

HERNIA REPAIR 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.

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: [Relationship between quality and source of evidence, levels of evidence and grades of recommendation](#).

Notes on pain after open inguinal hernia repair surgery

Open inguinal hernia repair is associated with moderate-to-severe postoperative pain, which may delay recovery and return to activities of daily living ([Simons 2018](#)). In addition, inadequate pain control can increase unplanned admission rate and readmission after discharge home ([Simons 2018](#)). Furthermore, inadequate post-operative pain relief may lead to hyperalgesia and persistent postoperative pain ([Wheeler 2019](#)).

The PROSPECT recommendations for pain management after open inguinal hernia repair have been published previously ([Joshi 2012](#)). However, an update assessing analgesic interventions was necessary.

Summary recommendations

The updated literature strengthens the previous PROSPECT recommendations for pain management in patients undergoing open inguinal hernia repair ([Joshi 2012](#)).

The updated PROSPECT methodology further strengthens the recommendations, because it goes beyond assessment of the available evidence based solely on the simple statistical analysis ([Joshi 2019](#)).

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-operatively) to provide sufficient analgesia in the early recovery period

Paracetamol and NSAIDs/COX-2-selective inhibitors	<ul style="list-style-type: none"> • Systemic analgesia should include paracetamol (Grade D) and non-steroidal anti-inflammatory drug (NSAID) or cyclo-oxygenase (COX)-2-selective inhibitor (Grade D) administered pre-operatively or intra-operatively and continued post-operatively. • Paracetamol, NSAIDs and COX-2-selective inhibitors have been shown to provide excellent analgesia and reduce opioid requirements (Joshi 2019).
IV dexamethasone	<ul style="list-style-type: none"> • A single dose of IV dexamethasone is recommended (Grade B) for its ability to increase the analgesic duration of the block, decrease analgesic use, and for antiemetic effects.
Regional analgesia	<ul style="list-style-type: none"> • Local anaesthetic infiltration and/or regional analgesia (ilio-inguinal/ilio-hypogastric nerve block or transversus abdominis plane block) is recommended to provide regional analgesia (Grade A).
Anaesthesia	
	<ul style="list-style-type: none"> • A field block (e.g. ilio-inguinal/ilio-hypogastric block) with or without wound infiltration is recommended as a sole anaesthetic or as an adjunct to general anaesthesia (Grade A). • Recent international guidelines recommend the use of local anaesthesia provided the surgeon is experienced in this

	<p>technique (Simons 2018).</p> <ul style="list-style-type: none"> • Patient selection and acceptance to a sole regional/local anaesthetic is imperative. • A recent meta-analysis of RCTs comparing local anaesthesia versus other forms of anaesthesia (including general anaesthesia) concluded that local anaesthesia allows shorter operating room times and is associated with a lower incidence of urinary retention (compared with neuraxial anaesthesia) (Argo 2019). Also, patient satisfaction with local anaesthesia was similar to that with other anaesthetic techniques.
<p>Surgical Technique</p>	
	<ul style="list-style-type: none"> • It is recommended that the surgical technique should be based on surgeon's expertise, hernia-related characteristics, and availability of local resources (Simons 2018). • As far as postoperative pain is concerned, mesh techniques are recommended in preference to non-mesh techniques (Grade A). • This recommendation concurs with the international guidelines for groin hernia management (Simons 2018).

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-operatively) to provide sufficient analgesia in the early recovery period

<p>Paracetamol and NSAIDs/COX-2-selective inhibitors</p>	<ul style="list-style-type: none"> • Systemic analgesia should include paracetamol (Grade D) and non-steroidal anti-inflammatory drug (NSAID) or cyclo-oxygenase (COX)-2-selective inhibitor (Grade D) administered pre-operatively or intra-operatively and continued post-operatively. • Paracetamol, NSAIDs and COX-2-selective inhibitors have been shown to provide excellent analgesia and reduce opioid requirements (Joshi 2019).
<p>Opioids</p>	<ul style="list-style-type: none"> • Opioids are recommended as rescue analgesics in the post-operative period (Grade D).

Interventions that are NOT recommended

Analgesic interventions that are not recommended for pain management in patients undergoing open inguinal hernia repair.

	Intervention	Reason for not recommending
Pre-operative	Gabapentinoids	Inconsistent procedure-specific evidence
	Clonidine	Limited procedure-specific evidence
	Dipyrrone	Limited procedure-specific evidence
	Etanercept (TNF- α inhibitor)	Limited procedure-specific evidence
	Epidural analgesia	Although effective these techniques are relatively invasive with potential for complications
	Paravertebral blocks	Although effective these techniques are relatively invasive with potential for complications
Intra-operative	Psoas block	No procedure-specific evidence
	Wound infiltration with extended release bupivacaine	Limited procedure-specific evidence
	Wound infiltration using NSAIDs, clonidine, ketamine or opioids	Limited procedure-specific evidence
	Topical NSAIDs	Limited procedure-specific evidence
	IV lidocaine infusion	Limited procedure-specific evidence
	Topical extended-release local anaesthetic	Limited procedure-specific evidence
Postoperative	TENS	Lack of procedure-specific evidence
Surgical technique	Nerve section	Lack of procedure-specific evidence
	Cryoanalgesia	Lack of procedure-specific evidence

Overall PROSPECT recommendations

Overall recommendations for pain management in patients undergoing open inguinal hernia repair.

Recommendations for pain management in open inguinal hernia repair	
Pre-operative and intra-operative interventions	<ul style="list-style-type: none"> • Paracetamol (Grade D) • Non-steroidal anti-inflammatory drug (NSAID) or cyclo-oxygenase (COX)-2 selective inhibitor (Grade D) • IV dexamethasone (Grade B) • Local anaesthetic infiltration and/or regional analgesia (ilio-inguinal/ilio-hypogastric nerve block or transversus abdominis plane block) (Grade A)
Postoperative interventions	<ul style="list-style-type: none"> • Paracetamol (Grade D) • NSAID or COX-2 selective inhibitor (Grade D) • Opioid for rescue (Grade D)
Anaesthetic technique	<ul style="list-style-type: none"> • Field block (e.g. ilio-inguinal/ilio-hypogastric block) with or without wound infiltration as a sole anaesthetic or as an adjunct to general anaesthesia (Grade A)
Surgical technique	<ul style="list-style-type: none"> • Mesh techniques in preference to non-mesh techniques (Grade A)