Comparison of Clinical Outcomes and Cost of Mini Open Vs Laparoscopic Cholecystectomy in 10 Year Interval

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Abstract

Objective
To determine differences in procedure duration, length of stay, outcomes and cost based on types of surgery in the year 2004-5 and 2014-15.

Methods
The study design was a 10 year interval retrospective study conducted in a district hospital in Queensland, Australia. Data were extracted from hospital record for the years 2004-5 and 2014-15. Incomplete and inaccurate data were excluded from the study and a total of 247 records were included in final analysis. Fischer's exact test, Chi-square test and Mann-Whitney U test with 0.05 level of significance were used. Odds ratio with 95% confidence interval were also calculated.

Results
Patients treated with laparoscopic surgery had significantly shorter hospital stay than those treated with mini-open surgery ($p<0.001$), and it was consistent for both time period. Antibiotic use and postoperative complications were significantly higher in mini open cholecystectomy cases ($p<0.05$). In both time period, laparoscopic cholecystectomy showed significantly less inpatient complications compared to mini open cholecystectomy. Lack of cost components restricts direct comparison of cost, however increased complication, antibiotic use and longer stay suggests high indirect cost in patients treated with mini open cholecystectomy.

Conclusion
Laparoscopic cholecystectomy has become the preferred management of acute cholecystitis. This research provides evidence on improved intraoperative and postoperative outcome in laparoscopic cholecystectomy compared to mini open cholecystectomy. Shorter hospital stay, less postoperative complications and less antibiotic use make this technique more cost-effective. However, longitudinal study using cost effectiveness analysis in future will provide robust conclusion.

Keywords: Acute cholecystitis; Cholecystectomy; Laparoscopic; Open

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