

Pharmacology Cheat Sheet for the ABA and ABPM Pain Boards

Meds	Ratio PO to IV	Conversion to PO to IV	Onset	Duration	Conversion Epidural to Intrathecal	
Hydromorphone	5:1	7.5mg PO to 1.5mg IV	15-30 min PO, 15 min IV	3-6 hours	1:5	
Morphine	3:1	30mg PO to 10mg IV	30-60 min PO, 5-10 min IV	3-6 hours	1:10	
Codeine	2:1	200mg PO to 100mg IV	30-60 min PO, 10-30 min IV	4-6 hours		
Meperidine	3:1	300mg PO to 100mg	10-15 min PO, 1-5 min	3-4 hours		
Oxymorphone	10:1	10mg PO to 1mg IV	5-10 min PO,	4-6 hours		
Fentanyl			5 min IV	30-60 min IV	1:3	
NSAIDS	Unique Feature	Days to stop Prior to Procedure	Opioid Receptor	Effects	Location	
Ibuprofen	Less GI sx (Indomethacin high risk)	1	Delta	Analgesia, physical dependence, convulsant, anti-depressant.	Brain, Peripheral Sensory Neurons	
Naprosyn	Intermediate risk of GI sx	4	Kappa	Analgesia, anticonvulsant, depressant, hallucination, stress, diuresis, neuro-protective.	Brain, Peripheral Sensory Neurons, Spinal cord (Sub Gelatinosa)	
Meloxicam	Less thromboembolic when compare with diclofenac.	4	Opiate (NOC, OP4)	ORL1-anxiety, depression, appetite, tolerance to mul opiates	Brain, Spinal cord	
Nabumetone	Less GI symptoms and platelet inhibition	6	Mu Subtypes:	-Analgesia, physical dependence -Respiratory depression, miosis, euphoria. Phys. Dep., reduced GI motility. -Vasodilation	Peripheral Sensory Brain, Neurons, GI tract.	
Diclofenac	Better tolerated than most other NSAIDs	1				
Local Anesthetic	Mechanism/Unique Feature	Side Effects	Interactions	Special Considerations	Reflex	Nerve Root
Lidocaine	Alters signal conduction in neurons by blocking the fast voltage-gated Na ⁺ channel in the neuronal cell membrane responsible for signal propagation	CNS excitement at lower doses and CNS depression at higher doses. dyspnea, respiratory depression or arrest, metallic taste, nausea, vomiting.	Hypotension, bradycardia, arrhythmias, hypersensitivity to corn and corn-related products. Concurrent treatment with class I antiarrhythmic agents, are contraindicated.	Heart block 2 nd and 3 rd degree and severe sinoatrial block (without pacemaker). Adams-Stokes syndrome and Wolff-Parkinson-White Syndrome.	Biceps	C5, C6
					Brachioradialis	C6
					Triceps	C7
					Patellar	L4
					Archilles Tendon	S1
Bupivacaine	Alters signal conduction in neurons by blocking the fast voltage-gated Na ⁺ channel in the neuronal cell membrane responsible for signal propagation.	Circumoral numbness, facial tingling, vertigo, tinnitus, restlessness, anxiety, dizziness, seizure, coma, hypotension, arrhythmias, bradycardia, heart block, cardiac arrest.	Markedly cardiotoxic contraindicated in obstetrical paracervical blocks and intravenous regional anesthesia.	Pregnancy category C drug.		
Ropivacaine	S(-) enantiomer; same as above	Same as above Less cardiotoxic and less motor block than Bupivacaine	Extensive hepatic metabolism after IV administration	Acidosis, hyperkalemia or hypoxia in patients may increase the likelihood and severity of toxic reactions.	Slightly less potent than Bupivacaine, and slightly shorter duration than Bupivacaine	
Mepivacaine	Amide with rapid onset and medium duration of action	Same as other local anesthetics.	Potential for cardiac toxicity.	More rapid onset than Procaine.	Lasts longer than Lidocaine	
Chloroprocaine	Ester with the shortest duration of action	Less toxic than Lidocaine	Reports of neurologic deficit after intrathecal injections- related to sodium bisulfite preservative?	Not FDA approved for intrathecal use		

Misc Meds		Mechanism	Side Effects	Interactions
Tramadol		Mu opioid receptor binding; inhibit reuptake of norepinephrine and serotonin	Constipation, Nausea, Vomiting.	Decrease dose in hepatic and renal dysfunction. Concomitant use of SSRI, SSNRI, TCAs. Seizure disorders.
Tapentadol -Unlike Tramadol, it is a more potent opioid and has no active metabolites		Centrally acting opioid analgesic, agonist at mu receptor and norepinephrine reuptake inhibitor.	Nausea, dizziness, constipation, CNS sedation, possible increase of seizure risk.	Serotonin syndrome with SRAs, SSRIs/SNRIs, Serot. rec. agonists, and/or MAOIs (adrenal storm)
Neuropathic Meds		Mechanism	Side Effects	Interactions
Gabapentin		Binds to Alpha 2 Delta subunit.	Ataxia, Dizziness, Fatigue, Peripheral edema, Weight Gain	No significant drug interactions, helps with sleep
Carbamazepine		Stabilizes the inactivated state of voltage-gated sodium channels, and is an alpha1 beta2 and gamma2 subunit GABA antagonist	Drowsiness, Dizziness, Headaches, Migraines, Motor coordination impairment, nausea and vomiting, constipation	CYP450 inducer, may increase clearance of many drugs, decreasing their concentration in the blood to sub-therapeutic levels and reducing their desired effects
Lyrica		Ca ²⁺ channel blocker	Blurred vision, dizziness, euphoria, fatigue, peripheral edema, somnolence, weight gain	Angioedema with concomitant use of ACEI. Risk of weight gain and peripheral edema with thiazolidinediones.
Ketamine		Blockade of NMDA and HCNI receptors, but cholinergic, aminergic, and opioid systems appear to play both a positive and negative modulatory role in both sedation and analgesia.	Nausea, vomiting, loss of appetite, low blood pressure, double vision, tachycardia, hallucinations, confusion Increased intraocular pressure, nystagmus, Increased ICP	Prolonged recovery time when combined with opiates
Muscle Relaxants		Mechanism	Side Effects	Interactions
Cyclobenzaprine		Does not act at the neuro-muscle junction or directly on skeletal muscle.; acts primarily within the central nervous system at brainstem influencing both γ and(α) motor systems	Drowsiness, dizziness, dry mouth, antagonist at histamine, serotonin and muscarinic receptors.	Major contraindications with (MAOIs). Possible increased risk of serotonin syndrome with duloxetine.
Tizanidine		Central acting alpha-2 adrenergic agonist.	Asthenia, HA, GI sx, dry mouth, somnolence, hallucinations.	Delayed metabolism with amiodarone, cimetidine, acyclovir, fluvoxamine and cipro
Baclofen		GABA (B) receptor agonist presynaptic at Dorsal Horn, BS & CNS sites- suppress release of neurotransmitters.	Somnolence, dizziness, confusion, ataxia. Withdrawal syndrome may develop- halluc, confusion, seizures, rigidity, tachycardia	Does not cross BBB. (Blood Brain Barrier), blocks the alpha 2 delta subunit containing voltage gated Ca channels
Methocarbamol		Primary CNS depressant.	Drowsiness, mental confusion, hypotension, impaired motor functions, coma.	
Valium -Positive modulator of the GABA Type A receptor		Positive modulators of the GABA Type A receptor; enhances presynaptic inhibition in spinal cords, opens chloride channel hyper polarizing Ia afferent terminals.	Drowsiness, mental confusion, hypotension, impaired motor functions, coma.	Any medications that potentiate the effects of diazepam (ie Barbiturates, phenothiazines, opioids, and antidepressants.)
Anti-Depressant	Mechanism	Side Effects	Interactions	Other Info.
Duloxetine	SNRI	Nausea, Insomnia, Hypersomnia, dizziness, weakness, drowsiness, sedation, fatigue, diarrhea, constipation, headache and xerostomia.	C/I- MAOIs, Uncontrolled narrow angle glaucoma, thioridazine	Discontinuation syndrome- dysphoria, agitation, sensory disturbances, hypomania, insomnia, tinnitus and seizures
Amitriptyline	Tricyclic Anti-Depressant	Blurred Vision, constipation dry mouth, sedation, sexual dysfunction, urinary retention, weight gain.	Arrhythmias, concomitant use of tramadol, SSRI, SSNRI.Glaucoma, seizure disorder, suicidal risk.	Get baseline EKG in patients with history of cardiac disease. Start elderly patient on lower doses. Amitriptyline highly anticholinergic
Nortriptyline	Tricyclic Anti-Depressant.	Blurred Vision, constipation dry mouth, sedation, sexual dysfunction, urinary retention, weight gain.	Arrhythmias, concomitant use of tramadol, SSRI, SSNRI. Glaucoma, seizure disorder, suicidal risk.	Less anticholinergic side effects



