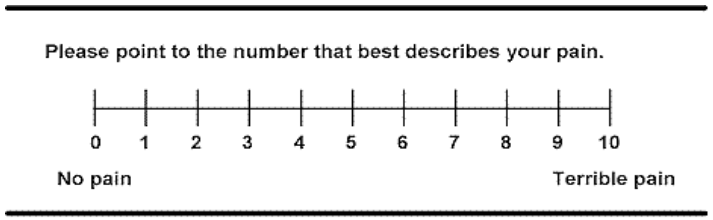
Principles of Pain Management/ Conversion Rules

1) Ask the patient about the presence of pain
2) Perform a comprehensive pain assessment, including: Onset, duration, location; Intensity; Quality; Aggravating/Alleviating factors; Effect on function, QOL; Patients goal; Response to prior treatment; H & P.
3) Avoid IM route, if possible
4) Treat persistent pain with scheduled medications
5) Ordinarily 2 drugs of the same class (e.g. NSAIDS) should not be given concurrently; however 1 long-acting and 1 short-acting opioid may be prescribed concomitantly.
6) Short-acting strong opiates (morphine, hydromorphone, oxycodone) should be used to treat moderate to severe pain. Long-acting strong opiates (e.g. Oxycontin, MS Contin, Fentanyl patch) should be started once pain is controlled on short-acting preparations. Never start an opioid naïve patient on long-acting medications.
7) Titrate the opiate dose upward if pain is worsening or inadequately controlled: Increase dose by 25- 50% for mild/moderate pain; Increase by 50-100% for mod/severe pain.
8) Manage breakthrough pain with short-acting opiates. Dose should be 10% of total daily dose. Breakthrough doses can be given as often as Q 60min if PO; Q 30min if SQ; Q 15min if IV. (As long a patient has normal renal/hepatic function)
9) When converting patient from one opioid to another, decrease the dose of the second opioid by 25-50% to correct for incomplete cross-tolerance.
10) Manage opioid side effects aggressively. Constipation should be treated prophylactically.



Opioid Equianalgesic Chart

Opioid	IV/SQ mg route	PO/PR mg route	Duration of Effect
Morphine	5	15	3-4 hours
Long Acting Morphine		15	8-12 hours
Oxycodone		10	3-4 hours
Long Acting Oxycodone		10	8-12 hours
Hydromorphone	0.75	4	3-4 hours
Meperidine**	50	150	2-3 hours
Codeine	50	100	3-4 hours
Hydrocodone		15	3-4 hours

Fentanyl Transdermal Patch

Opioid doses equivalent to 25mcg/hr fentanyl patch

Drug	Oral	IV
Morphine	45mg/24hr	15mg/24hr
Hydromorphone	10mg/24hr	2mg/24hr

Patch duration: 48-72 hours
Onset of effect: 12-24 hours before full analgesic effect of patch occurs
Must prescribe Short acting opioid for breakthrough pain

Opioids use for Liver or Renal Failure

Recommended	Use with caution
Hydromorphone Fentanyl	Codeine * Morphine * Oxycodone *

* These opioid have active metabolites that are renally eliminated
** Meperidine is not recommended b/c the metabolite, normeperidine, may accumulate in patients with poor renal functions causing CNS toxicity. Meperidine is contraindicated w/ MAOI's

Propoxyphene not recommended - norpropoxyphene metabolite can accumulate in the elderly causing sedation, confusion and hallucinations

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Switching from one opioid to another

Basic Conversation Equation

Equianalgesic dose		Equianalgesic dose and
route of current opioid	=	route of new opioid
24hr dose and route		24hr dose and route
of current opioid		of new opioid

Ex: Pt is taking Morphine SR 90mg po Q12h; you want to switch to IV morphine. Your equation would look like this based on conversion table.

15mg PO morphine	=	5mg IV morphine	= 60mg IV
180mg PO morphine		X mg IV morphine	over 24 hr

Converting to Transdermal Fentanyl

- Calculate PO Morphine equivalent and divide by 2. Ex: MS 100mg PO = Fentanyl 50mcg patch.
- Patch duration of effect = 48- 72 hrs
- Takes 12-24 hrs before full analgesic effect of patch occurs after application.
- Must prescribe short-acting opioid for breakthrough pain.

Methadone: Conversion varies with daily oral morphine dose. Long and variable half-life (12-60hrs), complicated dosing regimen. Should be used by someone with experience. When changing to methadone from higher doses of morphine the ratio of methadone: morphine changes. Ex: Morphine <100mg (1:3); 101-300mg (1:5); 301-600mg (1:10); 601-800mg (1:12); 801-1000mg (1:15); >1000mg (1:20)
Source: Gazelle. J Pall Med 2003; 6(4):620.

Bowel Regimen

Do not start opioid therapy without an appropriate bowel regimen (softener + stimulant); Titrate regimen to one soft BM Q 1-2 days

Step 1: Colace 100mg BID, Senna 1tab BID
Step 2: Increase Senna 2 tabs BID
Step 3: Increase Senna 3 tabs BID
Step 4: Increase Senna 4 tabs BID and add Sorbitol 30cc BID, Miralax QD, or Bisacodyl 2 tabs BID
Step 5: Increase Sorbitol 30cc TID or Miralax BID or Bisacodyl 3 tabs TID, if no BM by 4 days consider enemas, be aware of fecal impaction.

Adverse Effect	Management considerations
Constipation	Bowel regimen as above
Sedation	Tolerance typically develops. Hold sedatives/anxiolytics, dose reduction; Consider CNS stimulants (methylphenidate, increase caffeine intake)
Nausea/Vomiting	Dose reduction, opioid rotation, consider metoclopramide, prochlorperazine, scopolamine patch
Pruritis	Dose reduction, opioid rotation; consider antihistamine or H2 blocker
Hallucinations	Dose reduction, opioid rotation, consider neuroleptic therapy (haloperidol, risperidone)
Confusion/Delirium	Dose reduction, opioid rotation, neuroleptic therapy (haloperidol, risperidone)
Myoclonic Jerking	Dose reduction, opioid rotation; consider clonazepam, baclofen.
Respiratory Depression	Sedation precedes respiratory depression. Hold opioid. Give low dose naloxone- Dilute 0.4mg (1ml of a 0.4mg/ml amp of naloxone) in 9ml of NS for final concentration of 0.04mg/ml.