholics, dietary and nutritional abnormalities leading to increased predisposition to gall stones. Timing of the surgery is always a concern to avoid the different complications and to have a good outcome.

Complications of early cholecystectomy were seen in 29(29%) of these cases. Prolonged duration of surgery was seen in 11(11%) of the cases. This was also observed by many other studies where they found the longer duration of surgery in cases higher with early cholecystectomy.<sup>5-7</sup> According to a study done by Jee SL et al<sup>5</sup> the cases with early cholecystectomy were completed in 85 minutes as compared to 80 with late cholecystectomy with p value of 0.75. The reason of the higher number with early cholecystectomy can be explained by the acute inflammatory condition of the viscera in which it takes longer to deal with the inflamed tissue. Secondly, the cases with acute conditions like spillage and massive inflammation also take longer to flush the viscera and

decontaminate; hence leading to prolonged duration of surgery.

Prolonged duration of hospital stay was seen in early cholecystectomy where it was seen in 12(12%) of the cases. This was also noted by studies done in the past.<sup>8-9</sup>This can be explained in many ways. First of all the cases presenting with acute pain are in more agony and hence relief of pain takes longer and hence affect their hospital stay. Secondly, when they present in acute stage as compared to the delayed group where they are treated with antibiotics and anti-inflammatory agents, the inflammation and acute infection both are settled. That's why the chances of further pain and inflammation leading to delay in healing and more symptoms are also decreased with late surgery. In contrast to this, a study conducted by Aboulain A et al revealed shorter hospital stay with early cholecystectomies. However, they used slightly longer time where they performed surgery after 48 hours of admission rather than on the same day<sup>10</sup>.

Recurrence of pancreatitis was observed in 6(6%) of the cases. The studies have shown mixed results ranging from 03-12% of the cases<sup>11,13</sup>The reason of higher rate of recurrence can be improper surgery that led to remaining of the stones that were dislodged and obstructed the bile duct and led to recurrence of pancreatitis. Inflammatory mediators also lead to cholestasis which can also be a cause of retrograde inflammation and pancreatitis. The retrospective nature and inclusion of small number of cases are limitations of this study and also limited only on cholecystectomy with biliary pancreatitis.

## CONCLUSION

The complication rate is high in cases of early cholecystectomy and prolonged hospital stay is the most common.

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