Prepared by:
Pain Management Unit

Dept. of Anesthesia
KKUH. KSU

Pain

Pocket Guide

Pain is the 5th Vital Sign

. Assess & document pain in all patients.
. Use the standardized pain assessment scale, which is appropriate for age and congnition.
. Manage pain & evaluate response to analgesia periodically.
. Avoid placebo & IM. Pethidine.

Standardized Pain Assessment Scales

Numerical Pain Rating Scale

For Adults & Childrean Above 7 Years

Pain Unit

المقياس الرقمي لتحديد شدة الألم

للبالغين وللأطفال فوق سن 7 سنوات

7-10=Severe Pain

4-6=Moderate Pain

1-3=Mild Pain

Choose the Number or Face that Describes Your Pain Level

أختر الرقم أو الوجه الذي يمثل شدة الألم الذي تشعر به

10	8	6	4	2	0
ألم شديد جداً Very Severe Pain	ألم شديد Severe Pain	ألم متوسط Moderate Pain	ألم بسيط - ألم متوسط Mild - Moderate Pain	عدم إرتياح - ألم بسيط Mild Pain	لا يوجد ألم Comfortable/No Pain

Modified Wong Baker Faces Scale

For Children Above 3 Years, & Adults

المقياس الوجهي لتحديد شدة الألم

للأطفال فوق سن 3 سنوات وللبالغين

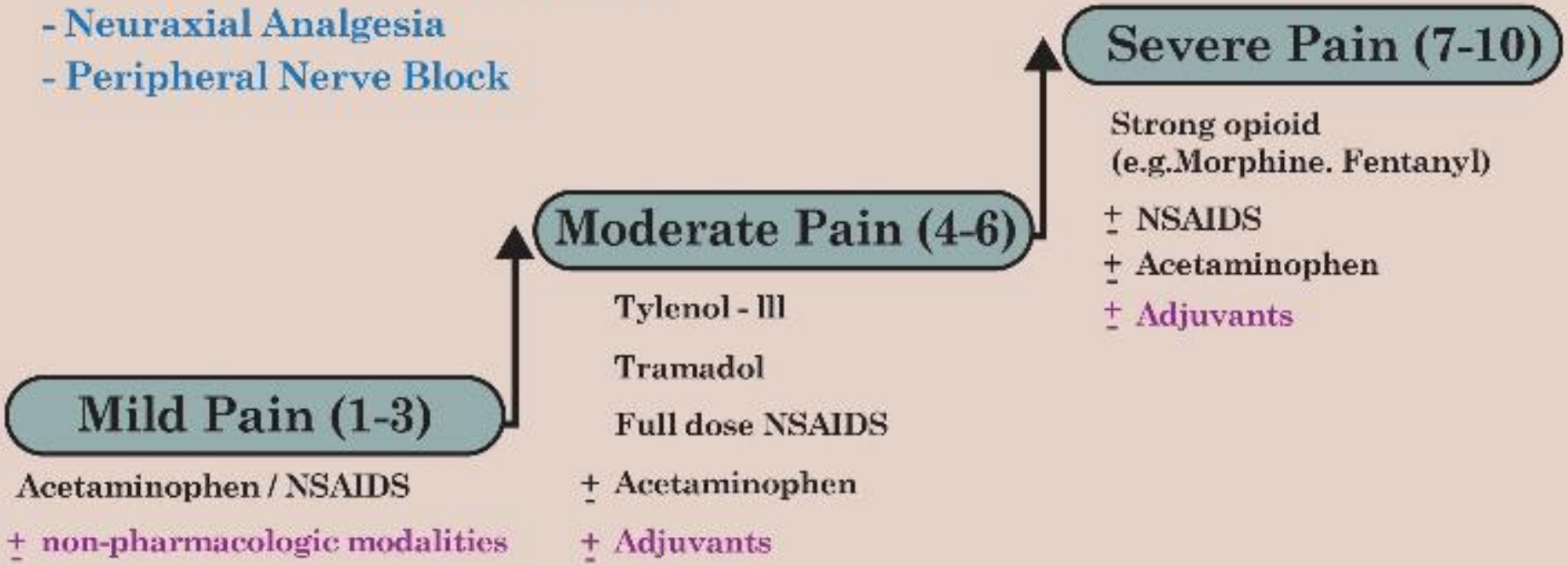
FLACC Scale for Pain Assessment in Children 2 months–7 years

Categories	0	1	2
FACE	NO particular expression or smile	Occasional grimace or Frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
LEGS	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
ACTIVITY	Lying quietly, normal position, moves easily	Squirming, shifting back & forth, tense	Arched, rigid, or jerking
CRY	No cry (awake or sleep)	Moans or whimpers, occasional complaints	Cries steadily, screams or sobs, frequent complaints
CONSOLABILITY	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractible	Difficulty to console or comfort

Analgesic Ladder

Acute pain management modalities provided by the APS:

- Patient Controlled Analgesia IV
- Neuraxial Analgesia
- Peripheral Nerve Block



Based on the WHO Analgesic Ladder

PAIN MANAGEMENT: NSAIDS

Drug/Class	Preparations	Doses	Comments
1) Acetaminophen **(Paracetamol)**	• **Tablet:** 500 mg • **Elixir:** 120mg/5mL • **Drops:** 100 mg/mL • **Injection:** vial 1 g/100mL • **Suppository:** 100 mg, 125 mg, 200 mg, 250mg, 350 mg, 500 mg	• Adult: 1g,q 4-6 hr • Pediatric: 10 -15 mg/kg/dose q 4-6 hr	• IV Acetaminophen used postoperatively reduces opioid consumption. • **Caution**:may cause severe hepatic toxicity in acute overdose; monitor LFTs with chronic use & with alcohol use. Use with caution in patients with known G6PD deficiency.
2) NSAIDs: • Ibuprofen **(Brufen)**	• **Tablet:** 200mg,400mg **Syrup:** 100 mg/5mL	• Adult: 400-600 mg, q8 hr Pediatric:5-10 mg/kg, q8 hr	• Used alone for mild-to-moderate pain, & as adjunct to opioids in severe pain. • Avoid in patients with Asthma. • Avoid concurrent use of Aspirin with other NSAIDs (increases the risk of bleeding). • Before initiating treatment: weigh the potential benefits & risks, consider other treatment options; & use the lowest effective dose for the shortest possible duration. • If the pediatric dose is not specified in the table, then the analgesic is not applicable!
• Diclofenac **(Voltaren)**	• **Tablet:** 25 mg, 50 mg **Tablet (Retard):** 100 mg **Suppository:** 50 mg **Topical gel:** 1% **Eye drops:** 0.1%	• Adult: 25-50mg, q 8 hr	
• Indomethacin **(Indocin)**	• **Capsule:** 25 mg **Injection:** vial 50 mg/2mL **Suppository:** 100 mg	• Adult: 25-50mg, PO, q8hr Supp.:100mg, OD	
• Ketoprofen **(Orudis)**	• **Injection:** vial 100 mg/2 mL	• Adult: 50-75-100mg IM, q8hr, PRN	
Selective COX2 Inhibitors: • Celecoxib **(Celebrex)**	• **Capsule:** 200 mg	• 200-400 mg, once daily	• Selective COX-2 inhibitors have less GI side effect but similar renal toxicity. • Used for moderate pain, & as adjunct to opioids in severe pain. • Celecoxib has equal efficacy & similar renal toxicity to other NSAIDs, less GI ulcer/bleed. Should be used with caution in patients with hypertension and cardiac diseases.
• Meloxicam **(Mobic)**	• **Tablet:** 7.5 mg, 15 mg	• 7.5 -15 mg, q 12 hr	

PAIN MANAGEMENT: OPIOIDS & WEAK OPIOID COMBINATIONS

Drug/Class	Preparations	Doses	Comments
Acetaminophen + Codiene **(Tylenol III)**	• **Tablet:** Acetaminophen 500 mg – Codeine 30mg	• Adult: 1-2 tab. q 4-6hr Children: (20 kg & above) 1 tab. 4-6 hr	• Do not exceed the maximum recommended daily dose of acetaminophen (4 grams/day). • Higher than recommended doses over long periods of time may cause drug dependence. • Constipation should be managed appropriately. • May be used in moderate pain alone or in combination with NSAIDs. Low doses of strong opioids often more effective & better tolerated.
Acetaminophen + Dextrpropoxyphene **(Distalgesic)**	• **Tablet:** Acetaminophen 325 mg – Dextropropoxyphene 32.5mg	• Adult: 1-2 tab. q 4-6hr Children: (20 kg & above) 1 tab. q 4-6 hr	
Tramadol **(Tramal)**	• **Capsule:** 50 mg • **Tablet SR:** 100 mg • **Injection:** vial 100 mg/2mL	• 50-100 mg, q 8hr • 100 mg, q12hr • 50-100 mg, q8 IV/IM	• A Centrally-acting analgesic with mutual mechanism of action (weak opioid & serotonin reuptake inhibitor). • May cause nausea/vomiting & dizziness.
Strong Opioids: • **Morphine**	• **Tablet:** 10 mg **Tablet SR:** 30mg,60mg **Syrup:** 10 mg/5 mL **Injection:** 1 mg, 10 mg	• Tab.: 10 mg, q 4-6 hr Tab. SR:15 mg, q12 hr	• Pain physician/APS should be consulted for severe pain, to select the most appropriate opioid & pain management protocol. • Adjust doses in renal impairment. • Tolerance develops to all side effects within days, except for constipation. • **Oxycodone:** use with caution; potential fatal interaction with alcohol or medications containing alcohol. • **Methadone:** is difficult to titrate due to its half-life variability. It may take a long time to reach a stable level in the body. Methadone dose should not be increased more frequently than every 7 days. Do not use as PRN or combine with other long-acting opioids.
• **Hydromorphone**	• **Injection:** 10 mg/mL	• 2 mg, q 4-6 hr	
• **Oxycodone**	• **Capsule:** 5 mg	• 5 mg, q 6-8 hr	
• **Meperidine** (Pethidine)	• **Injection:** 50mg/mL	• 1-1.5 mg/kg, IM q 4-6 hr, PRN	
• **Fentanyl**	• **Injection:** 100 mcg/2mL & 500 mcg/10mL **Dermal patch:** 25 mcg, 50 mcg, 75 mcg	• 2-5 mcg/kg, IV PRN Dermal patch/ 72 hr	
• **Methadone**	• **Tablet:** 5 mg, 10 mg	• 5 mg, q 8-12 hr	

MANAGEMENT OF OPIOID SIDE EFFECTS

SIDE EFFECT	TREATMENT	ADULT DOSE	PEDIATRIC DOSE
Nausea/Vomiting	• Metclopramide (plasil) • Diphenhydramine (Benadryl) • Granisetron	• 10 mg PO/IV, q6 hr PRN • 0.25-0.5 mg/kg PO/IV • 1 mg IV daily, PRN (in severe form)	• 0.25 mg/kg,PO/IV, q 6 hr, PRN • Consider Benadryl 0.25-0.5 mg/kg PO/IV • Not used in children under 18 yrs • In chemotherapy: 2 yrs and above: 10-40 mcg/kg/dose/ 30 min
Pruritus	• Diphenhydramine • Propofol • Naloxone	• 25-50 mg PO/IV, q 6hr, PRN • 20-50 mg IV stat	• 0.25 - 0.5 mg/kg IV, q 6h,PRN • 12.5 - 25 mg,PO, q 8h,PRN
Sedation/Respiratory depression	• Naloxone	• 1-5 mcg/kg bolus, (can be repeated)	• 5-10 mcg/kg bolus, (can be repeated)
Constipation	• Glycerin suppository • Docusate Sodium • Lactulose syrup (Dulcolax)	• 1-2 suppository BD PRN • 100-200 mg, PO, BD • 15-30 mL, PO, q 8h	• 900/1500 mg suppository, OD, PRN • 20-60 mg/day in 2-4 divided doses • 5-10 mL, PO, OD

PATIENT CONTROLLED ANALGESIA (PCA-IV)-(APS)

DRUG	MORPHINE	FENTANYL	HYDROMORPHONE
Concentration	1 mg/mL	10 mcg/mL	0.2 mg /mL
Bolus	0.05 mg/kg	0.5 mcg/kg	0.4-0.5 mg
PCA dose	0.02 mg/kg	0.2 mcg/kg	0.1-0.3 mg
Basal Rate	0-2 mg/hr	0-10 mcg/hr	0-0.2 mg/hr
Lock out/delay (minutes)	5-10	5-10	5-10
Loading Dose	2 - 2.5 mg	10-20 mcg	0.2 - 0.4 mg

Consider decreasing the dose by 20% in elderly patients, severely ill patients, & in patients with sleep apnea.

EPIDURAL ANALGESIA (EA), APS

DRUG	PREPARATIONS	COMMENTS
Bupivacaine	- 0.0625 % - 0.1 %	• May cause motor blockade • May cause hypotension • Patients may need to be catheterized as they will not feel bladder fullness
Bupivacaine +Fentanyl	0.0625 % or 0.1% 2 mcg/mL	• May cause respiratory depression.
Ropivacaine	0.2%	• Similar to Bupivacaine, but more sensory selectivity & less cardiac & neurotoxicity

- Assessment for sensory block: use 'ice in glove technique'.
- Assessment for motor block: use Bromage scale.

PAIN AMANGEMENT: ADJUVANT ANALGESICS

Drug	Preparations	Doses	Comments
1) Antidepressants: • **Amitriptyline** (Elavil, Tryptizol) • **Imipramine** (Tofranil)	• **Tablet:** 10mg, 20mg, 50mg **Capsule** SR: 25mg • **Tablet:** 10 mg, 25 mg	• 10-25 mg at night 50-150 mg at night • 110-25 mg at night 50-150 mg at night	• Should be administered at night to reduce daytime sedation & support good sleep. • Associated with significant tolerability issues • Used as analgesics for chronic/neuropathic pain, & as prophylaxis against migraine headaches.
2) Anticonvulsants: • **Na Valproate** (Depakene) • **Gabapentin** (Neurontin) • **Pregabalin** (Lyrica)	• **Tablet:** 200 mg **Tablet** SR: 500 mg **Syrup & Drops** • **Capsule:** 300mg, 400mg • 75-150 mg, BD	• 20 mg/kg IV, over 5 minutes • 300-400mg, OD, 1st week, 300-400mg BD, 2nd week, 300-400mg, TDS, 3d week	• Anti-convulsants are used in acute/chronic neuropathic & migraine pain. • Check LFT before & after starting Valporate. • Gabapentin can be used in PHN • Pregabalin is approved for fibromyalgia &painful diabetic neuropathy. • Adjust doses in renal impairment.
3) Corticosteroids: • **Dexamethasone** (Decadron) • **Prednisone**	• **Tablet:** 0.5 /1.5 /2 /4 mg **Elixir:** 0.5 mg/5 ml. **Injection:** 8 mg/2mL • **Tablet:** 10 /20 / 50 mg	• Low –doseregimen: 1-2 mg once-twice/day • High –dose regimen: 100 mg 4 times/day	• Corticosteroids can be used in short-term to relief acute pain associated with inflammation. • Shown to reduce spontaneous discharge in injured nerves. • Can be used for bone pain. • If used more than 1week, avoid rapid withdrawal (risk of adrenocortical insufficiency).
4) Muscle relaxants: • **Baclofen** (Lioresal)	• **Tablet:** 10 mg, 25 mg	• 10-25 mg, q 8 hr	• Relieve muscle spasm in acute/ cancer pain. • Can be used in neurogenic pain & in rectal tenesmus.
5) Bisposphanates: • **Alendronate** (Fosamax)	• **Tablet:** 70 mg	• 70 mg, once/ week	• Used for metastatic bone pain. May cause esophagitis, should be taken in the morning with a glass of plain water at least one-half hour before food, beverages, or other medications.

Acute Pain Service (APS)

APS Resident:	pager # 2113	(weekdays 07:30 - 16:30 hours)
APS Nurse:	pager # 2789	(weekdays 07:30 - 16:30 hours) (thursdays 09:00 - 13:00 hours)
Anesthesia Resident on for Maternity:	pager # 3540	(daily 16:30 - 07:30 hours, & weekends 24 hours, or in the absence of APS Anesthesiologist)