How to Avoid Post–Endoscopic Retrograde Cholangiopancreatography Pancreatitis

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KEYWORDS

• Endoscopic retrograde cholangiopancreatography • ERCP • Pancreatitis
• Post-ERCP pancreatitis • Complications

KEY POINTS

- The most effective strategy for avoiding post–endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis remains thoughtful patient selection; in this era of highly accurate diagnostic alternatives, ERCP should be an almost exclusively therapeutic procedure.
- Risk stratification according to patient and procedure-related predictors should guide clinical decision-making and the implementation of prophylactic interventions.
- Sound procedural technique, which includes wire-guided cannulation, early use of alternative cannulation methods in challenging cases, and avoidance of aggressive/repeated pancreatic injections should be used in all cases.
- Prophylactic pancreatic stents should be placed in all high-risk cases.
- Rectal nonsteroidal anti-inflammatory drugs and aggressive lactated Ringer's solution should be considered in all patients undergoing ERCP.

INTRODUCTION

Despite recent advances in prevention, the incidence of pancreatitis after endoscopic retrograde cholangiopancreatography (ERCP) remains 3% to 15%, resulting in substantial morbidity and increased health care costs.[1–3] Approximately 5% of post-ERCP pancreatitis (PEP) will be severe in nature, requiring prolonged

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hospitalization, intensive care unit admission, additional interventions to address local complications, and occasional death.[1] Moreover, post-ERCP pancreatitis (PEP) is a common reason for malpractice lawsuits related to ERCP and contributes significantly to endoscopist stress and burnout.[4,5] Recent advances in patient selection, risk stratification, procedural technique, and prophylactic interventions have improved our ability to avoid this potentially devastating complication and should be embraced by all who perform ERCP (**Fig. 1**). This review aims to provide an evidence-based approach to avoiding PEP and an overview of ongoing research initiatives in this highly relevant area.

DEFINITION

PEP is most commonly diagnosed according to 1 of 2 definitions:

1. Cotton's Consensus Criteria from 1991: new onset or increased upper abdominal pain; *and* pancreatic amylase elevation of 3 times greater than the upper limit of normal at 24 hours after ERCP (subsequently modified by convention to include lipase elevation); *and* resulting hospitalization or prolongation of ongoing hospitalization of 2 or more nights[6]; or,
2. The Atlanta classification of acute pancreatitis updated in 2012: 2 of the following 3 criteria: (1) abdominal pain consistent with acute pancreatitis (acute onset of a persistent, severe, epigastric pain often radiating to the back); (2) serum lipase (or amylase) level at least 3 times greater than the upper limit of normal; (3) characteristic findings of acute pancreatitis on contrast-enhanced computed tomography (CECT) or less commonly MRI or transabdominal ultrasonography.[7]

The Atlanta classification is more objective and appears to be more sensitive than Cotton's definition[8]; however, the clinical impact of this increased diagnostic sensitivity, which may only capture additional mild (self-limited) cases, is unclear. Further, the radiation exposure and costs of systematic computed tomography (CT) scan in all patients with post-ERCP pain are not justified. Both definitions are limited by the

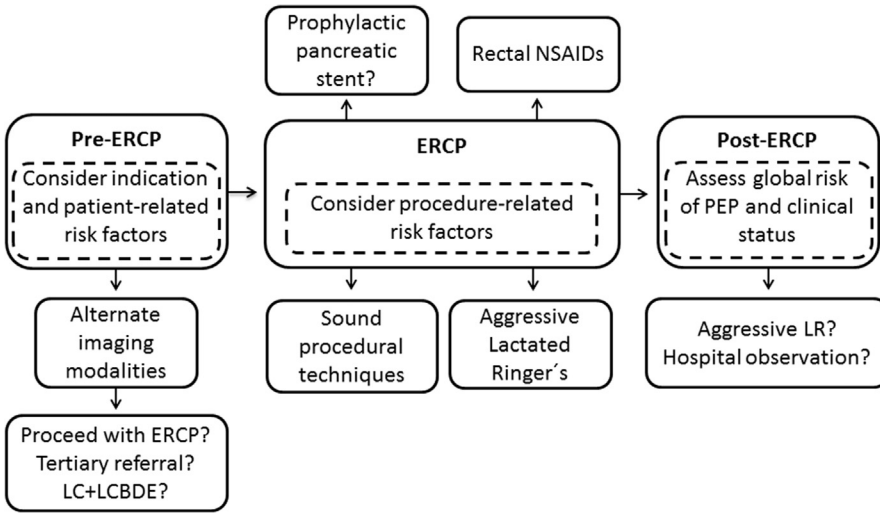

Fig. 1. Framework of interventions to reduce the risk of post-ERCP pancreatitis. LC, laparoscopic cholecystectomy; LCBDE, laparoscopic common bile duct exploration.

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