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Cholecystectomy in patients with cirrhosis: a population-based cohort study from England

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Introduction: There is an increased risk of cholelithiasis in patients with liver cirrhosis irrespective of the underlying aetiology. Cholecystectomy is the recommended definitive treatment for symptomatic gallstones. However, in patients with cirrhosis the postoperative outcomes after cholecystectomy are not fully defined. This population-based cohort study aimed to determine postoperative outcomes after emergency and elective cholecystectomy in patients with cirrhosis.

Methods: Linked electronic healthcare data from England were used to identify all patients undergoing cholecystectomy between January 2000 and December 2017. Length of stay (LOS), 30-day re-admission, case fatality and the odds ratio (OR) of 90-day mortality were calculated for patients with and without cirrhosis, adjusting for age, sex and co-morbidity using logistic regression.

Results: Of the total 69141 eligible patients who underwent a cholecystectomy, 511 (0.74%) had cirrhosis. In patients without cirrhosis 86.55% underwent a laparoscopic procedure compared with 57.53% in patients with cirrhosis (p<0.0001). LOS was longer in those with cirrhosis (3 IQR 1–8 days vs 1 IQR 1–3 days, p<0.0001). The 30-day re-admission rate was greater in patients with cirrhosis, 36.79% compared with 14.95% in those without cirrhosis. The 90-day case fatality after elective cholecystectomy in patients with and without cirrhosis was 2.79% and 0.43%; and 12.82% and 2.39% following emergency cholecystectomy. This equated to a 3-fold (OR 3.22 (95%-CI 1.72–6.02)) and a 4-fold (OR 4.52 (95%-CI 2.46–8.33)) increased odds of death at 90-days following elective and emergency cholecystectomy after adjusting for confounders.

Conclusion: Patients with cirrhosis undergoing cholecystectomy have an increased 90-day risk of postoperative mortality, which is significantly worse after emergency procedures.