OPEN COLORECTAL SURGERY

SUMMARY RECOMMENDATIONS

Notes on PROSPECT recommendations

PROSPECT provides clinicians with supporting arguments for and against the use of various interventions in postoperative pain based on published evidence and expert opinion. Clinicians must make judgements based upon the clinical circumstances and local regulations. At all times, local prescribing information for the drugs referred to must be consulted.

Pain after open colorectal surgery and aims of the PROSPECT review

Open colorectal surgery is associated with significant postoperative pain (Gerbershagen 2013). The aim of this systematic review (Uten 2024) was to update the available literature and develop recommendations for optimal pain management after colorectal surgery, using PROSPECT methodology. The previous recommendations, based on a systematic review of 93 randomised controlled trials, are available on the PROSPECT website (Archive: Open Colorectal Surgery 2016).

The unique PROSPECT methodology is available at https://esraeurope.org/prospect-methodology/. The methodology requires that the included studies are critically assessed, taking into consideration their clinical relevance, use of basic analgesia, and the effectiveness, adverse effects, and invasiveness of each analgesic or anaesthetic technique (Joshi 2019). The methodology has been updated now for future reviews (Joshi 2023).

Literature databases were searched for randomised controlled trials and meta-analyses, published in the English language, which evaluated the effects of analgesic, anaesthetic and surgical interventions on pain after open colorectal surgery from January 2016 to January 2022. 13 new studies met the inclusion criteria.

This review is registered on PROSPERO (CRD4202338800).

Summary of recommendations and key evidence

Summary of recommendations and key evidence for pain management in patients undergoing open colorectal surgery
Systemic analgesia
IV paracetamol and NSAID/COX-2 inhibitors are recommended for colonic surgery; paracetamol is recommended for rectal surgery; these should be administered pre-operatively or intra-operatively and continued postoperatively, if there are no contraindications • No new procedure-specific studies were identified but these agents are recommended as part of basic multimodal analgesia in accordance with PROSPECT methodology • PROSPECT recommends NSAIDs/COX-2 specific inhibitors for colonic, but not for rectal surgery, given concern over potential anastomotic leakage (Holte 2009; Bhangu 2014; Iversen 2018; Modasi 2019; Chen 2022; Chapman 2019)
IV lidocaine is recommended when epidural analgesia is not feasible or contra-indicated • No change to the 2016 recommendation • In the updated literature review, one RCT reported significantly reduced rescue opioid consumption with similar pain scores with intravenous lidocaine compared to placebo, in the absence of basic analgesia (Ho 2018) • Safety considerations: No other continuous infusion of local anaesthetic should be administered when infusing IV lidocaine (Foo 2021; Shanthanna 2021). Moreover, a nerve block and an IV lidocaine infusion cannot be combined at the same time. Careful dosing and monitoring are necessary to prevent systemic absorption and toxicity
Opioids should be reserved as rescue analgesia in the postoperative period • Although opioids are effective for pain relief, they can cause side effects and should only be used as rescue analgesia when other options are insufficient
Regional techniques
Low continuous TEA is recommended as first-line treatment • Continuous TEA was also recommended in 2016 • In the updated literature review, procedure-specific evidence showed reduced pain scores at rest and movement with TEA vs systemic analgesia (Falk 2021; Radovanović 2017)

• In one study (Falk 2021), patients in the epidural group needed vasopressors for haemodynamic stability
Preoperative bilateral TAP block is recommended if TEA is not feasible or contra-indicated • This is a change from the 2016 recommendations • In the updated literature review, procedure-specific evidence showed reduced pain scores with bilateral TAP block vs systemic analgesia (Zhan 2020; Qazi 2017). Qazi 2017 also found a reduction in postoperative opioid consumption
Postoperative continuous pre-peritoneal infusion of LA is recommended when epidural analgesia is not feasible or contra-indicated • No change to the 2016 recommendation; the updated literature review found no new studies of continuous pre-peritoneal infusion of LA
Surgical techniques
Laparoscopic colorectal surgery is recommended over open colon surgery • No change to the 2016 recommendation; the updated literature review found no new studies of surgical techniques
Diathermy is recommended over the scalpel • No change to the 2016 recommendation; the updated literature review found no new studies of surgical techniques
Horizontal/curved (transverse) incision is recommended over a vertical incision • No change to the 2016 recommendation; the updated literature review found no new studies of surgical techniques

COX, cyclooxygenase; IV, intravenous; LA, local anaesthetic; NSAID, non-steroidal anti-inflammatory drug; RCT, randomised controlled trial; TAP, transabdominal plane; TEA, thoracic epidural analgesia.

Interventions that are NOT recommended

Analgesic interventions that are not recommended* for pain management in patients undergoing open colorectal surgery.

Intervention	Reason for not recommending
Systemic analgesia	
Extended-release dinalbuphine	Insufficient evidence
Dexmedetomidine	Insufficient evidence
Pregabalin	Insufficient evidence
Duloxetine	Insufficient evidence
Regional techniques	
Erector spinae block	Insufficient evidence
Bilateral rectus sheath block	Insufficient evidence

*The studies on open colectomy are too few or inconclusive for a number of interventions in this list of not recommended options.

Overall PROSPECT recommendations table

Overall recommendations for procedure-specific pain management in patients undergoing open colorectal surgery	
Systemic analgesia	• IV paracetamol and NSAID/COX-2 inhibitors are recommended for colonic surgery, paracetamol is recommended for rectal surgery; these should be administered pre-operatively or intra-operatively and continued postoperatively, if there are no contraindications • IV lidocaine is recommended when TEA is not feasible or contra-indicated; administered intra-operatively or postoperatively • IV opioids are recommended as rescue analgesia in the postoperative period
Regional techniques	• Low continuous TEA is recommended • Preoperative bilateral TAP block is recommended if TEA is not feasible or contra-indicated • Postoperative continuous pre-peritoneal infusion of LA is recommended when epidural analgesia is not feasible or contra-indicated
Surgical techniques	• Laparoscopic colorectal surgery is recommended over open colon surgery • Diathermy is recommended over the scalpel • Horizontal/curved (transverse) incision is recommended over a vertical incision

COX, cyclooxygenase; IV, intravenous; LA, local anaesthetic; NSAID, non-steroidal anti-inflammatory drug; TAP, transabdominal plane; TEA, thoracic epidural analgesia.

PROSPECT publication

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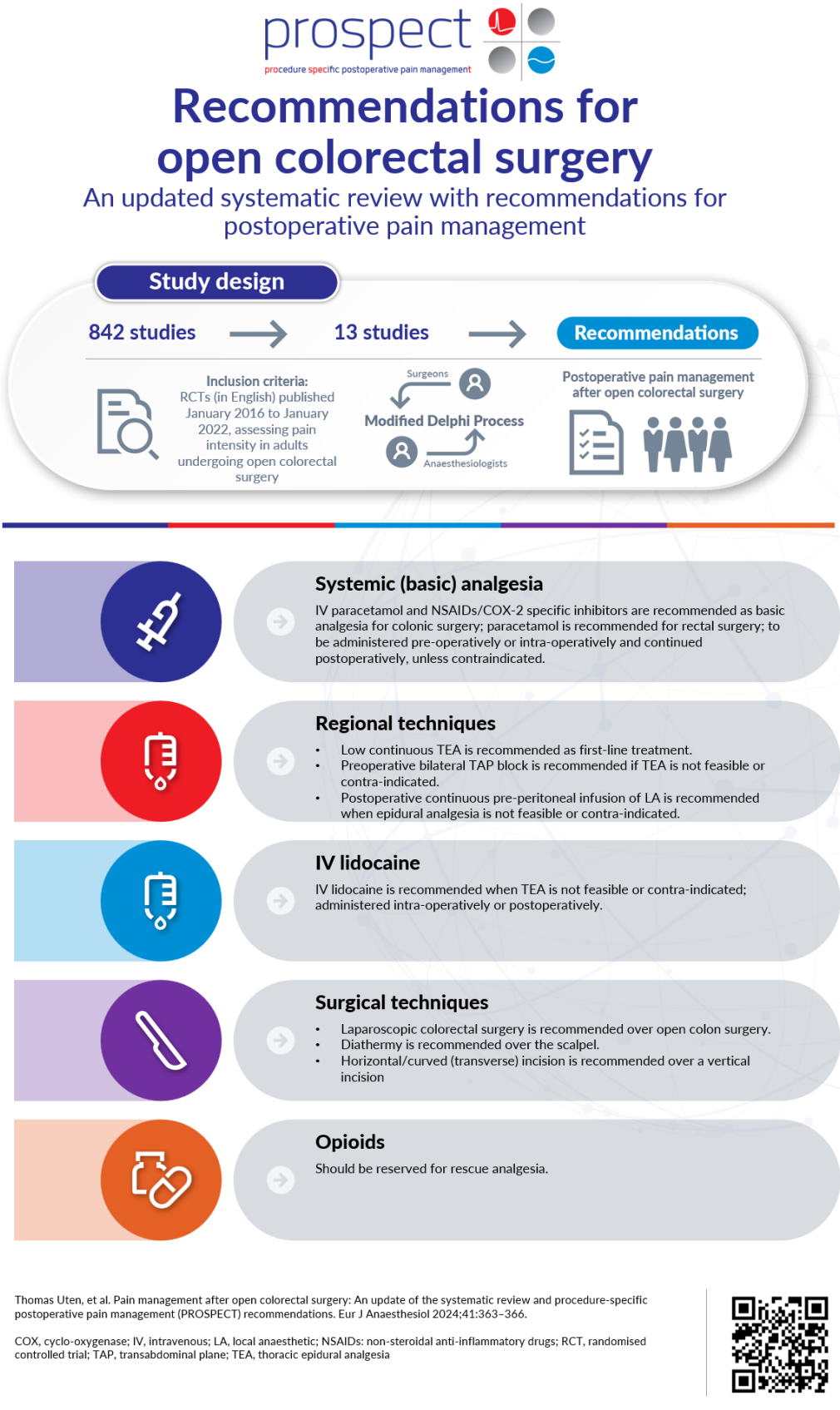
Pain management after open colorectal surgery: An update of the systematic review and procedure-specific postoperative pain management (PROSPECT) recommendations.

Eur J Anaesthesiol 2024;41:363–366.

PROSPECT recommendations for open colorectal surgery-infographic



Thomas Uten, et al. Pain management after open colorectal surgery: An update of the systematic review and procedure-specific postoperative pain management (PROSPECT) recommendations. Eur J Anaesthesiol 2024;41:363–366.

COX, cyclo-oxygenase; IV, intravenous; LA, local anaesthetic; NSAIDs: non-steroidal anti-inflammatory drugs; RCT, randomised controlled trial; TAP, transabdominal plane; TEA, thoracic epidural analgesia