

Pancreatic stents for prevention of post-ERCP pancreatitis: the evidence is irrefutable

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It has been 20 years since the first report of a randomized controlled trial of pancreatic stents as a strategy to reduce the risk of post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis [1]. While sometimes technically challenging, and potentially associated with adverse consequences especially if failed [2], evidence for efficacy and effectiveness of pancreatic stenting has continued to mount. The practice has become increasingly widespread such that placement of pancreatic stents is now considered to be standard of care for prevention of post-ERCP pancreatitis in patients at high risk of this potentially severe complication [3]. As a result, it has seemed as if the entire endoscopic world has been steadily moving in the direction of accepting the concept of the technique, all the while refining equipment and methods. Skeptics have remained, in part because of perception of the difficulty of pancreatic stent placement and questions about its effectiveness. This doubt has been partially fueled by inconsistent findings of meta-analyses, largely because of heterogeneity of available studies, and limited numbers of prior randomized trials. Meta-analyses generally have shown either efficacy of pancreatic stents for prevention of mild-to-moderate pancreatitis or for severe pancreatitis, but not for both.

Pharmacologic prevention of post-ERCP pancreatitis has been a “holy grail” that has been sought for many years. In a recent publication from the USA, an inexpensive, non-toxic solution might seem to have been found:

rectal indomethacin given at a dose of 100 mg after ERCP in high-risk patients reduced risk of pancreatitis [4]. Although apparently effective in reducing risk of post-ERCP pancreatitis in patients with and without pancreatic stents, post hoc analysis suggested that indomethacin was not effective either in the very highest risk group (type III sphincter of Oddi dysfunction) or in certain individual institutions. Partly as a result of this paper, there has been a recent push-back to the steady progress in establishing pancreatic stents as standard of care.

In the current context, Professor Mazaki et al. [5] are to be congratulated for performing the highest quality and most thorough meta-analysis to date of pancreatic stents for the prevention of post-ERCP pancreatitis. Unlike other analyses, they included all of the recent randomized trials, including two trials involving patients at mixed risk rather than only those at high risk. As a result, their analysis demonstrated that overall incidence of post-ERCP pancreatitis decreased from 19 % in the control group to 7 % in the pancreatic stent group. This is the first meta-analysis with sufficient power to demonstrate that pancreatic stents are effective in preventing both mild to moderate and severe post-ERCP pancreatitis.

So who should receive pancreatic stents for prevention of post-ERCP pancreatitis? The current evidence supports their use in all patients at high risk of this complication, for which criteria have been fairly well established. These include the ever growing list of patient-related and procedure-related risk factors [6], the latest of which is pancreatic guidewire-assisted biliary cannulation [7]. It is likely that a randomized trial will be performed to compare rectal indomethacin alone with rectal indomethacin plus pancreatic stents. It is this author's opinion that for high-risk patients, such as those undergoing pancreatic sphincterotomy for recurrent pancreatitis or sphincter of Oddi

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dysfunction, or difficult cannulation in younger patients with a normal pancreas, pancreatic stents will remain essential and will not be replaced by any pharmacologic means of prophylaxis. The meta-analysis by Mazaki and colleagues will stand as an important step in solidifying evidence for the central role of pancreatic stents in improving safety of ERCP.

References

1. Smithline A, Silverman W, Rogers D, Nisi R, Wiersema M, Jamidar P, et al. Effect of prophylactic main pancreatic duct stenting on the incidence of biliary endoscopic sphincterotomy-induced pancreatitis in high-risk patients. *Gastrointest Endosc.* 1993;39:652–7.
2. Freeman ML, Overby CS, Qi DF. Pancreatic stent insertion: consequences of failure, and results of a modified technique to maximize success. *Gastrointest Endosc.* 2004;59:8–14.
3. Freeman ML. Pancreatic stents for prevention of post-ERCP pancreatitis: for everyday practice or for experts only? *Gastrointest Endosc.* 2010;71:940–4.
4. Elmunzer BJ, Scheiman JM, Lehman GA, Chak A, Mosler P, Higgins PDR, et al. A randomized trial of rectal indomethacin to prevent post-ERCP pancreatitis. *N Engl J Med.* 2012;366:1414.
5. Mazaki T, Mado K, Masuda H, Shiono M. Prophylactic pancreatic stent placement and post-ERCP pancreatitis: an updated meta-analysis. *J Gastroenterol.* 2013. doi:[10.1007/s00535-013-0806-1](https://doi.org/10.1007/s00535-013-0806-1).
6. Arata S, Takada T, Hirata K, Yoshida M, Mayumi T, Hirota M, et al. Post-ERCP pancreatitis. *J Hepatobiliary Pancreat Sci.* 2010;17:70–8.
7. Ito K, Fujita N, Noda Y, Kobayashi G, Obana T, Horaguchi J, et al. Can pancreatic duct stenting prevent post-ERCP pancreatitis in patients who undergo pancreatic duct guidewire placement for achieving selective biliary cannulation? A prospective randomized controlled trial. *J Gastroenterol.* 2010;45:1183–91.