Development of an NSAID decision tool for perioperative pain management in adult orthopaedic patients: a modified Delphi study

Appendix 7

Western Cape Government FOR YOU

Groote Schuur Hospital

STANDARD OPERATING PROCEDURE

Safe prescription and administration of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

SOP Category:	Clinical Services	**Review Date:**	October 2028
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Target Group:	Nursing and medical staff	**Date:**	20/10/2023

Purpose	To provide guidance for the safe short term (≤7 days) perioperative non-steroidal anti-inflammatory drug administration in the adult orthopaedic patient population.
Background	• Orthopaedic surgery is rated among the most painful surgeries, leaving patients at high risk of experiencing significant postoperative pain. • Non-steroidal anti-inflammatory drugs (NSAIDs) are considered a key component in improving perioperative pain control for patients undergoing orthopaedic surgery. • Use of NSAIDs in perioperative pain management lower opioid requirements (eg. morphine/tramadol) leading to reduced opioid related side-effects (eg. postoperative nausea and vomiting, pruritus, drowsiness and constipation). • The attached NSAID decision-tool has been produced to support medical doctors in safe perioperative NSAID prescription for orthopaedic patients with a variety of comorbidities (eg. renal impairment, cardiovascular disease, liver impairment, upper GI bleeding risk etc). • The orthopaedic nursing staff can use the NSAID decision-tool to flag patients who might be candidates for short term perioperative NSAID treatment. • Nursing staff can also suggest discontinuation of NSAID treatment, if patients are at risk of adverse events according to the NSAID decision-tool.
Procedure	

1. For whom should NSAID treatment be considered?	• All adult patients undergoing orthopaedic procedures (≥18 years).
	• ASA 1 (ie. healthy, no comorbidities) patients may receive NSAIDs.
	• For orthopaedic patients with comorbidities, the NSAID decision-tool must be used to determine whether:
	  ○ NSAIDs can be safely administered.
	  ○ A proton pump inhibitor (PPI) should be added.

2. Treatment period	• ≤ 7 days starting either before, during or after surgery. • If NSAID treatment is started before surgery, the morning dose on the day of surgery should be withheld.
3. Type of NSAID	• Preferred NSAID: **Ibuprofen 400 mg orally, three times a day (TDS)** • Consider using parecoxib 40 mg intravenously or indomethacin 100 mg

	(suppository) per rectum if oral intake is not possible. IV parecoxib should only be considered if rectal indomethacin is contraindicated.
4. Dosing regimen	• **Ibuprofen 400 mg orally** should be boarded and administered at **10h00, 16h00 and 22h00.** If a patient is in pain and eligible for NSAIDs, nursing staff don't have to wait till the allocated time to start treatment. Once treatment has been initiated, the dosing schedule continue as per recommendation. • Parecoxib 40 mg intravenously should be boarded and administered 12-hourly. • Indomethacin 100 mg per rectum should be boarded and administered 12-hourly.
5. NSAID treatment before surgery	In order to achieve maximal analgesic effect, a full daily dose of NSAIDs must be boarded and administered. **<u>NSAID treatment before surgery:</u>** • Ibuprofen – 400 mg TDS orally i.e. 1200 mg/day • Parecoxib – 40 mg 12 hourly intravenously i.e. 80 mg/day • Indomethacin – 100 mg 12 hourly per rectum i.e. 200 mg/day
6. NSAID treatment on the day of surgery	**<u>NSAID treatment on the day of surgery:</u>** <u>Intraoperatively:</u> • Parecoxib 40 mg intravenously or indomethacin 100 mg per rectum. <u>Postoperatively:</u> • Oral administration of 400 mg ibuprofen at 22h00 if surgery finished before 18h00. • Alternatively, parecoxib 40 mg intravenously or indomethacin 100 mg (suppository) per rectum 10-12 hours after the intraoperative dose, if oral intake is not possible.
7. NSAID treatment from day one after surgery	In order to achieve maximal analgesic effect, a full daily dose of NSAIDs must be boarded and administered. **<u>NSAID treatment from day one after surgery;</u>** • Ibuprofen - 400 mg TDS orally i.e. 1200 mg/day • Parecoxib – 40 mg 12 hourly intravenously i.e. 80 mg/day • Indomethacin – 100 mg 12 hourly per rectum i.e. 200 mg/day
8. Responsibility of the medical staff	• Use the NSAID decision-tool to guide safe prescription of perioperative NSAID treatment. • If any doubt how to use the NSAID decision-tool, please consult a senior colleague up front. • Be aware of the patient categories where NSAID treatment is either not recommended or is contraindicated, as stated in the NSAID decision-tool. • On admission of elective cases, use the NSAID decision-tool to safely board standard analgesia including NSAIDs if no contraindications. • For urgent/emergency cases, evaluate the risk/benefit of NSAIDs on a case-by-case basis, using the NSAID decision-tool. • In urgent/emergency cases, be particularly aware of patients at risk of preoperative, intraoperative or postoperative hypovolaemia causing renal hypoperfusion (e.g. elderly dehydrated patients or patients with large fluid shifts

	due to blood loss). In these patients, NSAIDs are contraindicated. • In urgent/emergency cases, be particularly aware of patients who are spending prolonged periods (> 12 hours) nil per os (NPO) while receiving NSAIDs – in these patients consider adding a PPI. • The NSAID decision-tool is not exhaustive, thus patients might have comorbidities not described in the NSAID decision-tool. For these patients, please consult a senior colleague or call the clinical pharmacologist on call (Speed dial: 77294).
9. Responsibility of the nursing staff	• To ensure maximal analgesic efficacy, missed doses should be avoided. • In patients receiving ibuprofen, the dosing should ideally be: 400 mg TDS orally (10h00, 16h00 & 22h00). If ibuprofen is boarded at different time intervals, please ask the doctor to correct the dosing times in the prescription chart. • If a patient does not have ibuprofen/NSAID prescribed, please use the NSAID decision-tool to assess if the patient is eligible for a short course of NSAID treatment and advise the responsible medical doctor. • If a patient declines or is worried about receiving ibuprofen/NSAIDs, please involve the medical doctor to assess the treatment rather than omitting doses.

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