

EDITORIAL

## Cholecystectomy in mild acute biliary pancreatitis: the sooner; the better

Clinical guidelines for the treatment mild acute biliary pancreatitis (ABP) recommend performing cholecystectomy early –during the first three days– at admission or, if that is not possible, during the first three weeks following the onset of pancreatitis (1,2). Notably only 23% of patients had undergone cholecystectomy during the index hospital admission (3,4).

Scientific evidence has been based on retrospective studies, audits of clinical outcomes and systematic reviews (3,5). There are only two prospective randomized trials comparing early and delayed cholecystectomy although each had different objectives (6,7).

The arguments against performing early cholecystectomy are based on the alleged greater difficulty as a result of pancreatic edema, a higher rate of conversions to open surgery and the limited possibilities of assessing the degree of severity of the pancreatitis at this time (3,8).

In contrast, delay of cholecystectomy has been associated with the recurrence of pancreatitis in between 33% and 63% of cases and a higher rate of readmissions (18%) due to complications from the lithiasis (biliary colic, cholangitis, choledocholithiasis) (9-11).

In this issue of *The Spanish Journal of Gastroenterology (Revista Española de Enfermedades Digestivas)*, Bejarano et al. (12) analyze for the first time in our country the consequences of delaying cholecystectomy in ABP. The authors prospectively study the recurrence of pancreatitis and biliary complications in a cohort of 282 patients with ABP, in whom cholecystectomy was delayed (median: 97 days, P<sub>25</sub> 60 - P<sub>75</sub> 173), and report recurrence of the pancreatitis in 46 patients (15.5%) and of biliary complications in 29 patients (9.7%) with a readmission rate of 27.3%, an incidence higher than the 17% reported by Da Costa and other authors, perhaps because the delay was greater (median: 97 days) (7).

It is worth pointing out that endoscopic retrograde cholangio-pancreatography was performed in 22% of patients, a figure similar to that in the Da Costa study, and inferior to the 39% reported by Van Baal (3,7). In this subgroup of patients, Bejarano et al. report no cases of recurrence of the pancreatitis, while Da Costa found a relapse rate of 17%. Although sphincterotomy may reduce the recurrence of pancreatitis, it does not guarantee that no subsequent biliary complications will occur (3,9,10).

The study by Bejarano et al. highlights one of the failings of health systems, that of providing services at the most appropriate time which is no less important than ensuring safety, efficacy, efficiency, patient-centered care and team work (13).

A recent study has estimated a saving of 1.003€ per patient when cholecystectomy is performed early and a reduction of costs of 3.4 million €/year in the National Health Service (UK) (14).

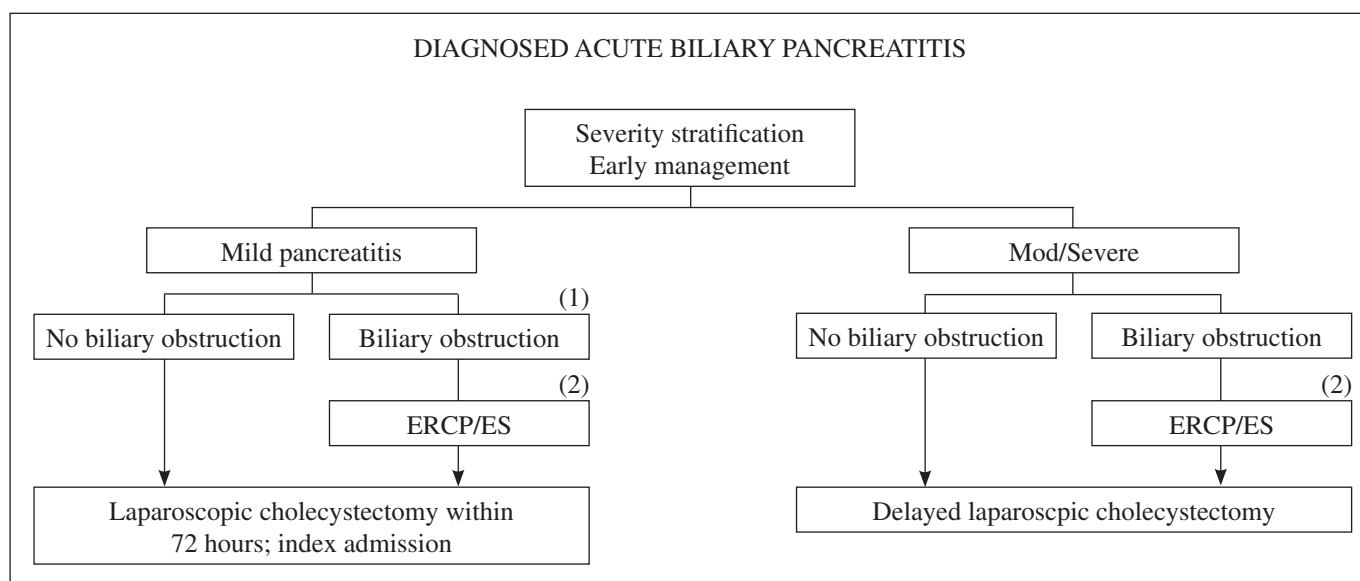


Fig. 1. Algorithm for the management of acute biliary pancreatitis. (1) Serum bilirubin > 4 mg/dL or dilated common bile duct on day 2 (EUS; MRCP); (2) Endoscopic cholangiogram/Endoscopic sphincterotomy (adapted from Wilson CT, reference 11).

Acute pancreatitis is the third leading cause of hospital admissions in gastroenterology and its clinical management in the first 72 hours continues to be a clinical challenge (15). Since 1988, more than 30 clinical guidelines and their respective updates have been published.

Given the local and systemic repercussions of ABP, diagnosis and clinical management may require many resources (16). Between 25% and 60% of patients manifest a systemic inflammatory response syndrome (SIRS), although in the majority this resolves in the first 24 hours with appropriate fluid replacement therapy (17-20).

For all these reasons, management of acute pancreatitis should fall under the “bundle of care” model of organization, as has been the case with other complex processes such as sepsis, cerebrovascular accidents, and myocardial infarction, in all of which this principle has been applied, with a resulting improvement in clinical outcomes with lower healthcare costs (avoiding the overuse, underuse and misuse of resources) together with increases in patients satisfaction (21-25).

Javier A.-Cienfuegos and Fernando Rotellar

*Department of General Surgery. Clínica Universidad de Navarra. School of Medicine. Universidad de Navarra. Pamplona, Spain*

## REFERENCES

1. Working Party of the British Society of Gastroenterology, Association of Surgeons of Great Britain and Ireland, Pancreatic Society of Great Britain and Ireland, et al. UK guidelines for the management of acute pancreatitis. *Gut* 2005;54(Supl. 3):iii1-9.
2. Tenner S, Baillie J, DeWitt J, et al. American College of Gastroenterology guideline: management of acute pancreatitis. *Am J Gastroenterol* 2013;108:1400-15; 1416. DOI: 10.1038/ajg.2013.218
3. van Baal MC, Besselink MG, Bakker OJ, et al. Timing of cholecystectomy after mild biliary pancreatitis: a systematic review. *Ann Surg* 2012;255:860-6. DOI: 10.1097/SLA.0b013e3182507646
4. Nguyen GC, Boudreau H, Jagannath SB. Hospital volume as a predictor for undergoing cholecystectomy after admission for acute biliary pancreatitis. *Pancreas* 2010;39:e42-7. DOI: 10.1097/MPA.0b013e3181bd6387
5. Randial Perez LJ, Fernando Parra J, Aldana Dimas G. The safety of early laparoscopic cholecystectomy (48 hours) for patients with mild gallstone pancreatitis: a systematic review of the literature and meta-analysis. *Cir Esp* 2014;92:107-13.
6. Aboulian A, Chan T, Yaghoobian A, et al. Early cholecystectomy safely decreases hospital stay in patients with mild gallstone pancreatitis: a randomized prospective study. *Ann Surg* 2010;251:615-9. DOI: 10.1097/SLA.0b013e3181c38f1f
7. da Costa DW, Bouwense SA, Schepers NJ, et al. Same-admission versus interval cholecystectomy for mild gallstone pancreatitis (PONCHO): a multicentre randomised controlled trial. *Lancet* 2015;386:1261-8. DOI: 10.1016/S0140-6736(15)00274-3
8. Nealon WH, Bawduniak J, Walser EM. Appropriate timing of cholecystectomy in patients who present with moderate to severe gallstone-associated acute pancreatitis with peripancreatic fluid collections. *Ann Surg* 2004;239:741-9; discussion 749-51. DOI: 10.1097/01.sla.0000128688.97556.94
9. Hwang SS, Li BH, Haigh PI. Gallstone pancreatitis without cholecystectomy. *JAMA Surg* 2013;148:867-72. DOI: 10.1001/jamasurg.2013.3033
10. El-Dhuwaib Y, Deakin M, David GG, et al. Definitive management of gallstone pancreatitis in England. *Ann R Coll Surg Engl* 2012;94:402-6. DOI: 10.1308/003588412X13171221591934
11. Wilson CT, de Moya MA. Cholecystectomy for acute gallstone pancreatitis: early vs delayed approach. *Scand J Surg* 2010;99:81-5.
12. Bejarano N, Romaguera A, García FJ, et al. Cómo afecta el retraso de la colecistectomía tras la pancreatitis aguda litiasica en la aparición de recidivas. Consecuencias de la falta de recursos. *Rev Esp Enferm Dig* 2016;108:117-22.
13. A new health system for the 21st century. In: Committee on Quality Health Care in America, Institute of Medicine, editor. *Crossing the quality chasm : a new health system for the 21st century*. Washington: National Academy Press; 2001. p. 23-38.
14. Morris S, Gurusamy KS, Sheringham J, et al. Cost-effectiveness analysis of endoscopic ultrasound versus magnetic resonance cholangiopancreatography in patients with suspected common bile duct stones. *PLoS One* 2015;10:e0121699. DOI: 10.1371/journal.pone.0121699
15. Peery AF, Crockett SD, Barritt AS, et al. Burden of Gastrointestinal, Liver, and Pancreatic Diseases in the United States. *Gastroenterology* 2015;149:1731-41.e3. DOI: 10.1053/j.gastro.2015.08.045
16. Hoque R, Malik AF, Gorelick F, et al. Sterile inflammatory response in acute pancreatitis. *Pancreas* 2012;41:353-7. DOI: 10.1097/MPA.0b013e3182321500
17. Hoque R, Farooq A, Ghani A, et al. Lactate reduces liver and pancreatic injury in Toll-like receptor- and inflammasome-mediated inflammation via GPR81-mediated suppression of innate immunity. *Gastroenterology* 2014;146:1763-74. DOI: 10.1053/j.gastro.2014.03.014
18. Lujano-Nicolas LA, Perez-Hernandez JL, Duran-Perez EG, et al. Corelation among clinical, biochemical and tomographic criteria in order to evaluate the severity in acute pancreatitis. *Rev Esp Enferm Dig* 2010;102:376-80. DOI: 10.4321/S1130-01082010000600006
19. Perez-Cuadrado E. The role of endoscopic ultrasonography in the biliary tract - a great friend of ERCP s. *Rev Esp Enferm Dig* 2011;103:341-4. DOI: 10.4321/S1130-01082011000700001
20. Schepers NJ, Besselink MG, van Santvoort HC, et al. Early management of acute pancreatitis. *Best Pract Res Clin Gastroenterol* 2013;27:727-43. DOI: 10.1016/j.bpg.2013.08.007
21. McCallum IJ, Hicks GJ, Attwood S, et al. Impact of a care pathway in acute pancreatitis. *Postgrad Med J* 2011;87:379-81. DOI: 10.1136/pgmj.2010.002113rep
22. Turner M, Barber M, Dodds H, et al. Implementing a simple care bundle is associated with improved outcomes in a national cohort of patients with ischemic stroke. *Stroke* 2015;46:1065-70. DOI: 10.1161/STROKEAHA.114.007608
23. Mayumi T, Takada T, Hirata K, et al. Pancreatitis bundles. *J Hepatobiliary Pancreat Sci* 2010;17:87-9. DOI: 10.1007/s00534-009-0219-y
24. Crowther N, Kahvo M, Chana P. Improving the management of acute pancreatitis in a district general hospital. *BMJ Qual Improv Rep* 2015;4:pii: u206577.w2642. DOI: 10.1136/bmjquality.u206577.w2642
25. Porter ME. A strategy for health care reform - toward a value-based system. *N Engl J Med* 2009;361:109-12. DOI: 10.1056/NEJMp0904131