

Non-Opioid Medication Dictionary

Medication	Preoperative Dosing	Intraoperative Dosing	Postoperative Dosing	Discharge Dosing	Special Considerations	Evidence
Alpha-2 Adrenergic Agonists						
Dexmedetomidine	N/A	IV: 0.8-1 mcg/kg IV bolus + 0.2-0.8 mcg/kg/hr continuous infusion ¹ IT: 2-10 mcg ¹	IV: 0.2-0.8 mcg/kg/hr IV infusion for up to 24 hours ¹	N/A	Avoid in heart block and ventricular dysfunction, monitor for bradycardia. Does not provide adequate and reliable amnesia; therefore, use of additional agents with amnestic properties may be necessary. ¹	Improves pain control, and minimizes opioid-related side effects. May reduce sedative-hypnotic and/or opioid requirements of general anesthesia; may reduce postoperative opioid requirements. ²⁻³
Tizanidine	PO: 4 mg x1 ⁵⁻⁶ <i>Or continue home dosing i</i>	N/A	PO: 2 mg three times daily as needed, increasing to max of 8 mg three times daily as needed. ⁴ <i>Or continue home dosing</i>	PO: 2 mg three times daily as needed, increasing to max of 8 mg three times daily as needed. ⁴ <i>Or continue home dosing</i>	Caution with concomitant CNS depressants. Numerous drug interactions associated with tizanidine including oral contraceptives, famotidine, cimetidine, ciprofloxacin,	Found effective as adjunct in minor abdominal surgeries. ⁵⁻⁶

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					acyclovir, etc. ⁴	
Amide Anesthetics						
IV, infiltration, or SC: Local anesthetic systemic toxicity (LAST) is cautioned with any anesthetic use, and in particular when using multiple agents and routes. Consider checking lidocaine levels if IV infusion continued postop. Have lipid rescue kit readily available.						
Bupivacaine	N/A	Administered as epidural, infiltration or subcutaneous , not to exceed cumulative max dose 2.5 mg/kg ⁷ Intraperitoneal Instillation of Local Anesthetic (IPLA) : 2 mg/kg ⁷ Liposomal bupivacaine : Local infiltration using 133-266 mg ⁷	N/A	N/A	Liposomal : Cost considerations; consider volume expansion method. Greater potential than other local anesthetics for direct cardiac toxicity at supratherapeutic doses. ⁷	IPLA : Results in decreased pain, reduced opioid use, and shorter length of stay. ⁸ Liposomal : Literature supports consideration in breast, colorectal, and thoracic cases. However benefit may be limited in comparison to cost. ⁹
Lidocaine	N/A <i>Unless patient continuing home dose of topical lidocaine until surgery.</i>	Administered as epidural, infiltration or subcutaneous , not to exceed cumulative max dose 5 mg/kg ¹⁰	IV : 1-2mg/kg/hr infusion for 24-48 hours ¹⁰ Topical : 1-3 lidocaine 4-5% TD patches EMLA cream applied	Topical : 5% patch once daily applied adjacent to incision (up to 3 patches) ¹⁰	Topical : 4 or 5% patch applied to the site of injury or around incision sites. ¹⁰ Due to relatively low risk	IV : Found to improve pain scores, reduce opioid requirements, and decrease length of stay. ¹¹



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		IV: 1.5 mg/kg IV bolus (max dose 150 mg) +/- 1-3 mg/kg/hr IV infusion ¹⁰	topically with occlusive dressing Aerosolized topicals in wound site ¹⁰		associated with topical agents, ability to transfer to the outpatient setting, and availability of OTC products, these can be reasonable options to continue on discharge.	Topical: Evidence is limited and mixed, with several different products and strengths studied. ¹⁰
Ropivacaine	N/A	Administered as epidural, infiltration or subcutaneous, not to exceed cumulative max dose 3 mg/kg ¹² Regional nerve block or infiltration: 5-200 mg ¹² Lumbar or thoracic epidural: 12-28 mg/hr, consider initial dose and bolus doses of 20-40 mg ¹²	Peripheral nerve block: Continuous infusion dose: 5 to 10 mL/hour of 0.2% solution ¹² Lumbar or thoracic epidural: Continuous infusion dose: 6 to 14 mL/hour of 0.2% solution ¹² Infiltration/minor nerve block: -1 to 100 mL dose of 0.2% solution -1 to 40 mL dose of 0.5% solution ¹²	N/A	Ropivacaine exhibits a lower risk of cardiotoxicity and neurotoxicity than other agents in this class. ¹⁴ Ropivacaine has a quicker onset of action than bupivacaine, and a longer duration of action than both lidocaine and bupivacaine. ¹⁵	Ropivacaine is less lipophilic than bupivacaine and is less likely to penetrate large myelinated motor fibres, resulting in a relatively reduced motor blockade. Therefore, ropivacaine has a greater degree of motor sensory differentiation, which could be useful when motor blockade is undesirable. ¹³
Amine Reuptake Inhibitors						

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Duloxetine	PO: 60 mg x1 ¹⁶⁻¹⁷ <i>Or continue home dose</i>	N/A	PO: 60 mg x1, or continue at home dose ¹⁶⁻¹⁷	N/A- unless taking prior to surgery, then continue at home dose	Do not discontinue abruptly if patient already on duloxetine. ¹⁷	Evidence is most robust in orthopedic and spine surgeries. ¹⁶
Venlafaxine	PO: 75 mg daily x 2 weeks; start night before surgery ¹⁸⁻¹⁹ <i>Or continue home dose</i>	N/A	PO: 75 mg daily x 2 weeks; start night before surgery. ¹⁸⁻¹⁹	PO: 75 mg daily x 2 weeks, or continue at home dose if taken prior to surgery ¹⁸⁻¹⁹	Do not discontinue abruptly if patient already on venlafaxine. ¹⁹	Consider in patients undergoing mastectomy. ¹⁸⁻¹⁹
Antipyretics/ Analgesics						
Acetaminophen	PO: 1000 mg x1 ²⁰	IV: 1000 mg IV over 15 minutes ²⁰	PO/PR: 1000 mg every 6-8 hours until pain resolved ²⁰ IV: 1000 mg every 6-8 hours if PO/PR contraindicated ²⁰	PO: 1000 mg every 6-8 hours scheduled until pain resolved ²⁰	Recommend use of IV product only when cannot be administered PO or PR (due to cost). Caution in hepatic dysfunction and elderly. ²⁰	Significantly reduces postoperative opioid use and lowers pain. ²¹
Non-Selective NSAIDs						
<i>Non-Selective NSAIDs may be associated with anastomotic leakage, though evidence is inconclusive.²¹</i>						
Ibuprofen <i>Nonselective</i>	N/A	N/A	PO: 600 mg every 6 hours or 800 mg every 8 hours ²²	PO: 600 mg every 6 hours scheduled until pain relieved; or 800 mg every 8 hours until	Caution in renal dysfunction and elderly. Have a lower risk of cardiac	Significantly reduces opioid consumption and opioid-related side effects. ²³



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Medication	Preoperative Dosing	Intraoperative Dosing	Postoperative Dosing	Discharge Dosing	Special Considerations	Evidence
NSAIDs				pain relieved. ²²	complications but a higher risk of GI and bleeding side effects. However, effects on bleeding risk found to be clinically insignificant for most surgeries. ²²⁻²³	
Ketorolac Nonselective NSAIDs	N/A	IV: Ketorolac 15 mg x1 ²⁴	IV: 15 mg q 6 hours x 24-48 hours ²⁴	N/A	Caution in renal dysfunction and elderly. Have a lower risk of cardiac complications but a higher risk of GI and bleeding side effects. However, effects on bleeding risk found to be clinically insignificant for most surgeries. ²³⁻²⁴	Significantly reduces opioid consumption and opioid-related side effects. ²³
Naproxen Nonselective NSAIDs	N/A	N/A	PO: 500 mg every 12 hours ²⁵	PO: 500 mg every 12 hours scheduled until pain relieved ²⁵	Caution in renal dysfunction and elderly. Have a lower risk of cardiac complications but a higher risk of GI and bleeding side effects. However,	Significantly reduces opioid consumption and opioid-related side effects. ²³



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					effects on bleeding risk found to be clinically insignificant for most surgeries. ^{23,25}	
COX-2 NSAIDs						
Celecoxib <i>COX-2 NSAIDs</i>	PO: 200-400 mg x1 ²⁶	N/A	PO: 100-200 mg every 12 hours ²⁶	PO: 100-200 mg every 12 hours scheduled until pain relieved ²⁶	Caution in renal dysfunction and elderly. Have little to no effect on platelets, so have a lower risk of GI and bleeding side effects but a higher risk of cardiac side effects (MI, stroke). ^{23,26}	Significantly reduces pain, opioid consumption, and opioid-related side effects. ²³
Meloxicam <i>COX-2 NSAIDs</i>	PO: 7.5-15 mg x1 ²⁷	N/A	PO: 7.5-15 mg once daily ²⁷	PO: 7.5-15 mg once daily scheduled until pain relieved ²⁷	Caution in renal dysfunction and elderly. Have little to no effect on platelets, so have a lower risk of GI and bleeding side effects but a higher risk of cardiac side effects (MI, stroke). ^{23,27}	Significantly reduces pain, opioid consumption, and opioid-related side effects. ²³

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Beta Blockers						
Esmolol	N/A	IV: 0.5 mg/kg IV bolus, then 0.01-0.05 mg/kg/min continuous infusion ²⁸	N/A	N/A	Avoid use in heart failure, pulmonary HTN, heart block, bradycardia. Monitor BP and HR. ²⁸	Found to reduce intra- and post-operative opioid use. ²⁹
Gabapentinoids						
Gabapentin	PO: 300-600 mg x1 ³⁰	N/A	PO: 300-600 mg 1-3 times daily ³⁰	PO: consider prescribing 5-10 day course for patients who benefited while hospitalized	Renally adjusted, caution in elderly > 65 yo. Caution for concurrent use with opioids or other CNS depressants. ³⁰ Only continue postoperatively if benefit > risk. In older patients, perioperative gabapentinoids have been associated with increased risk of delirium, new antipsychotic use and pneumonia. ³²	May improve pain control and reduce opioid requirements in the peri- and post-operative periods. ³¹
Pregabalin	PO: 75-150 mg x1 ³³	N/A	PO: 75-150 mg 1-2 times daily (adjust for age, renal function) ³³	PO: consider prescribing 5-10 day course for patients who benefited while hospitalized		
Glucocorticoids						

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Dexamethasone	IV: Dexamethasone 0.1-0.2 mg/kg given slowly preoperatively or at induction ³⁴⁻³⁵	N/A	N/A	N/A	Due to abbreviated nature of therapy, relative contraindications are of less concern. Potential association with anastomotic leak. ³⁵	Found to reduce postoperative pain and opioid requirements. ³⁵
Methylprednisolone	IV: Methylprednisolone 125 mg IVP ³⁶⁻³⁷	N/A	N/A	N/A	Due to abbreviated nature of therapy, relative contraindications are of less concern. Potential association with anastomotic leak. ³⁶	Studied in video-assisted thoracoscopic surgery (VATS) lobectomy, and demonstrated significantly reduced pain at rest and after mobilization to a sitting position on the day of surgery, without later analgesic effects, ³⁷ although more recent studies suggest that the benefit is not clinically significant. ³⁸
Muscle Relaxants						
Cyclobenzaprine	N/A	N/A	PO: 5-10 mg TID ³⁹	PO: 5-10 mg TID ³⁹	All agents on the Beers Criteria. Not	Little evidence to support use of



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Medication	Preoperative Dosing	Intraoperative Dosing	Postoperative Dosing	Discharge Dosing	Special Considerations	Evidence
Metaxalone	N/A	N/A	PO: 800 mg TID ⁴⁰	PO: 800 mg TID ⁴⁰	to be used routinely, rather for patients with painful muscle spasm. Caution when combined with other sedating agents. ⁴²	muscle relaxants for analgesia in the perioperative period. However, patients may have painful muscle spasms associated with injury or after the surgery. ⁴³
Methocarbamol	N/A	N/A	PO: 750 mg TID ⁴¹	PO: 750 mg TID ⁴¹		
NMDA Receptor Antagonists						
Ketamine	N/A	IV: 0.1-0.3 mg/kg IV bolus once pre-incision +/- 0.1-0.3 mg/kg/hr infusion. ⁴⁴ *Higher doses may be used for sedation.	IV: 0.1-0.3 mg/kg IV bolus +/- 0.1-0.3 mg/kg/hr IV infusion for 24-48 hours ⁴⁴	N/A	Avoid in patients with significant CV issues, monitor vital signs and for psychomimetic effects. ⁴⁴ May be used at lower analgesic doses in the postoperative period; not readily available in outpatient setting, so must be discontinued prior to discharge.	Associated with lower intra- and post-operative opioid requirements, reduced pain intensity, across multiple surgical types. May have particular benefits in those that are opioid-tolerant. ⁴⁵
Magnesium	N/A	IV: 30-50 mg/kg IV bolus plus 6-20 mg/kr/hr IV infusion	N/A	N/A	Avoid in heart block, monitor BP at higher or bolus doses.	Associated with reduced opioid requirements and



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		until end of surgery OR 4 g IV over 30-60 min at close of case ⁴⁶			Relatively large therapeutic index, no need to monitor levels if stopped after surgery. ⁴⁶	lower postoperative pain scores. ⁴⁷
Other Agents						
Ascorbic acid	IV: 50 mg/kg or 2 g x1 preop ⁴⁸⁻⁴⁹	IV: 3 g x1 intraoperatively ⁴⁸⁻⁴⁹	PO: 500 mg daily for 50 days ⁴⁸⁻⁴⁹	PO: 500 mg daily for 50 days ⁴⁸⁻⁴⁹	Ascorbic acid is generally safe, and its potential benefits could outweigh any potential risks. ⁴⁸	Studies of laparoscopic colectomy and cholecystectomy demonstrate opioid-sparing abilities with significantly improved morphine consumption, VAS pain score, and functional recovery after single 2 gram intravenous preoperative dose. A single intraoperative dose of 3 g IV was shown to postoperative pain without side effects. In orthopedic surgery, 500 mg



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Medication	Preoperative Dosing	Intraoperative Dosing	Postoperative Dosing	Discharge Dosing	Special Considerations	Evidence
						orally daily for 50 days was shown to prevent complex regional pain syndrome. ⁴⁹
Capsaicin topical	Topical Topical cream and 8% transdermal patch ^{50,51}					Effective for the management of postsurgical neuropathic pain. ^{50,51}
Droperidol	IV: 0.625-1.25 mg ⁵²⁻⁵³			N/A	Avoid in QT prolongation, arrhythmias, and history of torsades de pointes. ⁵²	Studies have found reduction in PONV and potential decrease in opioid consumption in patients undergoing shoulder arthroplasty. ⁵³
Haloperidol	PO/IM/IV: 2-5 mg ⁵⁴ <i>Or continue home dose</i>			N/A <i>Or continue home dose</i>	Avoid in QT prolongation and elderly. ⁵⁴	Although controversial, studies have found reduction in PONV and potential decrease in postoperative pain and opioid consumption. ⁵⁵
Suzetrigine	PO: Dose 1 (initial dose): 100 mg x1 PO Dose 2 to 4: 50 mg PO every 12 hrs				Indicated for treatment of moderate-to-severe	Phase 3 trials of acute pain with 2 RCTs

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	Dose 5 and beyond: 50 mg PO every 24 hrs ⁵⁶				acute pain in adults. CI with concomitant strong CYP3A inhibitors. Caution in hepatic impairment. Current evidence is limited. ⁵⁷	(abdominoplasty and bunionectomy) compared to hydrocodone/APAP 5/325 mg, found to have comparable reduction in pain. ⁵⁷

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