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## Can we consider day-case laparoscopic cholecystectomy for acute calculous cholecystitis? Identification of potentially eligible patients

David Fuks, MD, PhD,<sup>a,b</sup> Cyril Cosse, MSc,<sup>a,b</sup> Charles Sabbagh, MD, MSc,<sup>a,b</sup>  
Delphine Lignier, MSc,<sup>a</sup> Celine Degraeve, MSc,<sup>a</sup> and Jean Marc Regimbeau, MD, PhD<sup>a,\*</sup>

<sup>a</sup> Department of Digestive and Metabolic Surgery, Amiens University Medical Center, Amiens, France

<sup>b</sup> Inserm U1088 Faculty of Medicine, University of Picardie Jules Verne, Amiens, France

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### ABSTRACT

**Background:** Day-case laparoscopic cholecystectomy has not yet been validated for acute cholecystitis. We sought to identify a subgroup of acute cholecystitis patients having been hospitalized overnight after laparoscopic cholecystectomy but who could have been eligible for day-case surgery.

**Methods:** We identified patients treated for acute cholecystitis with laparoscopic cholecystectomy in our university medical center between May 1, 2010, and May 31, 2012, and who lacked contraindications for day-case surgery. In a second step, we assumed that patients hospitalized for <3 d would have been eligible for day-case surgery. We then compared patients hospitalized for ≤3 d with those hospitalized for >3 d in terms of demographic data, laboratory test results, and surgical procedures.

**Results:** The study population comprised 86 men and 82 women (median age: 57 y; age range: 18–90 y). Contraindications for day-case surgery were identified preoperatively in 23% of the cases (39 of 168) and intraoperatively in another 23% of the cases. The proportion of patients hospitalized for <3 d was 41% (69 of 168) when considering the intention-to-treat population and 57% (51 of 90) when considering patients with no contraindications to day-case surgery. Forty percent of the patients hospitalized for ≥3 d (16 of 39) suffered from postoperative pain that was poorly controlled by oral analgesics. Abdominal drainage was the only predictive factor for hospitalization <3 d (odds ratio [95% confidence interval] = 0.13 [0.02–0.71]; *P* = 0.01).

**Conclusions:** Day-case laparoscopic may be feasible in selected patients with mild or moderate acute calculous cholecystitis. Our present results may be of use in designing a study of day-case surgery for acute calculous cholecystitis and related changes in the management of these patients.

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\* Corresponding author. Department of Digestive Surgery, Amiens University Medical Center, Place Victor Pauchet, F-80054, Amiens Cedex 01, France. Tel.: +33 322 668 301; fax +33 322 668 680.

E-mail address: [regimbeau.jean-marc@chu-amiens.fr](mailto:regimbeau.jean-marc@chu-amiens.fr) (J.M. Regimbeau).

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## 1. Introduction

Day-case surgery (also known as ambulatory surgery, outpatient surgery, same-day surgery, or day surgery) does not require overnight hospitalization. The popularity and scope of day-case surgery continue to grow. Three French surgical societies (the French Society of Digestive Surgery, the Association of Hepatobiliary Surgery and Transplantation, and the French Association for Ambulatory Surgery) recently issued evidence-based guidelines on ambulatory surgery [1]. At a November 2010 meeting, the French National Authority for Health and the French Association for Ambulatory Surgery made day-case surgery a national priority by setting a target of 80% for outpatient procedures. France's current figures (even for the best-validated indications for day-case surgery) are well below this target [2]. Compliance with these national guidelines may be achieved in three ways. First, it is essential to rapidly disseminate guidelines concerning validated indications [1]. Second, new indications for day-case surgery, such as laparoscopic fundoplication [3] and sleeve gastrectomy, should be assessed. Third, outpatient or short-stay protocols for emergency procedures, such as appendectomy or cholecystectomy for mild or moderate acute cholecystitis, are being developed and need to be assessed. Acute calculous cholecystitis (ACC) accounts for 3%–10% of cases of abdominal pain requiring hospitalization and surgery [4–6]. Because emergency laparoscopic cholecystectomy for ACC is necessarily a nonscheduled surgical procedure, it has not yet been validated in a day-case setting. However, for selected patients with mild or moderate ACC, this procedure has a number of features that make it a candidate for use on a day-case basis: standardized management, low morbidity, a low average length of stay, and health economic arguments. To the best of our knowledge, the feasibility of treating ACC on a day-case

basis has not yet been studied. Although nearly 40% of our department's laparoscopic cholecystectomies for elective biliary colic are performed in a day-case setting, ACC patients have never been treated in this respect. Hence, as a first step, we sought to identify a subset of ACC patients who could have been eligible for day-case surgery.

## 2. Methods

### 2.1. Patient selection

Between May 1, 2010, and May 31, 2012, a total of 201 patients were treated at our institution for ACC. The presence and severity of this condition (defined as mild, moderate, or severe) were assessed according to the Tokyo guidelines [7]. Study flowchart is reported in Figure 1.

Ninety-one patients with mild or moderate ACC requiring early cholecystectomy were participating in the ABCAL multicenter, randomized, controlled trial of the impact of antibiotic treatment (with a combination of amoxicillin and clavulanic acid) after laparoscopic cholecystectomy. Details of the trial design have been published elsewhere (Clinicaltrials.gov identifier: NCT01015417).

We also included 77 ACC patients who failed to meet the ABCAL trial's strict inclusion criteria but met none of the following criteria: symptoms lasting for >5 d before surgery, concomitant acute pancreatitis, and severe ACC (i.e., no indication for cholecystectomy or requiring emergency open cholecystectomy for septic shock).

Hence, the final study population comprised 168 patients having undergone early cholecystectomy ( $\leq 5$  d after the onset of symptoms) for mild or moderate ACC. The ABCAL study protocol did not have any impact on discharge decisions.

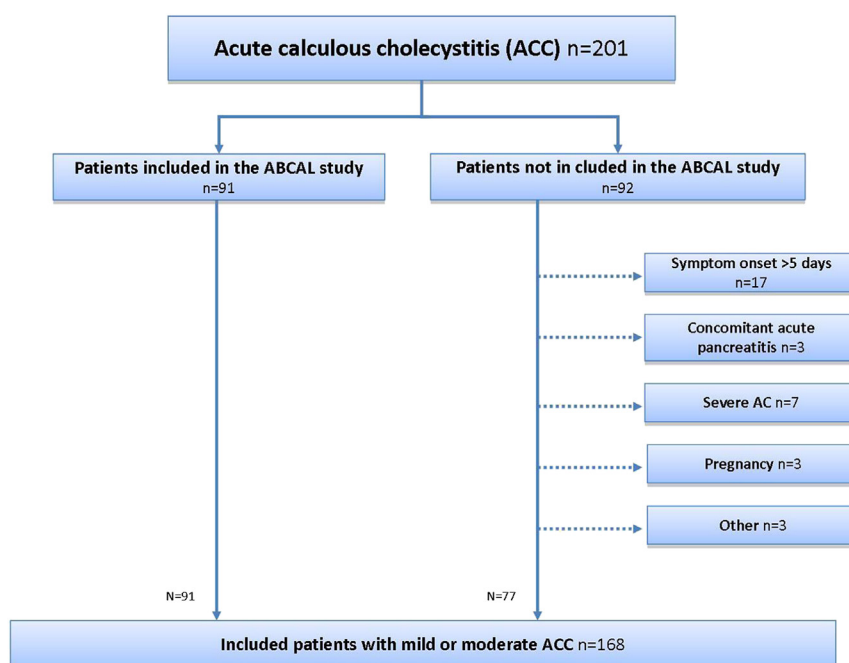


Fig. 1 – Study flowchart. (Color version of figure is available online.)

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