ANALGESIC DOSING GUIDE

OPIOIDS

Usual starting doses in infants less than 6 months of age is 1/4 to 1/3 the starting dose listed in this table

- **For all opioids, use caution in patient with impaired ventilation, bronchial asthma, increased intracranial pressure or liver failure.**
- **When switching from one drug to another for patients on opioid doses above initial starting doses, use equipotent dose conversion and reduce new dose by 50% to adjust for incomplete cross-tolerance in opioid tolerant patients (patient on opioids for more than 5 consecutive days).**

Drug	Equipotent Dose	Body Weight	Usual IV/SC Starting Dose (opiate naïve patient)	Usual Oral Starting Dose (opiate naïve patient)	Comments
Morphine	1 mg IV (3 mg PO)	< 50 kg	0.05-0.1 mg/kg IV q1-2 hours	0.3 mg/kg PO q3h	Caution in renal insufficiency.
			0.03mg/kg/hour IV by continuous infusion.		
		> 50 kg	5 mg q1-2 hours	15-30mg PO q3h	
Hydromorphone (Dilaudid)	0.15 mg IV (0.75 mg PO)	< 50 kg	0.015 mg/kg IV q2-3h	0.06 mg/kg PO q3h	Safe in renal insufficiency.
		> 50 kg	0.75 mg IV q2-3h	4-8 mg PO q3h	
Oxycodone	IV not available (2 mg PO)	< 50 kg		0.1-0.2 mg/kg PO q3h	Safe in renal insufficiency.
		> 50 kg		5-10 mg PO q3h	
Hydrocodone	IV not available (3 mg PO)	< 50 kg		0.1-0.2 mg/kg PO q3h	Always in combination with acetaminophen. Safe in renal insufficiency.
		> 50 kg		5-10 mg PO q3h	
Fentanyl	10 mcg (no PO form)	< 50 kg	0.5-1 mcg/kg IV q1 hour		Safe in renal insufficiency.
			0.5-1 mcg/kg/hour by continuous infusion		
		> 50 kg	50 mcg IV IV q1 hour		
Methadone	1 mg IV (1 mg PO *)	< 50 kg	0.1 mg/kg IV q4 hours	0.1-0.2mg/kg PO q4 hours	Safe in renal insufficiency. Accumulation with repeat dosing allowing for increasing dosing interval over time.
		> 50 kg	2.5-5 mg IV q4 hours	5-10mg PO q4 hours	
Tramadol (Ultram)	IV not available (10 mg)	< 50 kg		1-2 mg/kg PO q4 hours	Caution in renal insufficiency. Lowers seizure threshold. Max single dose 100mg; Max daily dose of lesser of 8mg/kg or 400mg.
		> 50 kg		50-100 mg PO q4 hours	

*** Methadone ratio set by Pain Steering Committee. This drug's unique pharmacokinetics results in great variability in potency; but this ratio should be appropriate to prevent withdrawal during opioid tapers.**

NON-OPIOID ANALGESICS

Drug	Dose < 50 kg	Maximum Dose > 50 kg	Comments
Acetaminophen (Tylenol)	10-15 mg/kg PO / PR / IV q4-6 hours	650 mg per dose q4 hours; 1 gram IV every 6 hours	Max daily dose: 75 mg/kg/day or 4 grams whichever is less.
Ibuprofen (Motrin, Advil)	5-10 mg/kg PO q 6 hours	400 – 600 mg per dose q4 – 6 hours	Max daily dose: 2400 mg
Naproxen (Naprosyn, Alleve)	5-7 mg/kg PO q8-12 hours	500 mg initially; then 275 mg PO q6-8 hours	Max daily dose: 1000 mg. Longer onset than ibuprofen.
Ketorolac (Toradol)	0.5 mg IV q 6 hours (Maximum 30mg/dose)	15-30 mg per dose IV q6 hours	Not recommended for treatment longer than 5 days every 30 days. Monitor Renal Function; Consider lower dose if on medication that can affect renal function.
Choline Magnesium Trisalicylate (Trilisate)	25 mg/kg PO bid	1000mg per dose	Minimal platelet effect
Celecoxib (Celebrex)	≥ 10 kg - ≤ 25 kg – 50 mg PO bid > 25 kg – 100 mg PO bid	200 mg PO bid	Caution in patients allergic to sulfonamides or other NSAIDS. Concerns for increase risk of cardiovascular and cerebrovascular thrombotic events in adults.

REVERSAL AGENTS

Opioid Reversal Agent	Dose	Max Single Dose
Naloxone (Narcan)	1-5 mcg/kg IV / IM / SC/ IN per dose; repeat every 2-3 minutes based on response.	0.4 mg
Alternate administration method (see suggested preparation below.)	Dose: 10 mcg/kg up to 400 mcg; Administer IV at 0.5-2 mcg/kg every 2 minutes until desired effect is achieved.	
for patients < 40 kg	mix naloxone 0.1 mg (0.25ml) with normal saline 9.75 ml to create naloxone concentration 10 mcg/ml.	
for patients ≥ 40 kg	mix naloxone 0.4 mg (1ml) with normal saline 9 ml to create naloxone concentration 40 mcg/ml	

Above naloxone dosing is for when total reversal is NOT required – for patients with respiratory depression associated with therapeutic narcotic use.
Repeat dosing of naloxone may be required because half-life of naloxone is often shorter than half-life of opioids being reversed.