

# ASSOCIATION OF EARLY CHOLECYSTECTOMY WITH COMPLICATIONS IN PATIENTS PRESENTING WITH ACUTE PANCREATITIS.

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## ABSTRACT;

**Background;** Laparoscopic cholecystectomy is one of the commonly performed surgical procedure these days which is associated with significant reduction of morbidities and mortality. This study was conducted to ascertain complications in acute pancreatitis. **Objective;** To determine the frequency of complications of early cholecystectomy in patients with acute pancreatitis. **Material and Methods;** A total 152 patients with acute pancreatitis were enrolled in our study who underwent early laparoscopic cholecystectomy and were followed to document complications. All the data was entered and analyzed using SPSS-18. **Results;** Of these 152 study cases, 57 (37.5 %) were male patients while 95 (62.5 %) were female patients. Mean age of our study cases was  $37.25 \pm 7.29$  years. Of these 152 study cases, 71 (46.7 %) belonged to rural areas and 81 (53.3 %) belonged to urban areas. Diabetes was present in 40 (26.3 %) of our study cases. Hypertension was present in 67 (44.1%) of our study cases. Mean body mass index of our study cases was  $26.12 \pm 1.83$  kg/m<sup>2</sup> and obesity was present in 39 (25.7 %) of our study cases. Mean duration of surgery was  $58.53 \pm 12.48$  minutes and 77 (50.7%) had duration of surgery more than 60 minutes. Mean hospital stay was  $5.23 \pm 2.36$  days and 80 (52.6%) had duration of hospital stay for more than 4 days. Complications were noted in 29 (19.1%) of our study cases. **Conclusion;** Early laparoscopic cholecystectomy in patients with acute pancreatitis is quite safe, reliable and effective procedure as frequency of complications was low in our study cases. Complication were significantly associated with increasing gender, age, diabetes and hypertension. All the surgeons treating such patients should employ early cholecystectomy to achieve desired outcomes.

**Keywords;** Complication, Acute pancreatitis, Cholecystectomy.

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## INTRODUCTION

Acute pancreatitis is a common gastrointestinal disorder and in the majority of patients the etiology is either alcohol-associated or biliary, i.e. caused by gallstones or sludge <sup>1</sup>. The incidence of acute biliary pancreatitis is increasing worldwide, possibly due to an increased risk of gallstone disease due to nutritional and lifestyle factors and obesity <sup>2</sup>. The economic burden of acute pancreatitis is high; In the United States alone, the annual costs of acute pancreatitis currently exceed \$2.2 billion <sup>3</sup>. The majority of patients with acute pancreatitis (80%) have a mild course of their disease, but 20% of patients develop severe pancreatitis, which is associated with high morbidity and mortality <sup>4</sup>. Once biliary pancreatitis is resolved, cholecystectomy is indicated to reduce the risk of recurrent gallstone-related complications such as acute pancreatitis, cholecystitis, cholangitis or gallstone colics <sup>5</sup>.

A much discussed question is when during the course of pancreatitis the gallbladder should be removed. Gallstones and biliary sludge accounted for 30–55% of acute pancreatitis in the West, whereas in Saudi Arabia the incidence of all cases of pancreatitis amounts to 68.5%. The risk of subsequent attacks for patients recovering from the first attack of acute gallstone pancreatitis is 30-fold higher than general population. Further attacks can be prevented by cholecystectomy and bile duct stones clearance once the acute stage of the disease has settled <sup>6</sup>.

In gallstone-related acute pancreatitis, cholecystectomy is performed after resolution of the acute event to prevent subsequent episodes. Cholecystectomy is performed during the same hospitalization. The timing of cholecystectomy in patients with peripancreatic fluid collections has not been determined. Early cholecystectomy raises the risk of a second general anesthetic or a risk of a second interventional procedure to manage persistent fluid collections. Jan et al <sup>7</sup> reported 11.1 % complication rate in early cholecystectomy in acute pancreatitis while Nealon et al from USA <sup>8</sup> reported 44 % complication rate. High complication and mortality rates after early cholecystectomy in patients with severe pancreatitis have prompted guidelines recommending delaying cholecystectomy until all signs of inflammation have resolved (i.e. interval cholecystectomy). After mild biliary pancreatitis early cholecystectomy is advised by current guidelines. However, no consensus exists between these guidelines about the exact definition of ‘early’. The British Society of Gastroenterology recommend cholecystectomy within 2 weeks after discharge, whereas the International Association of Pancreatology (IAP) and the American Gastroenterological Association recommend that all patients with mild biliary pancreatitis should undergo cholecystectomy as soon as the patient has recovered from the attack <sup>9, 10</sup>.

The aim of my study was to determine complication rate of early cholecystectomy in patients with acute pancreatitis. The results will point towards related morbidities and current magnitude of the problem which will help us to draw our guidelines for the proper management of these patients. This will decrease disease morbidity and mortality in patients with acute pancreatitis.

## MATERIAL AND METHODS;

Consecutive 152 patients with acute pancreatitis was taken. All indoor patients meeting inclusion criteria was enrolled in this study from department of surgery, Nishtar Hospital Multan. Moderate to severe pancreatitis, pancreatic necrosis, chronic pancreatitis, alcoholic abuse (On history) and pregnant ladies were excluded from our study. Informed consent was taken from each patient describing them objectives of this study, ensuring them confidentiality of the information and fact that there is no risk involved to the patient while taking part in this study. All baseline investigations like blood tests (serum amylase) and ultrasonography was done at hospital facility free of cost. Patients having acute pancreatitis undergoing early cholecystectomy was recruited in our study and followed till discharge to document complications. Surgery was performed by a senior surgeon with 5 years post fellowship experience. All the data was entered and analyzed using SPSS-18. Mean and standard deviation for the age, duration of surgery, BMI and hospital stay was calculated. Frequencies and percentage was calculated for the categorical variables like gender, age groups, diabetes, hypertension, complications (Yes/No), obesity and residential status.

## RESULTS;

Our study comprised of a total of 152 patients meeting inclusion criteria of our study. Of these 152 study cases, 57 (37.5 %) were male patients while 95 (62.5 %) were female patients. Mean age of our study cases was  $37.25 \pm 7.29$  years (with minimum age of our study cases was 28 years while maximum age was 56 years). Mean age of the male patients was noted to be  $41.40 \pm 9.32$  years while that female patients was  $34.76 \pm 4.10$  years ( $p=0.000$ ). Our study results have indicated that majority of our study cases i.e. 134 (88.2 %) were aged up to 45 years. Of these 152 study cases, 71 (46.7 %) belonged to rural areas and 81 (53.3 %) belonged to urban areas. Diabetes was present in 40 (26.3 %) of our study cases. Hypertension was present in 67 (44.1%) of our study cases. Mean body mass index of our study cases was  $26.12 \pm 1.83$  kg/m<sup>2</sup> and obesity was present in 39 (25.7 %) of our study cases. Mean duration of surgery was  $58.53 \pm 12.48$  minutes and 77 (50.7%) had duration of surgery more than 60 minutes. Mean hospital stay was  $5.23 \pm 2.36$  days and 80 (52.6%) had duration of hospital stay for more than 4 days. Complications were noted in 29 (19.1%) of our study cases.

## DISCUSSION;

Acute pancreatitis is a common disease in the emergency room with an annual incidence ranging from 4.9 to 35 per 100,000 population. According to the Atlanta classification, 80% of patients with pancreatitis have mild acute pancreatitis. Acute biliary pancreatitis is one of the most common types of acute pancreatitis, accounting for up to 40 to 70% of cases. Early LC can reduce the risk of recurrent biliary events. However, many previous studies had low methodological quality. One of the heterogeneities is the previous study using different criteria for the severity of pancreatitis<sup>11,12</sup>.

Our study comprised of a total of 152 patients meeting inclusion criteria of our study. Of these 152 study cases, 57 (37.5 %) were male patients while 95 (62.5 %) were female patients. A study conducted in Turkey by Egin et al<sup>13</sup> has also reported high female gender predominance with 79 % which is in compliance with our study results. However our study results are different from that of Farooq et al<sup>14</sup> who reported 65 % male gender preponderance. A study conducted by Rai et al<sup>15</sup> has reported 80 % female gender predominance which is similar to that of our study results. A study conducted by Ahmed et al<sup>16</sup> reported 53.81 % female gender predominance which is in compliance with our study results. A study conducted in Saudi Arabia by Alshahrani et al<sup>17</sup> has also reported 79 % female gender predominance which is similar to that of our study results.

Mean age of our study cases was  $37.25 \pm 7.29$  years (with minimum age of our study cases was 28 years while maximum age was 56 years). Mean age of the male patients was noted to be  $41.40 \pm 9.32$  years while that female patients was  $34.76 \pm 4.10$  years ( $p=0.000$ ). Our study results have indicated that majority of our study cases i.e. 134 (88.2 %) were aged up to 45 years. A study conducted in Turkey by Egin et al<sup>13</sup> has also reported similar results. A study conducted by Farooq et al<sup>14</sup> has also reported  $43.79 \pm 12.16$  years mean age of the patients with acute pancreatitis undergoing laparoscopic cholecystectomy which is close to our study results. A study conducted by Rai et al<sup>15</sup> has reported 36 years mean age which is close to our study results. A study conducted by Ahmed et al<sup>16</sup> reported 43.25 years mean age which is close to our study results. A study conducted in Saudi Arabia by Alshahrani et al<sup>17</sup> has also reported 46 years mean age which is similar to that of our study results.

Of these 152 study cases, 71 (46.7 %) belonged to rural areas and 81 (53.3 %) belonged to urban areas. Diabetes was present in 40 (26.3 %) of our study cases. Hypertension was present in 67 (44.1%) of our study cases. Mean body mass index of our study cases was  $26.12 \pm 1.83$  kg/m<sup>2</sup> and obesity was present in 39 (25.7 %) of our study cases.

Mean duration of surgery was  $58.53 \pm 12.48$  minutes and 77 (50.7%) had duration of surgery more than 60 minutes. A study conducted in Turkey by Egin et al<sup>13</sup> has also reported  $77.4 \pm 34.8$  minutes mean duration of surgery which is similar to our study results.

Mean hospital stay was  $5.23 \pm 2.36$  days and 80 (52.6%) had duration of hospital stay for more than 4 days. A study conducted by Rai et al<sup>15</sup> has reported similar results.

Complications were noted in 29 (19.1%) of our study cases. A study conducted in Turkey by Egin et al<sup>13</sup> has also reported 2 % complications which is quite less than that of our study results. Jan et al<sup>7</sup> reported 11.1 % complication rate in early cholecystectomy in acute pancreatitis which is similar to that of our study results. Nealon et al from USA<sup>8</sup> reported 44 % complication rate which is quite higher than our study results.

## CONCLUSION;

Early laparoscopic cholecystectomy in patients with acute pancreatitis is quite safe, reliable and effective procedure as frequency of complications was low in our study cases. Complication were significantly associated with increasing gender, age, diabetes and hypertension. All the surgeons treating such patients should employ early cholecystectomy to achieve desired outcomes.

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