

# Revisiting Outcomes of Cholecystectomy in an Elderly Population

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## Introduction

Cholecystectomy is the gold standard treatment for most gallstone related conditions<sup>1</sup>. In an ageing population with lower function reserves, more comorbidities and rising prevalence of gallstone disease, the increased risks of cholecystectomy must be considered when less invasive (but less effective) alternatives are available<sup>2</sup>.

## Objectives

Evaluate the outcomes of cholecystectomy performed on patients  $\geq 70$  yrs, more specifically; how factors such as emergency/elective procedures, comorbidities, and indications impact length of stay and complication rate.

## Methods

Data on patients over the age of 70 undergoing cholecystectomy between January and December 2023 were collected retrospectively. Patient notes were used to obtain patient age (divided into subgroups: 70-74, 75-79, 80-84, 85+); comorbidities, measured using the Charlson Comorbidity Index (CCI); procedure acuity (emergency/elective); procedure indications; length of stay (LoS); and 30d post-operative complications. Statistical analysis was performed using Students T-test, Fisher's Exact test, and Kruskal Wallis test in Microsoft Excel.

## Results

53 patients  $>70$  had cholecystectomies during the study period. All started laparoscopically and only one was converted to open.

There were statistical differences between:

- Acuity and complication rates ( $p=0.04$ )
- Indication and length of stay ( $p=0.003$ )

No statistical differences were found in:

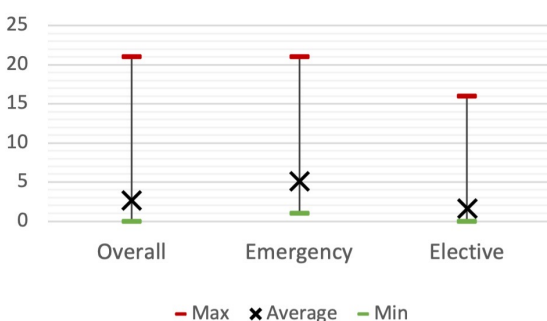
- Indication vs complications ( $p=0.65$ )
- Complications vs LoS ( $p=0.11$ )
- Age groups vs complications ( $p=0.8$ ) and LoS ( $p=0.6$ )
- CCI vs complications ( $p=0.8$ ) and LoS ( $p=0.1$ )

Table 1: Demographics	All	Emergency	Elective
Number of patients	53	16 (30%)	37 (70%)
Age (Mean + range)	77	78 (70-92)	76 (70-88)
Charlson Comorbidity Index (range)	4	4 (3-5)	3 (3-8)

Table 2: Indications for Surgery	All	Emergency	Elective
Cholecystitis without CBD obstruction	26 (49%)	10 (19%)	16 (30%)
Cholecystitis with CBD obstruction	3 (6%)	0	3 (6%)
Choledocholithiasis	4 (8%)	0	4 (8%)
Gallstone Pancreatitis	14 (26%)	6 (11%)	8 (15%)
Biliary colic	4 (8%)	0	4 (8%)
Gallbladder polyp	2 (4%)	0	2 (4%)

Table 3: 30-day complications	All	Emergency	Elective
Surgical site infection	1 (2%)	0	1 (2%)
Pulmonary complications	1 (2%)	1 (2%)	0
Bleeding	1 (2%)	1 (2%)	0
Intra-abdominal collection/infection	3 (5%)	2 (4%)	1 (2%)
Retained stone/acute pancreatitis	2 (4%)	2 (4%)	0
Bile Leak	0	-	-
<b>Total</b>	<b>8 (15%)</b>	<b>6 (11%)</b>	<b>2 (4%)</b>

Chart 1: Length of Stay - Emergency vs Elective



## Conclusion

Cholecystectomy can be performed on patients over the age of 70 in both emergency and elective settings, although are at higher risk of developing complications in emergency settings. Depending on indication, patients may be more likely to have a prolonged hospital stay. Comparison with alternative management strategies in higher powered studies may help guide decision making in elderly patients with gallstone disease.

## References

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2. Lin WC, Chang CW, Chu CH. Percutaneous cholecystostomy for acute cholecystitis in high-risk elderly patients. *Kaohsiung J Med Sci* 2016;32(10):518-525