

Pain Management in Chronic Pancreatitis

**R. Verheijen, M.D. , R. Slappendel, M.D. , J. B.M.J. Jansen, M.D., Ph.D*,
B. J. P. Crul, M.D., Ph.D.**

**Pain Clinic/Institute of Anesthesiology, Department of Gastroenterology & Hepatology*,
University Hospital St. Radboud, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands.**

Introduction . Chronic pancreatitis leads to destruction of pancreatic parenchym and ductal structures. Pain management in chronic pancreatitis is often difficult and frustrating. Nociception of pancreatic origin can reach the CNS along two pathways: from afferent fibers of the pancreas via the greater and lesser thoracic splanchnic nerves and from innervation of the parietal peritoneum via the phrenic nerves and lower six intercostal and subcostal nerves. Denervation can be achieved at different levels. The results of coeliac plexus block are limited (1) and not without risks (2). Interpleural analgesia has shown to be effective with a striking long pain-free period (3). With these methods we had the following strategy for pain management in chronic pancreatitis. Medical therapy, containing paracetamol, NSAID's and meperidine was initially tried. In case of insufficient pain relief interpleural analgesia was performed. When intractable pain reoccurred immediately after removal of the interpleural catheter an intrathecal catheter was inserted with continuous administration of a morphine and low dose bupivacaine admixture (4).

Methods . Ten patients with chronic pancreatitis were treated according to this strategy. All patients experienced inadequate pain relief after medication (paracetamol, NSAID's, meperidine). An interpleural catheter was inserted following the guidelines of Reiestad (3). When intolerable pain reoccurred a intrathecal was inserted at an interspace between the second and fourth lumbar vertebra and advanced to T7-10. The initial intrathecal daily morphine dose was 0.0017 of the current daily meperidine dose. Dose adjustments of the intrathecal infusion rate were made when pain relief was inadequate or side effects occurred. The daily intrathecal bupivacaine dose was kept below 30 mg.

Results . Eight patients underwent a surgical drainage procedure, also without pain relief after a follow up period of three months. Two patients died because of surgical complications. Nine patients had successful interpleural analgesia during the period the catheter was in situ. Only one patient had a pain free period of four months after the interpleural catheter was removed. There were no side effects of interpleural analgesia. Five patients received intrathecal morphine and bupivacaine, three through external pumps, and two through implanted Medtronic® synchro-med pumps. All patients had satisfactory pain relief during the intrathecal infusion period. One patient with an external pump got a bacterial meningitis seven weeks after catheter placement. The pain relief in the two patients with an implanted pump with a follow up of over half a year was excellent.

Discussion . A reason for the immediately reoccurrence of pain after removal of the interpleural catheter compared with Reiestad (3) could be a different stage of the disease in our patients. Long-term intrathecal analgesia with an opioid plus bupivacaine admixture is successful in the management of intractable cancer pain. An advantage is, that it is a reversible technique. The risk of infection can be reduced by using an implantable infusion system. We conclude, that long-term intrathecal morphine/bupivacaine is an alternative for surgical and neuroablative procedures for pain management in chronic pancreatitis. However the numbers of patients, treated with intrathecal morphine/bupivacaine are limited (n=5), long-term results remain speculative.

References .

1. Leung JWC, Bowen-Wright M, Aveling W, Shorvon PJ, Cotton PB: Coeliac plexus block for pain in pancreatic cancer and chronic pancreatitis. *Br J Surg* 70:730-732, 1983
2. Van Dongen RTM, Crul BJP: Paraplegia following coeliac plexus block. *Anaesthesia* 46:862-863, 1991
3. Reiestad F, McIlvaine WB, Kvalheim L, Haraldstad P, Pettersen B: Successful treatment of chronic pancreatitis pain with interpleural analgesia. *Can J Anaesth* 36:713-716, 1989
4. Penning JP, Yaksk TL: Interaction of intrathecal morphine with bupivacaine and lidocaine in the rat. *Anesthesiology* 77:1186-1200, 1992