TOTAL HIP ARTHROPLASTY

SUMMARY RECOMMENDATIONS

The recommendations of the PROSPECT Working Group are graded A–D, based on the level of evidence from the studies, which is in accordance with the Oxford Centre for Evidence-Based Medicine (CEBM website accessed Dec 2003, Sackett 2000). In the context of PROSPECT, recommendations based on procedure-specific evidence are grade A, those based on transferable evidence are grade B, those based on evidence from case series are grade C, and those based on clinical practice are grade D.

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.

In summary, the PROSPECT recommendations for pre-, intra- and postoperative interventions for the management of postoperative pain in total hip arthroplasty are as follows:

Pre-operative

- Analgesic medication should be initiated in time to ensure an adequate analgesic effect in the immediate postoperative period (grade D)

Intra-operative

- The anaesthetic technique should be selected on the basis of minimum impact on the co-morbid state of the patient (grade D). The chosen anaesthetic technique can be continued, or may have a continued effect, for analgesia postoperatively (see *Postoperative*)
- Analgesia, other than that required for adequate anaesthesia, is recommended only if the analgesic agent requires time to have maximum effect in the early postoperative recovery period (grade D)
- For long-term analgesic benefits, cemented prostheses rather than non-cemented prostheses are recommended (grade B)
- Surgical drains are not recommended because they are associated with an increase in discomfort (grade A), pain scores and risk of infection (grade B)

Postoperative

Systemic analgesia

The following are recommended:

- COX-2-selective inhibitors (grade A) or conventional NSAIDs (grade B) (depending on patient risk factors) – in combination with strong or weak opioids, as required for pain intensity
- Strong opioids (grade B) – in combination with non-opioid analgesia for high-intensity pain, preferably administered intravenously by patient-controlled analgesia (grade B) or fixed-interval injection (grade D)
- Weak opioids for moderate- or low-intensity pain (grade A) if conventional NSAIDs or COX-2-selective inhibitors are not sufficient or are contraindicated

- Paracetamol (grade A) – for all pain intensities in combination with conventional NSAIDs or COX-2-selective inhibitors (with or without weak opioids)

Regional analgesia

The following are recommended:

- Peripheral neural block continued after surgery (grade A) in combination with systemic analgesia as required for pain intensity (as above)
- Spinal LA and opioid as a 'single shot' given pre-operatively (grade A) (continuous infusion or repeat bolus spinal is not recommended, grade D), then systemic analgesia as required for pain intensity (as above)
- Epidural analgesia continued after surgery, only in patients at high cardiopulmonary risk, and then systemic analgesia as required for pain intensity (as above)

OVERALL PROSPECT RECOMMENDATIONS

The PROSPECT final recommendations are based on short-term pain outcomes (e.g. pain scores and supplementary analgesic use), following total hip arthroplasty. The recommendations do not take into account rehabilitation related to long-term pain. This is because rehabilitation programmes for patients undergoing total hip arthroplasty vary greatly between countries, and there is a lack of data for the effects of different rehabilitation regimes on long-term pain outcomes. Indeed, most studies assessing postoperative pain in total hip arthroplasty do not continue beyond 48 h following surgery. It is considered that adequate postoperative pain control is a prerequisite for successful rehabilitation because it allows early mobilisation and permits a more rapid initiation of physiotherapy.

The PROSPECT final recommendations are presented in the table below and are categorised according to the different anaesthetic techniques used for total hip arthroplasty. The PROSPECT group recommends that the choice of anaesthetic technique should be primarily based on the disposition of the patient rather than the management of their postoperative pain. However, based on postoperative pain outcomes, the continuation of some form of regional analgesia following general anaesthesia is recommended over the use of general anaesthesia alone.

Following surgery, the PROSPECT recommendations for pain management encompass a step-down approach for managing high-intensity pain in the immediate postoperative period to moderate- and low-intensity pain later in the postoperative period. For this step-down approach, PROSPECT recommends opioids (strong opioids initially, followed by weak opioids) in combination with paracetamol and conventional NSAIDs or COX-2-selective inhibitors, administered as appropriate for the level of postoperative pa

		GA alone	Peripheral neural block + GA	Spinal ± GA or IV sedation	Epidural ± GA
Pre-operative		Pre-operative analgesia is not recommended			
Intra-operative		Strong long-acting opioids to secure analgesia when the patient wakes	Femoral nerve block or posterior lumbar plexus block	Single shot spinal LA + morphine	Epidural LA + opioid Do not use clonidine
		Surgical drains and wound infiltration are not recommended			
Postop	**High-intensity pain***	Paracetamol + COX-2-selective inhibitors or conventional NSAIDs + IV strong opioid by PCA or regular injection	Continue nerve block (by continuous infusion or PCRA) + COX-2-selective inhibitors or conventional NSAIDs ± rescue strong opioids IV	Establish systemic pain management as the nerve block regresses, using COX-2-selective inhibitors or conventional NSAIDs ± rescue strong opioids IV	Establish epidural infusion as the nerve block regresses, ± PCEA, + COX-2-selective inhibitors or conventional NSAIDs ± rescue strong opioids IV
Postop	**Low- and moderate-intensity pain****	Paracetamol + COX-2-selective inhibitors or conventional NSAIDs ± rescue weak opioid			

*High-intensity pain, VAS ≥50, on a scale of 1–100 mm

**Moderate-intensity pain, VAS <50>30, on a scale of 1–100 mm

**Low-intensity pain, VAS ≤30, on a scale of 1–100 mm

IV, intravenous; LA, local anaesthetic; PCA, patient-controlled analgesia; PCEA, patient-controlled epidural analgesia; PCRA, patient-controlled regional analgesia