Pain

Seven Basic Steps in Pain Control

Abdul Mondul, MD

Pain

“ Unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (IASP)

“ .. Perfect misery, the worst of all evils, and excessive, overturns all patience”

(John Milton, Paradise Lost)

“ Pain is whatever the patient defines it to be”

(Margo McCaffery)

Pain

- Pain affects tens of millions of people in the U.S.
- Pain has a great impact in quality of life
- Pain is a primary presenting complaint in up to 78% of all ER visits
- Despite increased focus on pain management, guidelines / standards, a significant number of patients continue to experience unacceptable levels of pain.
- Common in advanced illnesses Cancer, CHF, Liver Disease, COPD,AIDS

First: Identify Type of Pain

Total Pain

- Physical
- Psychological
- Social
- Spiritual

Always consider social, spiritual and emotional components that may cause pain.

First: Identify Type of Pain

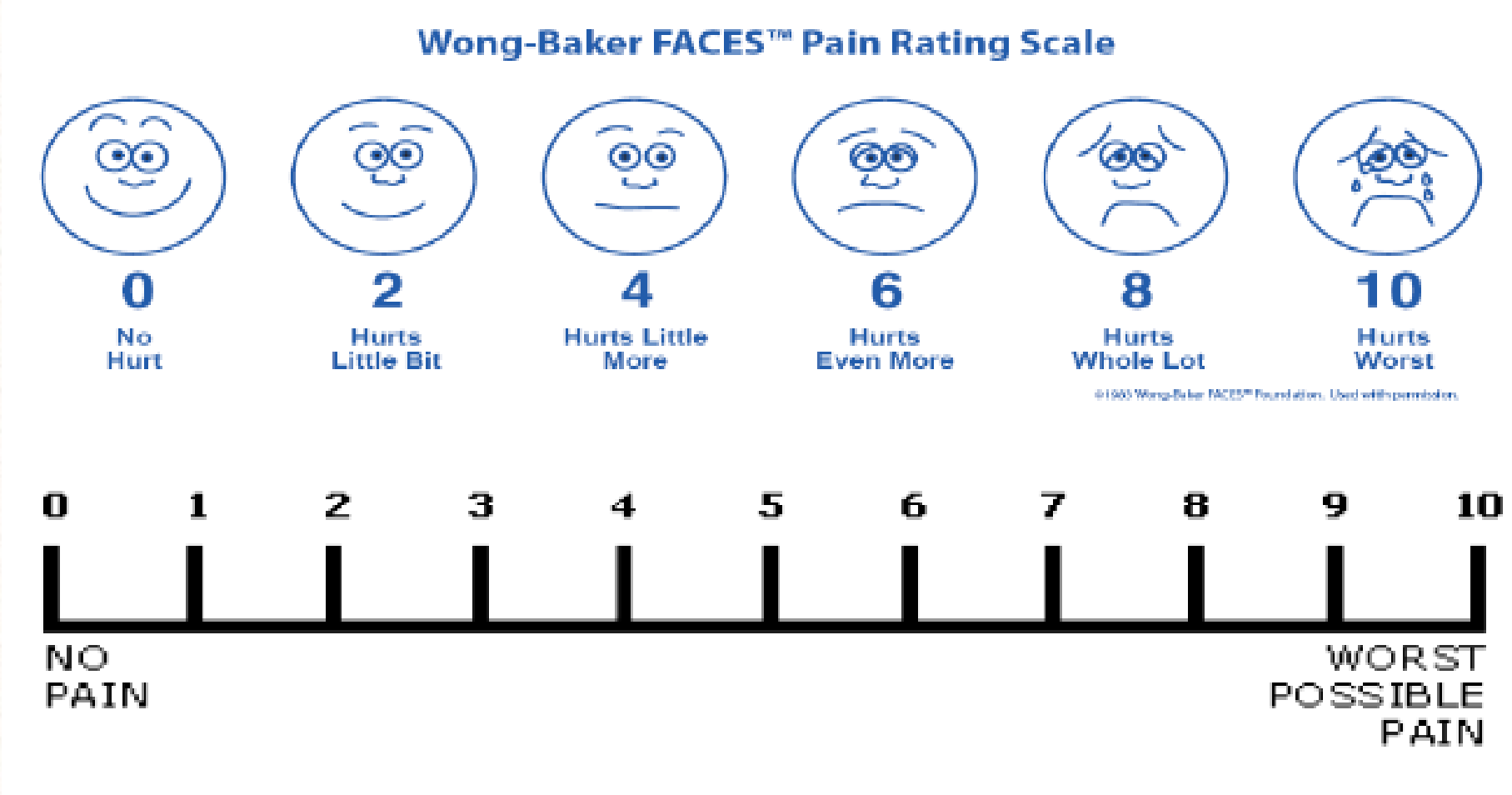
Nociceptive (Acute / Chronic)

- Somatic
- Visceral

Neuropathic (Acute / Chronic)

Neuropathic pain results from injury to nerves in either the central nervous system or the peripheral / sympathetic nerves.

Second: Rate Severity of Pain



Second: Rate Severity of Pain

PAINAD (Pain assessment in advanced dementia)

	0	1	2	Sc
Breathing Independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation.	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative Vocalization	None	Occasional moan or groan. Low-level speech with a negative or disapproving quality.	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial expression	Smiling, or inexpressive	Sad. Frightened. Frown	Facial grimacing	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract or reassure.	

Third: Pain Characteristics

OLD CARTS

Onset, Location, Duration, Character,

Alleviating/Aggravating, Radiation,

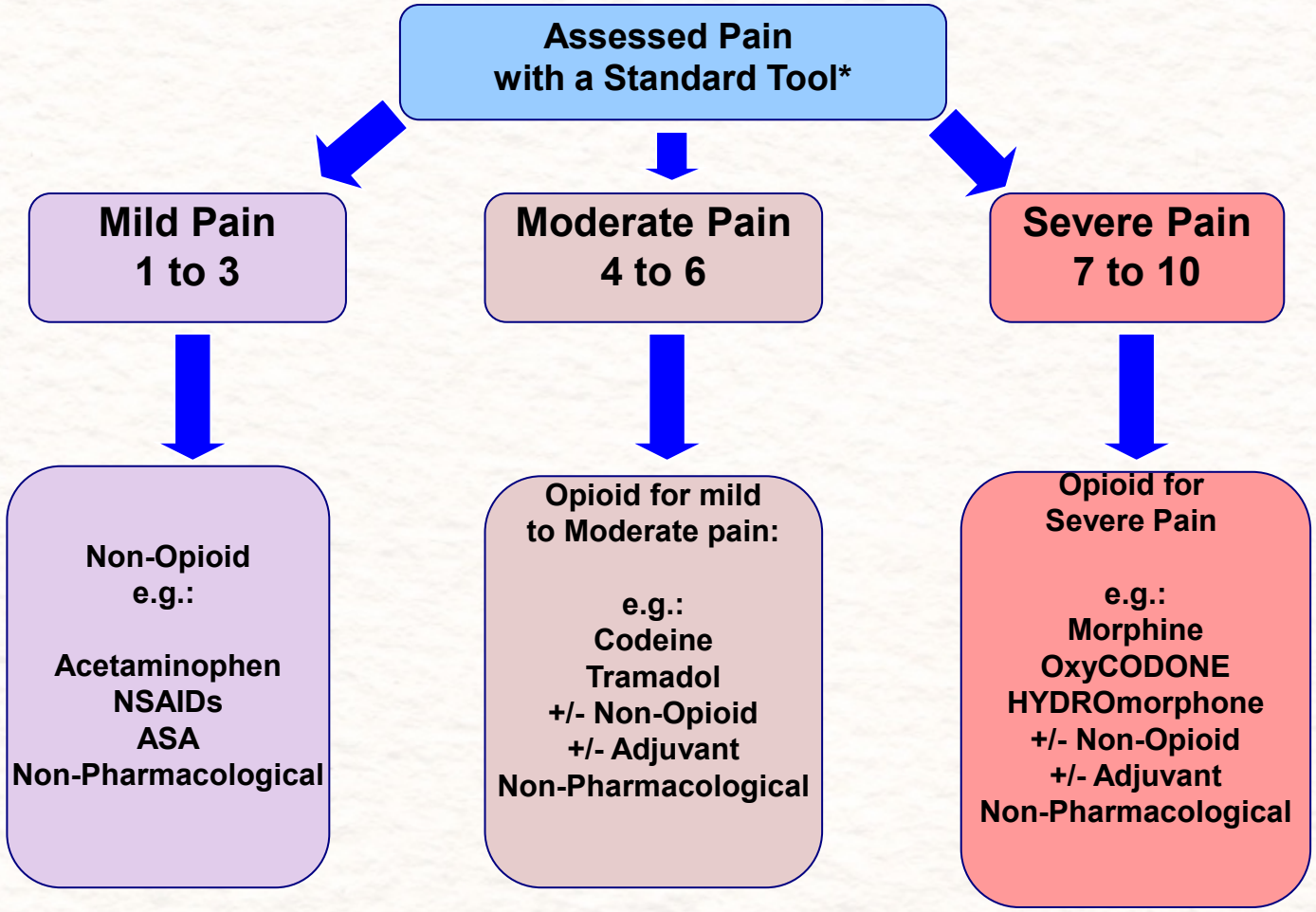
Temporary, Severity

and Current Medications (+prescribed over the counter)

Fourth: Develop a Common Goal and Acceptable Level of Pain with the Patient

- Patients have their own acceptable level of pain
- For some it may be 2 pain where others will tolerate pain level of 4 on a scale of 0 to 10
- It is important to establish the acceptable level for the patient

Fifth: Choose the Best Treatment Approach



Fifth: Choose the Best Treatment Approach

Non- pharmacological interventions

- Massage
- Relaxation techniques
- Acupuncture
- Physical therapy
- Pet therapy
- Warm /cold - gel packs

Non- Opioid Medications

Acetaminophen

- Antipyretic / Analgesic
- Sometimes used in combination with opiates
- Liver toxicity - Limit dose to 3 grams per day

Non- Opioid Medications

NSAID's

- Caution if risk for GI / renal toxicity
- Monitor potential toxicity / interactions
- If necessary, choose agents that don't inhibit platelets

    Salsalate

    Choline- Magnesium Salicylate

    Selective Cox-2

Non-Opioid Medications

NSAID’s

- If two NSAID’s tried in succession without efficacy , reassess and change strategy

- COX-2

  Lower incidence of GI bleed but have increased

  cardiovascular risk

Non-Opioids Pain Medications for Adults		
Acetaminophen (Tylenol)	325 mg to 650 mg every 4 - 6 hours (maximum daily dose 3 grams)	Can cause liver damage especially in setting of chronic liver disease.
NSAIDS (Non- Steroidal Antinflammatory Drugs) (class side effects: GI bleeding, increased cardiovascular risk, blood pressure, renal toxicity) Add PPI if GI risk warrants gastro-protection		
Drug	**Starting Dose**	**Notes**
IBUPROFEN	200 mg- 600 mg every 6 to 8 hours (maximum 3,200 mg / day)	Concurrent use with ASA; inhibits ASA antiplatelet effect (may be a class effect)
DICLOFENAC	50 mg every 8 –12 hours (maximum 150 mg /day)	Has relative COX-2 selectivity, may have higher cardiovascular risk
NAPROXEN	250 mg - 500 mg initial; then 250 mg every 6- 8 hours (maximum 1,500 mg /day)	
SALSALATE	500 - 750 mg every 12 hours Initial dose up to1,500 mg every 12 hours (maximum 3,000 mg)	
CHOLINE MAGNESIUM TRISALICYLATE	Initial dose 1,500 mg; then 1,500 mg every 8-12 hours; In elderly / patient 750 mg every 8-12 hours (maximum 4,500 mg / day)	Long life may allow daily/ twice daily dosing; minimal antiplatelet effect
CELECOXIB (Celebrex)	100 mg twice per day. Can give 400 mg on first day of administration (maximum 200 mg / day)	Cox- 2 inhibitor. Less GI toxicity. Increased cardiovascular risk
NABUMETONE (Relafen)	1 (One) gram daily (maximum 2 grams /day)	Relative long half-life and minimal antiplatelet effect
KETOROLAC (ONLY ACUTE PAIN for 5 days)	IV / IM: 30 mg every 6 hours; (maximum 120 mg /day). For elderly patients 15 mg every 6 hours (maximum 60mg/day). PO: 10 mg every 4-6hours (maximum 40 mg /day)	Usually used as a single dose Maximum duration of use is 5 (five) days
ASA		
ASPIRIN	325- 650 mg every 4 hours (maximum 4 grams)	May inhibit platelet aggregation for >1 week. Contraindicated for children with fever or other viral syndromes

OPIOIDS – Treatment Principles

- Bind to opiate receptors - CNS and spinal cord
- Metabolism – Hepatic / Renal
- Consider interactions with other medications

OPIOIDS – Treatment Principles

- In elderly and patients <50kg ALWAYS initiate at lower doses and adjust/titrate slowly.
- Meperidine is *NOT* recommended for the treatment of pain
- For persistent pain, opioids should be *administered on a regular time schedule, around the clock* according to the duration of action and the expectation regarding the duration of severe pain.
- Post-operatively: If severe pain is expected for 48 hours, routine administration may be needed for that period of time.
- ALWAYS start with short acting agents until dose requirements are stable.
- Use long-acting opioids only AFTER dose requirements are stable on short acting.

OPIOIDS – Treatment Principles

In Persistent pain requiring Around The Clock medications

Treat breakthrough pain, using the following principles:

- Breakthrough doses of analgesic should be administered on an "as needed" basis with intervals according to the peak effect of the opioid used.
- Use *an immediate release/short acting opioid* - most peak (analgesic effect) occurs within 60 to 90 minutes, with an expected total duration of analgesia of 2-4 hours.
- It is most effective to use the same opioid for breakthrough pain as the one being used for "around-the-clock" dosing.

OPIOIDS – Treatment Principles (Cont.)

- Breakthrough doses of analgesic should be calculated as short acting opioids 10% (5 to 15%) of the 24hour dose or 50% of each dose (from the around the clock individual dose of opioid).

- Adjustments to the “around-the-clock” dose are necessary if more than 2 to 3 doses of breakthrough analgesic are required in a 24-hour period, and pain is not controlled

In patients with *Liver/Renal Failure*:

CAUTION if using Codeine, Morphine or Oxycodone. It is preferable to use Hydromorphone, Methadone or Fentanyl (involve pain or palliative specialist for use of Methadone or Fentanyl).

Equianalgesic Dosing Table

Drug	Approximate Equianalgesic Dose (mg)	
	Oral	Parenteral
Morphine	30	10
Hydromorphone	7.5	1.5
Meperidine	300	75
Oxycodone	20	N/A
Methadone	Variable	Half the dose of methadone
Oxymorphone	10	1
Hydrocodone	30	N/A

Drug	Approximate Equianalgesic Dose	
	Initial Patch (micrograms/hour)	24-hr Oral Morphine Dose (mg)
Transdermal Fentanyl	25	45-134
	50	135-224
	75	225-314
	100	315-404
	125	405-494
	150	495-584
	175	585-674
	200	675-764
	225	765-854
	250	855-944
	275	945-1034
	300	1035-1124

OPIOIDS and USUAL DOSING

DRUG	STARTING DOSE PO (OPIOID NAÏVE)		STARTING DOSE IV / SC	
Short Half-life			**Short Half-life**	
	< 50 kg	>50 kg	< 50 kg	>50 kg
MORPHINE (Immediate Release)	0.3 mg / kg every 3 - 4 hours	5 - 15 mg every 3 - 4 hours	0.1 mg/ kg every 3 - 4 hours	2 - 5 mg every 3 - 4 hours
OXYCODONE	0.2 mg / kg every 3 - 4 hours	5 -10 mg every 3 - 4 hours	N/A	N/A
HYDROMORPHONE (Dilaudid)	0.06 mg/kg every 3 - 4 hours	2 - 4 mg every 3 - 4 hours	0.015 mg/kg every 3 - 4 hours	0.75 to 1.5 mg every 3 - 4 hours
CODEINE* (Tylenol #3 , #4)	1 mg/kg every 3 - 4 hours	30 - 60 mg every 3 - 4 hours	N/A	N/A
HYDROCODONE* (Vicodin, Lortab)		5 - 10 mg every 4 - 6 hours	N/A	N/A
OXYMORPHONE (Immediate Release)		5 mg every 6 - 8 hours		
TRAMADOL (Immediate Release)		25 - 50 mg every 6 hours (maximum 400mg/day)		
Long Half Life			**Long Half Life**	
	< 50 kg	>50 kg	< 50 kg	>50 kg
METHADONE consult pain or palliative for guidance	0.2 mg/kg q 6 - 8 hours	2.5 - 5 mg q 6 - 8 hours	0.1 mg / kg every 6 - 8 hours	2.5 - 5 mg every 6 - 8 hours
Fentanyl (Duragesic) NOT recommended in Opioid Naïve, acute or breakthrough pain. Consult pain or palliative for guidance			Transdermal 0.5 - 1.5 micrograms/ kg/ hour (not recommended in Opioid Naïve) IV 0.5 micrograms/ kg every 1 - 2 hours	Transdermal 12 - 25 micrograms/ hour (not recommended in Opioid Naïve) IV 25 - 50 micrograms every 1 - 2 hours

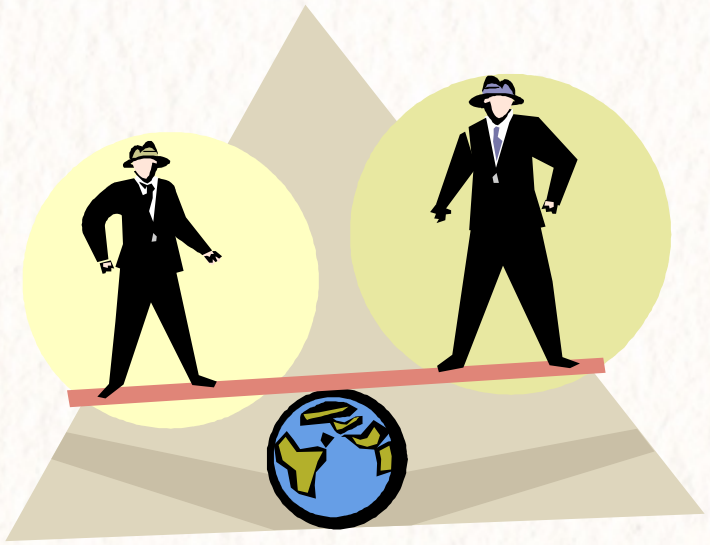
*DO NOT EXCEED 3 grams/day of acetaminophen with combination drugs

Signs of Opioid Overdose

- Intoxicated behavior - confusion, slurred speech, stumbling.
- Feeling dizzy or faint.
- Feeling or acting very drowsy or groggy, or nodding off to sleep.
- Unusual snoring, gasping, or snorting during sleep.
- Difficulty waking-up from sleep and becoming alert or staying awake.

Balancing…

……patient comfort and clinical care with the potential for harmful medication side effects



Sixth: Adjuvant Medication Options

- Bowel regimen if using Opioids - assess bowel regularity
- Neuropathic

  Consider Gabapentin, Amitriptyline/ Nortriptyline,

  Carbamazepine Pregabalin, or topical Capsaicin
- Bone

  NSAIDs, Steroids, Calcitonin, Radioisotopes, Radiation, Biphosphonates
- Increased Intracranial pressure – headache

  Steroids
- Visceral

  Anticholinergics (Hyosciamine, Scopolamine, Oxybutynin)

Seventh: Reevaluate / Address Side Effects / Adjust Dose

Always re-evaluate effectiveness of treatment.

Adjust dosage depending on response and optimize dosing before changing to a different medication regimen.

Advocate for consultation with a pain management expert *for complex pain situations which include, but are not limited to:*

- Pain unresponsive to standard treatment
- Multiple sources of pain
- Mix of neuropathic and nociceptive pain
- History of substance abuse

Questions