

Effect of Diabetes on Outcomes in Patients Undergoing Emergency Cholecystectomy for Acute Cholecystitis

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In this study, one of the most prevalent diseases meets one of the most frequently performed operations. This topic is becoming more and more important because of the increasing age of the surgical population, paralleling the increasing incidence of diabetes.

Karamanos et al. [1] analyzed data collected between 2004 and 2010 in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database, focusing on 5,460 patients who underwent emergency inpatient cholecystectomy for acute cholecystitis. The main aim of the study was to identify the prevalence of diabetes in this patient group and explore its effect on surgical outcomes. Multivariate analysis revealed significantly more adverse events in patients with diabetes than in nondiabetics, particularly regarding mortality, preoperative gallbladder perforation, and infectious complications.

In light of the large database and robust multivariate analysis, the authors provide relevant support for their hypothesis. Of interest is the strong impact of diabetes mellitus on the presentation of cholecystitis, with a significantly increased incidence of preoperative gallbladder perforation. Potential causal interactions between the incidence of acute cholecystitis and diabetes will hopefully be addressed in future studies.

Another interesting finding is the impact of insulin use on local and systemic infections compared to its effect on diabetic patients given oral medication and patients without diabetes mellitus. The elevated incidence of infections is unlikely to be explained by the higher incidence of perforations and longer hospital stays. Potentially complex

interactions between diabetes and other aspects of the metabolic syndrome—obesity, fatty liver disease, consequences of arteriosclerosis—may influence the incidence of these outcome parameters.

The impact of diabetes on some clinical outcome parameters may be explained in part by differences between the populations because despite being extensive multivariate analysis might not entirely correct for all factors that may have a causal effect on the observed events.

The data of this study pave the way for new studies that address therapeutic aspects in patients with diabetes undergoing laparoscopic cholecystectomy. Optimal blood glucose levels and the intensity of the insulin treatment are of particular clinical interest in this population. With our current knowledge, it is unclear if local and systemic complications are altered by different approaches of intraoperative and postoperative glucose control, including tight glycemic control or standard care [2].

The present article addresses a frequent and highly relevant clinical scenario. In future, surgeons need to investigate further the relevance of the metabolic syndrome and associated diseases to the pathogenesis, outcomes, and clinical management of their patient population.

References

1. Karamanos E, Sivrikoz E, Beale E et al (2012) Effect of diabetes on outcomes in patients undergoing emergency cholecystectomy for acute cholecystitis. *World J Surg*. doi:10.1007/s00268-013-2086-6
2. NICE-SUGAR Study Investigators, Finfer S, Liu B, Chittock DR et al (2012) Hypoglycemia and risk of death in critically ill patients. *N Engl J Med* 367:1108–1118

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