

Himmelfarb Health Sciences Library, The George Washington University

Health Sciences Research Commons

URGENT Matters

School of Medicine and Health Sciences

11-11-2023

Which Patients with Biliary Colic Need Gallbladder Removal?

Callen Morrison

Babak Sarani

Follow this and additional works at: https://hsrc.himmelfarb.gwu.edu/smhs_URGENT_Matters



Part of the [Medicine and Health Sciences Commons](#)

Which Patients with Biliary Colic Need Gallbladder Removal?

Callen Morrison and Babak Sarani, MD

11/22/2023

Biliary colic is a common complaint in US emergency departments (EDs), accounting for approximately 335,000 visits every year.¹ Almost 90% of patients with uncomplicated biliary colic who present to the ED are discharged, and these patients are typically referred to general surgery for a scheduled gallbladder removal (cholecystectomy). Treatment of biliary colic and other biliary diseases leads to over 700,000 annual US cholecystectomies, costing approximately \$6.5 billion dollars.² It is unknown which patients with uncomplicated biliary colic need surgery.

In a study by Makutonin et al, one-year surgery rates, complications, and costs were analyzed for 7,036 patients who initially presented to a Maryland ED with uncomplicated biliary colic.³ Patients were followed for one year using linked data from the Agency for Healthcare Research and Quality's (AHRQ's) Maryland Healthcare Cost and Utilization Project (HCUP), which contained information about outpatient surgery, ED, and hospital visits. After the initial ED visit for uncomplicated biliary colic, 89% of patients were discharged, and 57% of those patients did not undergo cholecystectomy within one year.

Neither race, gender, income-stratified zip code, nor insurance status were found to be associated with subsequent cholecystectomy (elective or emergency). Amongst patients who were initially discharged from the ED, obesity was associated with a 2.4 times greater likelihood of cholecystectomy within 1 year. Nicotine dependence, mood disorders, hyperlipidemia, and hypertension were other significant predictors of cholecystectomy for these patients, with odds ratios (OR) of 1.31, 1.23, 1.23, and 1.17 respectively. Notably, a repeat ED visit was found to be

an independent risk factor for emergency cholecystectomy, associated with a 1.26 times greater likelihood of receiving the surgery. Obesity (OR=1.59), mood disorders (OR=1.18), and hypertension (OR=1.17) were additional predictors of emergency cholecystectomy. Finally, the rate of emergency cholecystectomy following hospital admission on a repeat ED visit (46%) was found to be double that of patients admitted on their initial presentation to the ED (23%). Given that less than half of patients received a cholecystectomy at one year, this study raises the question of which patients benefit from surgery after an episode of biliary colic and which can be managed with a “watch-and-wait” approach to surgery.

Makutonin et al. highlight the uncertainty around follow-up instructions for ED patients discharged with uncomplicated biliary colic. Further research should focus on the risk factors that may predispose one with biliary colic to develop complications or recurrent symptoms that require cholecystectomy. Additional studies should investigate the management and the natural course of uncomplicated biliary colic in multiple US geographic locations and explore how they compare to these findings in this dataset. Finally, future randomized control trials could be conducted to compare the efficacy of urgent cholecystectomy versus “watch and wait” for treating uncomplicated biliary colic.

The authors have no conflicts to report

References

1. Healthcare cost and utilization project (HCUP). *Agency for Healthcare Research and Quality*.
2. Shaffer EA. Gallstone disease: Epidemiology of gallbladder stone disease. *Best Pract Res Clin Gastroenterol*. 2006;20(6):981-996. Accessed Jun 21, 2023. doi: 10.1016/j.bpg.2006.05.004.
3. Makutonin M, Moghatederi A, Newton S, Ma Y, Meltzer AC. Biliary colic in the emergency department: A state-wide analysis of one-year costs and clinical outcomes. *Surg Open Sci*. 2023;12:9-13. doi: 10.1016/j.sopen.2023.02.002.