

## Comparison between Early & Delayed Laparoscopic Cholecystectomy in Acute Cholecystitis (Post-Operative Outcomes)

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### ABSTRACT

Acute cholecystitis is the most common cause of hospitalization for gastrointestinal disease & one of the Hepatopancreatobiliary emergencies, 90-95% of cases due to gallbladder stones, worldwide 10-15% of populations have gallbladder stones, only 1-4% become symptomatic each year, laparoscopic cholecystectomy is the definitive treatment. Previously, laparoscopic cholecystectomy was not advised in patient with acute cholecystitis & treated conservatively with the usual approach consists of initial control of inflammation with intravenous antibiotics followed by delayed laparoscopic cholecystectomy 6-8 weeks, this was due to fear of increase morbidity & high rate of conversion to open surgery, also waiting period for surgery will cause more fibrosis, adhesion, hyper vascularity & necrosis with time, also will increase the risk of gallstones morbidity including: CBD stones, Gallstone pancreatitis, recurrent of acute disease.

Laparoscopy has become now the cherished art of practice of surgery across the globe & Laparoscopic cholecystectomy has become affordable, beneficial and practicable by majority of surgeons, the timing of cholecystectomy in patients with acute cholecystitis has been a contentious issue for a long time & several clinical trials have discussed the optimal timing of laparoscopic surgery for acute cholecystitis, though samples were small in size, proved that early laparoscopic cholecystectomy in acute cholecystitis is feasible, safe, and cheaper and requires shorter hospitalization especially with the revolution in the laparoscopic surgery, as the experience and confidence of surgeons in laparoscopic cholecystectomy rose up because in the whole world the incidence of acute cholecystitis increasing with time & associated with significant socioeconomic costs, however, laparoscopic cholecystectomy for acute cholecystitis has not become routine, because the timing and approach to the surgical management in patients with acute cholecystitis is still a matter of controversy.

### KEYWORDS

Acute cholecystitis, Early & Delayed laparoscopic cholecystectomy, Post-operative complications, conversion rate.

### INTRODUCTION

For the management of acute cholecystitis with cholelithiasis the appropriate timing for laparoscopic cholecystectomy remains controversial [1]. Two approaches are available for the treatment of acute cholecystitis; the first approach is early (within 7 days of onset of symptoms) [2-5] laparoscopic cholecystectomy (LC) as definitive treatment after establishing diagnosis and surgical fitness of the patient in the same hospital admission. The second approach is conservative treatment which is successful in about 90% of the cases and then delayed cholecystectomy is performed in the second hospital admission after an interval of 6-12 weeks [6]. The choice of approach depends upon hospital infrastructure, surgical expertise, and patient's condition [7-28].

### OBJECTIVES

The main aim in this study to prove which method early (within 72 hours) or delayed (6-8 weeks) is the best choice in treatment of acute cholecystitis by comparison of the post-operative outcomes for both methods including: (Post-operative complications, duration of surgery, conversion rate, Duration of hospitalization & total costs).

## METHODOLOGY

This Analytical retrospective study was carried out on 54 patients, whose clinically, laboratory & ultrasound findings confirmed acute cholecystitis, about 10.3% of total 521 patients presented to department of general surgery at Zliten Medical Center, in the period from 1st December 2018 to the end of May 2020, all cases of acute cholecystitis underwent laparoscopic cholecystectomies carried out by senior surgeons [5-10].

Original data collected from the files of patients, divided into two groups according to the time of surgical intervention, early within 72 hours after admission included 25 patients (group A) & delayed within 6-8 weeks later included 29 patient (group B) [11,12].

The data of patients analyzed using SPSS program V.26, (independent sample T-test & Chi square) by comparing between two groups in: (length of operation, conversion rate to an open technique, Post-operative complications, and the length of hospital stay & total costs.

## RESULTS & DISCUSSION

We compared the clinical outcomes for 54 patients with acute cholecystitis underwent laparoscopic cholecystectomy were enrolled 25 patient 46.3% (Early surgery) & 29 patient 53.7% (Interval surgery), Both groups were matched in terms of age, sex, white blood cell count and ultrasound findings.

The median age in early (Group A) was 46 year & the mean age in with standard deviation was 48.20±17.28 years and in the delayed (Group B) the median age was 45 year & the mean age in with standard deviation was 48.17±16.77 years, the youngest patient was 18 year in (Group A) & 22 year in (Group B) while the oldest one was 75 year in (Group A) & 83 year in (Group B)

The most of cases were in age group from 31 year to 50 year (46.3%) and the data is statistically not significant (p=0.12), female gender presents the majority of cases in this study 38 patients (70.4%), while male gender 16 patients (29.6%), because gallstones disease & it's complications more common among female patients.

The overall conversion rate was (3.7%), only 2 cases out of total 54 cases, both in early group due to sever adhesions & bleeding or gallbladder perforation & obscured of anatomy specially calot's triangle, with non-significant difference existed in conversion rates between group A & group B (P=0.16), in our study conversion rate post-operative bleeding was low as compared with conversion rate reported by literature 13% to 15%.

The mean with standard deviation for operation time was 2.64±0.90 minutes in the early (group A) & the mean with standard deviation was 2.17±0.46 minutes in the delayed (Group B), we found that early group have longer operation time than delayed group with data statistically significant P value, (P=0.019)

Post-operative complications occurred in 19 cases out of total number 54 patients about 35.2%, most commonly post-operative pain in 6 cases 11.2% (5 patient in early group 9.3%) & (1 patient in delayed group 1.9%), 2 patients (8%) with bile leak in early group, Retained stones in one patient (4%) in each group, one patient with in early group & only one patient with wound infection in delayed group and this data non-significant difference existed between both groups (P= 0.95).

Total hospital stay longer in (delayed group B) with mean & standard deviation was 3±1.16 days, while was 2±1.11 days for (Early group A) and this causes increase in total cost price for delayed group by increase the number of days hospitalizations & additional antibiotics, analgesia, intravenous fluids may use, and this data with statistically significant different between both groups (P=0.015).

It was recommended that during early laparoscopic cholecystectomy, several technical points should be kept in mind for good exposure of calot's triangle, decompression of gall bladder (Aspiration) for holding and retraction of gall bladder, was done for 6 patients in both groups, and sub-hepatic drain was placed for all patients, because spillage of bile and stones during surgery or minimal bleeding

from GB bed, dissection at calot's triangle should be done by blunt instruments or by irrigation cannula (Hydro- dissection) to avoid injuries, no CBD, gastrointestinal tract, liver injury were noted in both groups of this study.

In this study we reported one case died in early group (4%), 75 year old male with DM & old CVA, post-operative arrhythmia admitted to ICU, he died 3 days after operation.

## CONCLUSION

The safety and efficacy of early and delayed laparoscopic cholecystectomy for acute cholecystitis were comparable in terms morbidity and conversion rate, duration of surgery, post-operative hospital stay & total costs. In this study we found there are no statistically significant differences between early & delayed group in term of conversion rate, post-operative complication.

Early surgery avoids repeated admissions for recurrent symptoms which has both medical as well as socioeconomic benefits and recommended to be the preferred approach of surgeons with adequate experience in laparoscopic cholecystectomy. In addition, the early laparoscopic cholecystectomy allows significantly shorter total hospital stay and reduction in days away from work at the cost of longer operating time and blood loss and offers definitive treatment at initial admission.

Early laparoscopic cholecystectomy for acute cholecystitis is safe and feasible, offering the additional benefit of a shorter hospital stay, It recommended to patients with acute cholecystitis, provided the surgery is performed within 72 hours from the onset of symptom.

**Conflict Of interest:** There are no conflict of mentioned by author.

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