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. GoRs of recommendation (GoR) are assigned according to the overall level of evidence (LoE) on which the recommendations are based, which is determined by the quality and source of evidence.

GoRs of recommendation (GoR) based on source and level of evidence (LoE): Summary table

An explanation of how study quality assessments are performed to determine the LoE and GoR can be found at the following link: **Error! Reference source not found.**.

The AGREE II instrument (Brouwers 2010) is used internationally to assess the methodological rigour and transparency of practice guidelines. As far as possible, the methodology of the PROSPECT Colorectal surgery review meets the requirements of 'Domain 3: Rigour of development' of the AGREE II instrument:

- Systematic methods were used to search for evidence.
- The criteria for selecting the evidence are clearly described.
- The strengths and limitations of the body of evidence are clearly described.
- The methods for formulating the recommendations are clearly described.
- The health benefits, side effects, and risks have been considered in formulating the recommendations.
- There is an explicit link between the recommendations and the supporting evidence.
- The guideline has been externally reviewed by experts prior to its publication. (The evidence and recommendations are submitted for peer-review after publication on the PROSPECT website)
- A procedure for updating the guideline is provided. (Methodology is provided so that the systematic review can be updated as required)

SUMMARY RECOMMENDATIONS

The Summary Recommendations and Overall Recommendations are based on the evidence identified in the original literature review (80 studies published between 1966 and March 2009; see Archive folder) and the updated literature review (18 studies published between March 2009 and October 2016)

PRE-OPERATIVE SUMMARY RECOMMENDATIONS

Pre-operative interventions that are recommended Note: Unless otherwise stated, 'pre-operative' refers to interventions applied before surgical incision Note: Analgesics should be administered at the appropriate time (pre- or intra-op) to provide sufficient analgesia in the early recovery period	
Systemic analgesia	• COX-2-selective inhibitors (GoR B) (only for patients who do not receive epidural analgesia) • Continuous administration of pre-/intra-operative IV lidocaine if continued during the immediate postoperative period (GoR B), when epidural analgesia is not feasible or contra-indicated
Epidural analgesia	• Continuous thoracic epidural anaesthesia and analgesia, at a level appropriate to the site of incision are recommended for routine use (GoR A) • A combination of local anaesthetic and opioid is recommended (GoR A) because of the increased analgesic efficacy of the combination compared with either drug alone.

Pre-operative NOT recommended

Systemic analgesia

IV clonidine	It is associated with an increased risk of hypotension and bradycardia (GoR D).
Conventional NSAIDs	Pre-operative administration of these agents can increase the risk of intra- and postoperative bleeding (GoR B).
Corticosteroids for analgesia	Procedure-specific evidence shows no significant benefit in reducing pain scores (but they may be used for reduction of PONV). (GoR A).
Gabapentin/pregabalin	GoR D due to a lack of procedure-specific evidence
Continuous administration of IV lidocaine limited to the pre-/intra-	GoR D because of inconsistent and insufficient procedure-specific evidence.

operative period	
NMDA receptor antagonists	GoR D because of limited procedure-specifc evidence.
Opioids	They are significantly less effective than postoperative opioids for reducing postoperative pain (GoR B)
Calcium channel antagonists	Limited procedure-specific evidence showing a lack of postoperative analgesic effect. (GoR B).

Spinal anaesthesia

Spinal morphine	Due to the risk of side effects. (GoR D).
Spinal clonidine	Based on procedure-specific evidence showing limited analgesic effect and the risk of side effects. (GoR B).

Non-pharmacological therapy

Pre-operative use of guided imagery	Due to limited procedure-specific evidence (GoR D).
Laxatives for analgesia	Limited procedure-specific evidence shows no analgesic benefit (but they may be used for reasons other than pain relief) (GoR B).
Pentoxifylline	Due to limited procedure-specific evidence of its analgesic effect (GoR D).

LA for analgesia

Bilateral TAP block	Due to limited procedure-specific evidence (GoR D).

INTRA-OPERATIVE SUMMARY RECOMMENDATIONS

Intra-operative interventions that are recommended Note: Unless otherwise stated, 'intra-operative' refers to interventions applied after incision and before wound closure Note: Analgesics should be administered at the appropriate time (pre- or intra-op) to provide sufficient analgesia in the early recovery period	
Anaesthetic techniques and co-administered analgesics	
Systemic analgesia	• COX-2-selective inhibitors (GoR B) (only if not received preoperatively, and for patients who do not receive epidural anaesthesia). • Opioids (GoR B) (only for patients who do not receive epidural anaesthesia). • Continuous administration of pre-/intra-operative IV lidocaine if continued during the immediate postoperative period, when epidural analgesia is not feasible or contra-indicated (GoR B).
Epidural analgesia	• Continuous thoracic epidural anaesthesia and analgesia, at a level appropriate to the site of incision are recommended for routine use (GoR A). • A combination of local anaesthetic and opioid is recommended (GoR A) because of the increased analgesic efficacy of the combination compared with either drug alone.
Operative techniques	• The decision concerning the type of operative technique or incision to use for Colorectal surgery should be primarily based on factors other than the management of postoperative pain, e.g. malignancy versus benign disease operative risk factors of the patient, risk of wound infection, and availability of surgical expertize (GoR D). • Laparoscopic Colorectal surgery is recommended over open colon surgery for reducing postoperative pain, if the conditions outlined above allow (GoR A) • Horizontal/curved (transverse) incision is recommended over a vertical incision for analgesic and other benefits if the operative conditions allow (GoR B). In addition, the horizontal/curved incision is preferred for its cosmetic benefits (GoR D). • Diathermy is recommended over the scalpel (GoR C). • Maintenance of normothermia is recommended for improved clinical outcomes, but it is not helpful for reducing postoperative pain (GoR A).

Intra-operative NOT recommended

Systemic analgesia

IV clonidine	It is associated with an increased risk of hypotension, sedation and bradycardia (GoR D).
Calcium channel antagonists	Based on limited procedure-specific evidence showing a lack of postoperative analgesic effect (GoR B).
Gabapentin/pregabalin	Due to a lack of procedure-specific evidence (GoR D).
Continuous administration of IV lidocaine limited to the pre-/intra-operative period	Due to inconsistent and insufficient procedure-specific evidence (GoR D).
NMDA receptor antagonists	Due to limited procedure-specific evidence of analgesic efficacy (GoR D).
Opioids	In patients receiving epidural analgesia (GoR D).

Epidural analgesia

Addition of clonidine to the combination of epidural LA + opioid	Due to side effects (GoR D).

Spinal analgesia

Spinal analgesia in combination with epidural anaesthesia	Based on a lack of benefit in reducing postoperative pain in Colorectal surgery (GoR B).

POSTOPERATIVE SUMMARY RECOMMENDATIONS

Post-operative interventions that are recommended Note: Unless otherwise stated, 'postoperative' refers to interventions applied at or after wound closure Note: Analgesics should be administered at the appropriate time (pre- or intra-op) to provide sufficient analgesia in the early recovery period	
Anaesthetic techniques and co-administered analgesics	
Systemic analgesia	• COX-2-selective inhibitors (GoR B) (only for patients who do not receive epidural analgesia or with the cessation of epidural analgesia) • Conventional NSAIDs (GoR A) (only for patients who do not receive epidural analgesia or with cessation of epidural analgesia). • IV lidocaine (GoR B) (when epidural is not feasible or contra-indicated). • Opioids as rescue if non-opioid analgesia is insufficient or contra-indicated. (GoR B). • Paracetamol (GoR B) for moderate- or low-intensity pain (only for patients that do not receive epidural analgesia, or after cessation of epidural analgesia).
Epidural analgesia	• Continuous thoracic epidural anaesthesia and analgesia at a level appropriate to the site of incision (GoR A). • A combination of local anaesthetic and opioid is recommended (GoR A) because of the increased analgesic efficacy of the combination compared with either drug alone.
TAP block	• Evidence is insufficient to recommend TAP block but TAP blocks can be considered for acute pain relief after Colorectal surgery when epidural anesthesia is not possible (GoR A).
Wound infiltration or infusion	• Continuous pre-peritoneal infusion of LA, as an alternative when epidural analgesia is not feasible or contra-indicated (GoR B).
Multi-modal rehabilitation protocols	• Care protocols (which include controlled rehabilitation with early ambulation and diet, or multi-modal optimisation programmes) (GoR A).

Postoperative NOT recommended

Systemic analgesia

Gabapentin/pregabalin	Due to a lack of procedure-specific evidence (GoR D).
NMDA receptor antagonists	Due to limited procedure-specific evidence of analgesic efficacy(GoR D).
IM strong opioids	GoR D.

Wound infiltration or infusion

Mechanical massage with aspiration of abdominal wall	Further supportive data are needed (GoR D).
Nasogastric tubes	They are associated with discomfort and inconvenience and do not decrease the duration of postoperative ileus (GoR A).

OVERALL PROSPECT RECOMMENDATIONS

Algorithm for the management of postoperative pain for colorectal surgery

Overall recommendations for postoperative pain management for open colorectal surgery