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.

Grades of recommendation (GoR) and levels of evidence (LoE)

GoRs are assigned according to the overall LoE on which the recommendations are based, which is determined by the quality and source of evidence (see *Evidence Review Process – Formulating the PROSPECT Recommendations*)

Summary recommendations

Recommended pre- and intra-operative interventions • Unless otherwise stated, 'pre-operative' refers to interventions applied before surgical incision and 'intra-operative' refers to interventions applied after incision and before wound closure • Analgesics should be administered at the appropriate time (pre- or intra-op) to provide sufficient analgesia in the early recovery period	
NSAIDs/COX-2-selective inhibitors	**Based on procedure-specific evidence of analgesic efficacy (LoE 1), systemic NSAIDs/COX-2-selective inhibitors are recommended (Grade A), in the absence of contraindications, administered in time to provide sufficient early post-operative analgesia**
Paracetamol	**Paracetamol is recommended, given its safety and established role in baseline pain management, despite a lack of procedure-specific evidence (Grade B), and it should be administered in time to provide sufficient early post-operative analgesia**
Parenteral glucocorticoids	**Pre-operative parenteral glucocorticoids are recommended (Grade B), based on procedure-specific evidence (LoE 1 and 2) for analgesic efficacy**
Laxatives	**Laxatives are recommended (Grade A), started in the days prior to surgery, as an adjunct to analgesic therapy, based on procedure-specific evidence (LoE 1 and 2)**

Oral metronidazole	**Oral metronidazole is recommended (Grade A) as an adjunct to analgesic therapy based on procedure-specific evidence (LoE 1)**
Pudendal nerve block as an analgesic adjunct or anaesthetic intervention	**Pudendal nerve block under GA or LA is recommended as there is some evidence that it is more effective than perianal infiltration of local anaesthetic (Grade B, LoE 2)**
	Pudendal block, with or without GA, is recommended as the anaesthetic modality of choice (Grade A) based on procedure-specific evidence of analgesic benefit over spinal anaesthesia (LoE 1)
Operative techniques	**Closed haemorrhoidectomy (Grade B) or open haemorrhoidectomy with electrocoagulation of the pedicle (Grade A) is recommended as the primary procedure for grade 3 and 4 haemorrhoids, based on:** • **Lower level evidence that closed haemorrhoidectomy is less painful than open haemorrhoidectomy (LoE 2)** • **Evidence that open haemorrhoidectomy with pedicle electrocoagulation reduces pain compared with pedicle ligation (LoE 1)**

Recommended post-operative interventions • Unless otherwise stated, 'postoperative' refers to interventions applied at or after wound closure • Analgesics should be administered at the appropriate time (pre- or intra-op) to provide sufficient analgesia in the early recovery period	
NSAIDs/COX-2-selective inhibitors	• **Based on procedure-specific evidence of analgesic efficacy (LoE 1), systemic NSAIDs/COX-2-selective inhibitors are recommended (Grade A) in the absence of contraindications**
Paracetamol	• **Paracetamol is recommended, given its safety and established role in baseline pain management, despite a lack of procedure-specific evidence (Grade B)**
Opioids	• **Because opioids can cause constipation, nausea, vomiting and urinary retention, non-opioid analgesics should be used in preference (Grade B), with opioids reserved for rescue**
Laxatives	• **Laxatives are recommended (Grade A), started in the**

	days prior to surgery, as an adjunct to analgesic therapy, based on procedure-specific evidence (LoE 1)
Oral metronidazole	• **Oral metronidazole is recommended (Grade A) as an adjunct to analgesic therapy based on procedure-specific evidence (LoE 1)**
Topical lidocaine/GTN	• **The combination of topical 2% lidocaine and 0.2% GTN, or 0.4% GTN on its own, is recommended post-operatively (Grade A), based on procedure-specific evidence of analgesic efficacy (LoE 1 and 2)**
Diosmin	• **Diosmin is recommended as an adjunct to non-opioid analgesia (Grade A) based on procedure-specific evidence of a reduction in postoperative pain (LoE 1 and 2)**
Topical cholestyramine	• **Topical cholestyramine is recommended post-operatively (Grade A) based on procedure-specific evidence of analgesic efficacy (LoE 1)**
Topical EMLA	• **Topical EMLA is recommended (Grade A) but it only reduced pain in the very short term in procedure-specific studies (LoE 1 and 2)**
Topical nifedipine	• **Topical nifedipine is recommended (Grade A) but it only reduced pain in the very short term in procedure-specific studies (LoE 1)**
Topical sucralfate ointment	• **Topical sucralfate ointment is recommended (Grade A) as procedure-specific evidence shows a reduction in pain scores (LoE 1)**

Interventions that are NOT recommended	
Mechanical bowel preparation	• **Pre-operative mechanical bowel preparation did not reduce postoperative pain (LoE 1) and is not recommended (Grade A)**
Prophylactic intravenous antibiotics	• **Prophylactic intravenous antibiotics did not reduce post-operative pain (LoE 1) and are not recommended (Grade A)**

Gabapentinoids	• **Gabapentinoids cannot be recommended (Grade D, LoE 4) because there is no procedure-specific evidence**
Ketamine	• **Ketamine infusion is not recommended (Grade A) based on procedure-specific evidence showing no analgesic effect (LoE 1)**
Dextromethorphan	• **Dextromethorphan is not recommended (grade D, LoE 4) due to limited procedure-specific evidence**
Topical diltiazem	• **Topical diltiazem is not recommended (Grade A) as procedure-specifice evidence shows it does not reduce pain (LoE 1)**
Topical metronidazole	• **Topical metronidazole is not recommended (Grade D) as procedure-specific evidence of analgesic benefit is limited (LoE 2)**
Application of a warm bag	• **Application of a warm bag is not recommended (Grade D) as procedure-specific evidence of benefit is limited (LoE 2)**
Liposomal bupivacaine for perianal local anaesthetic infiltration	• **Liposomal bupivacaine cannot yet be recommended (Grade D) due to a lack of inclusion of other recommended analgesic techniques, despite extended analgesia compared with plain bupivacaine/placebo, in two studies (LoE 4)**
Adjuncts to spinal anaesthesia (morphine, clonidine)	• **Adjuncts to spinal anaesthesia (morphine, clonidine) are not recommended despite a reduction in pain due to potential side effects (Grade D)**
Botulinum toxin	• **Injection of botulinum toxin is not recommended (Grade D) due to inconsistent procedure-specific evidence for analgesic benefit in the postoperative period (LoE 4)**
Anal dilator	• **The use of an anal dilator as an adjunct to haemorrhoid surgery is not recommended for analgesia (Grade D, LoE 4) based on limited procedure-specific evidence**

Overall PROSPECT recommendations for the management of postoperative pain: Haemorrhoidectomy

Perioperative pain treatment for haemorrhoidectomy should include, unless contraindicated:	
Pre-/intra-operative	• Laxatives, started in the days before surgery • Parenteral glucocorticoids • Oral metronidazole • Pudendal nerve block +/- general anaesthesia • Paracetamol + NSAIDs/COX-2-selective inhibitors, administered in time to provide sufficient early postoperative analgesia
Operative technique	• Closed haemorrhoidectomy OR • Open haemorrhoidectomy with pedicle electrocoagulation
Postoperative	• Paracetamol + NSAIDs/COX-2-selective inhibitors • Opioids as rescue analgesia • Laxatives • Oral metronidazole • Topical GTN +/- lidocaine