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Original Research Article

Study of Early Laparoscopic Cholecystectomy Outcomes in Acute Cholecystitis

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Conflict of interest: Nil

Abstract:

Background: Acute cholecystitis (AC) is a common acute abdominal condition seen in emergency rooms, primarily due to obstruction of the cystic duct. Gallstones-related cholecystitis affects 5–25% of adult Westerners, and many may get symptoms annually. The purpose of this research is to ascertain the surgical results of early laparoscopic cholecystectomy (LC) in individuals suffering from acute cholecystitis.

Methods: From October 2022 to September 2023, a prospective study was carried out in the Department of Surgery, JLNMCH, Bhagalpur, Bihar. ELC was performed on 54 individuals in total for acute cholecystitis. Many factors were evaluated for these patients after surgery, including length of stay in the hospital, length of surgery, conversion to an open cholecystectomy, and cost-effectiveness.

Results: The average age of individuals with AC was 55.1±12.5. 53.70% of the patients were older than 50 years old. There were only 35.19% men and 64.81% women. The average surgery lasted 70.3 +/- 12.8 minutes. When it came to problems, the most frequent one was conversion to OC, which occurred at a frequency rate of 1.8%. One patient (0.9%) experienced reactional hemorrhage. After surgery, patients spent an average of 2.12±1.1 days in the hospital. Two patients (1.8%) developed pneumonia, and one patient had a UTI. Injury to the bile ducts did not occur. The rate of in-hospital deaths was nil.

Conclusion: A safe and efficient treatment for treating acute cholecystitis is early laparoscopic cholecystectomy.

Keywords: Early Laparoscopic Cholecystectomy, Acute Cholecystitis, Complications.

Introduction

Acute cholecystitis is a potentially fatal illness that affects 20 million Americans each year and has a significant financial impact globally [1]. The mainstay of modern acute cholecystitis treatment is early laparoscopic cholecystectomy (ELC) [2]. The best time to provide LC for acute cholecystitis remains unclear, despite the fact that LCs has been used extensively in this regard.

In the past, delayed LC (DLC) was recommended because to the increased risk of morbidity, including bile duct damage, leakage, and conversion to open surgery [3]. It is currently recommended to have an early cholecystectomy within 7 days of the sickness starting rather than a delayed one, which is done 6–10 weeks after the patient receives first medical attention and recovers. Early cholecystectomy should be advised as soon as feasible, unless the patient is deemed unfit for surgery, according to multiple studies. This procedure provides a definitive solution in a single hospital stay, faster recovery, comparable complication rates, and an earlier return to work for the patient [4–8]. While various meta-analysed systematic studies have looked into the best time to start LC for individuals who have acute cholecystitis, these reviews have not yet produced a consistent or definitive answer.

Material and Methods

This prospective study was carried out at Surgery Department of Jawaharlal Nehru Medical College and Hospital, Bhagalpur, Bihar from October 2022 to September 2023.

The present study included 54 individuals with acute cholecystitis, ranging in age from 20 to 70. A laparoscopic cholecystectomy (LC) was performed on each of these patients at an early age. Excluded from the study were patients who had either an open or delayed cholecystectomy (OC). All patients provided their informed consent prior to LC. To gather the required data on the patient and the LC's results, printed proforma were utilized. The major outcomes of the trial were hospital stay,

in-hospital mortality, reactionary hemorrhage, and conversion of OC. Reactionary bleeding was defined as any bleeding that occurred from the surgical site within 24 hours of the procedure. In-hospital mortality was defined as any death resulting from surgical complications within a hospital stay following LC. SPSS version 19 software was used to analyze dates. Age, length of illness, and hospital stay were all calculated to get the mean and standard deviation. Gender, the frequency of conversion to an open cholecystectomy, reactional bleeding, and in-hospital mortality will all have their frequencies and percentages determined.

Results

The average age of individuals with AC was 55.1±12.5. 53.70% of the patients were older than 50 years old. There were only 35.19% men and 64.81% women. 70.3±12.8 minutes were the average procedure time (Table 1).

Table 1: Demographic characteristics

Variable	Value
Age	55.1±12.5
20-40years	14(25.9%)
40-50years	11(20.37%)
>50 years	29(53.70%)
Male Gender	19(35.19%)
Female Gender	35(64.81%)
Operation Time(min)	70.3±12.8

When it came to problems, the most frequent one was conversion to OC, which occurred at a frequency rate of 1.8%. One patient (0.9%) experienced reactional hemorrhage. After surgery, patients spent an average of 2.12±1.1 days in the hospital. Two patients (1.8%) developed pneumonia, and one patient had a UTI. Injury to the bile ducts did not occur. In-hospital mortality was not common (Table 2).

Table 2: Complication of early Lap. Cholecystectomy

Complication	Value
Conversion to OC	2(1.8%)
Reactional Bleeding	1(0.9%)
In-hospital Mortality	0(0.0%)
Hospital Stay (days)	2.12±1.1
Pneumonia	2(1.8%)
Urinary Tract Infections	1(0.9%)
Bile Duct Injury	0(0.0%)

Discussion

Access to early LC, the better treatment for acute cholecystitis, is growing. [9,10] The way that AC is managed has remained controversial since the 1980s. At first, it was believed that LC shouldn't be used in cases of acute cholecystitis. Subsequently, following the surgeons' experience, it was acknowledged that LC may be administered to AC patients. Following that, it was said that early LC is not a practical choice for cholecystitis therapy. Surgeons began to acknowledge in the early 1900s that patients with AC might safely have early LC. Nonetheless, research has indicated that people with AC11–13 may experience certain early LC problems. In this investigation, we assessed the early surgical complications following surgery in individuals undergoing early LC.

Over fifty individuals in our study were older than fifty years. Zafar et al. reported similar age groups. Our study included 65.8% female participants. In Zafar et al.'s study, there were 64.7% female participants, while Afzal et al. reported a male to female ratio of 2.4:1. According to Ratan et al.'s study, 62% of the patients were female [15]. In our analysis, the average operating time was 70.3+12.8 minutes. Literature reports operative times that are comparable. However, compared to our work, Afzal et al.'s discovered extremely short operation duration of only 49.1±22.7 min. Early LC patients had shorter operating times than late LC patients, according to certain writers.

Conversion of OC was the most frequent complication in our study, occurring in 1.8% of patients. According to Afzal et al., the conversion rate to OC was 3.2%. Shamim et al. discovered that early LC patients had a 5.06% conversion rate to OC.16 3.6% of research participants converted to OC, according to Hadi et al. [10] In the Ratan et al. study15, no patient was converted to OC. A 0.1% incidence of conversion to OC14 was observed by Zafar et al.

Reactional hemorrhage happened in 0.90% of the individuals in our research. In our study, 0.9% of patients had a UTI and 1.8% of patients had pneumonia as additional sequelae. In our investigation, there was no bile duct damage or in-

hospital death. In Afzal et al. study, the rate of reactional hemorrhage was 0.96%. The reported incidence of damage to the bile duct ranges from 0% to 3% across various research. Injury to the bile ducts is the most deadly side effect of LC. The most frequent cause of it is when a bile duct is mistakenly identified as a cystic duct during surgery [17]. The rates of UTI and pneumonia in our study were similar to those reported in the earlier literature [18]. In our study, the average hospital stay was 2.12±1.1 days. The Hadi et al study hospital stay was 2.5 days, and the authors came to the conclusion that early LC patients had a substantially shorter hospital stay than delayed LC patients.10 Similar hospital stays for early LC patients have also been documented in other studies [19,20].

Conclusion

In conclusion, we demonstrated that early laparoscopic cholecystectomy had no increased complication and is superior to delayed cholecystectomy in terms of a reduced total length of hospital stay. Laparoscopic cholecystectomy is a safe and cost-effective approach for the management of acute cholecystitis. This approach averts the risk of recurrent attack or the development of other biliary complications while the patients are awaiting definitive surgical intervention.

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