Comparison between early and late cholecystectomy after gallstone pancreatitis

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Acute biliary pancreatitis is one of the most common gastrointestinal illnesses necessitating inpatient hospital admission. With an increasing incidence of gallstone disease, in the setting of a changing healthcare landscape, surgical indications must be carefully examined. The principles of management, including common duct clearance, bowel rest, and interval cholecystectomy to avoid recurrent disease have not changed, however with the refi nement of minimally invasive techniques, timing of intervention deserves re-examination. We seek to make evidence based recommendations on the timing of cholecystectomy following acute biliary pancreatitis.

Keywords:
Cholecystectomy, early and late complications, pancreatitis

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Introduction

Pancreatitis is the inflammation and autodigestion of the pancreas. It is associated with a high morbidity rate (15–50%) and mortality rate (20–35%). According to Revised Atlanta classification, acute pancreatitis is of three types: mild, moderate, and severe acute pancreatitis [1].

The scoring systems combine both clinical and laboratory parameters to identify patients with severe pancreatitis. The first numeric scoring system proposed by Ranson and colleagues is based on 11 parameters. The morbidity and mortality increase with an increase in the score [2].

Most patients with acute biliary pancreatitis have a mild attack and recover fully with conservative treatment. Patients may experience biliary events like acute cholecystitis, acute cholangitis, common bile duct obstruction, or biliary colic [2].

There is no consensus on the ideal timing for cholecystectomy in mild biliary pancreatitis, but the international guidelines advise early cholecystectomy within the first 72 h to minimize the risk of recurrent biliary pancreatitis and other biliary complications [3].

Severe biliary pancreatitis occurs in 20–30% of cases and is associated with pancreatic necrosis, peripancreatic fluid collection, infection, and systemic failure (pulmonary, cardiovascular, and renal). All patients who have moderate to severe biliary pancreatitis must recover from the acute stage of the disease before undergoing surgery because so much time is spent in managing the patient's acute episode. When the patient is stabilized after the acute episode, prompt cholecystectomy is needed [4].

Infectious complications are common when cholecystectomy is performed sooner than 3 weeks after severe biliary pancreatitis [4].

Review of the literature

Acute pancreatitis is a major health care problem. The disease is the third most common gastrointestinal reason for acute hospital admission, carrying a mortality rate of 5%. Acute pancreatitis is a reversible inflammatory process of the pancreas. Acute pancreatitis may occur as an isolated attack or is recurrent [5].

In biliary pancreatitis, gallstones are tiny rocks that are formed in the gallbladder. Gallstones may pass into the common bile duct from the gallbladder and obstruct the pancreatic duct, causing the pancreatic fluids to collect in the pancreatic duct leading to inflammation of the pancreas. It can occur by passing of the stone without obstruction, this is thought to be acause of acute billary pancreatitis [6].

Management of pancreatitis and its causes, particularly gallstones, is considered a very important matter by which researchers concern to decrease morbidity and mortality caused by this pathology [6].

In biliary pancreatitis, the definitive treatment is cholecystectomy to remove the cause and prevent recurrence of the attacks of pancreatitis [6].

In 2014, Fikret Aksoy and Gökhan Demiral found that cholecystectomy can be safely performed after the resolution of an acute attack in mild and moderate pancreatitis. The timing of laparoscopic cholecystectomy has no significant influence on conversion rates to open surgery after biliary pancreatitis. Early cholecystectomy in biliary pancreatitis could also remove the need of prior endoscopic sphincterotomy and will prevent patients from possible recurrent attacks and complications. However, they suggest that cholecystectomy should be performed by experienced surgeons in patients with Ranson score greater than 3, that is moderate biliary acute pancreatitis, because of the high conversion rates to open cholecystectomy in this group [7].

From 2012 to 2015, Da Costa *et al*. [8] found that early laparoscopic cholecystectomy is better than late cholecystectomy in less rate of recurrence of biliary pancreatitis, less complication of pancreatitis, less perioperative complication (adhesions, blood loss, biliary events, infection, postoperative pain), and shorter duration of postoperative hospital stay.

In 2009, Methias D, Hamel C found that early LC within 14 days after onset of symptoms is safe to treat patients with non-necrotizing biliary AP. Delayed cholecystectomy leads to a significant increase of gallstone-related complications and recurrent attacks of biliary AP. According to the literature, cholecystectomy should be delayed until full recovery from the AP only in patients with severe disease (necrotizing biliary AP or Ranson criteria >3) [9].

In 2013, Johnstone *et al*. found that early cholecystectomy within guideline parameters significantly reduces recurrence of pancreatitis but may increase the risk of surgical complications [10].

In 2016, Jee *et al*. found that in mild to moderate acute biliary pancreatitis, early laparoscopic cholecystectomy reduces the risk of recurrent biliary events without an increase in operative difficulty or perioperative morbidity [11].

In 2014, Demir *et al*. found that in-hospital cholecystectomy after remission of acute pancreatitis is feasible. It will not only result in lower recurrence and complication rates but also shorten length of hospital stay. They recommend performing cholecystectomy during the course of the first episode in patients with acute pancreatitis [12].

Conclusion

Most of the studies found that early cholecystectomy after gallstone pancreatitis is more advantageous than late cholecystectomy after gallstone pancreatitis because it is associated with less rate of recurrence of biliary pancreatitis, less complication of pancreatitis, less perioperative complication (adhesions, blood loss, biliary events, infection, and postoperative pain), and shorter duration of postoperative hospital stay.

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Conflicts of interest

There are no conflicts of interest.

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