

# Pain Management for the Dying Patient

- “Pain is a more terrible lord of mankind than even death itself”

Albert Schweitzer, MD

# Definitions of Pain

“Pain: bodily, mental or emotional suffering as due to injury or illness.”

Random House Dictionary

- “... pain is perfect misery, the worst of evils, and if excessive, overturns all patience.” John Milton, Paradise Lost
- “ Pain is whatever the patient defines it to be.” Margo McCaffery

# Lack of Pain Control

- Studies show poor control of pain
- 40 to 50% of cancer patients report moderate to severe pain
- 25 to 30 % report severe pain
- Project of Death in America
- Support Study

# Consequences of Under Treated Pain

Sleep disturbance

Decreased Conditioning

Depression

Decreased Socialization

Agitation & Anxiety

Decreased Hope

Increased demands on caregivers

# Functional Pain Scale

- 0 No Pain
- 1 tolerable, doesn't prevent activities
- 2 Tolerable, does prevent some activities
- 3 Intolerable, but can use phone, watch TV or read
- 4 Intolerable, cannot use phone, watch TV or read
- 5 Intolerable, cannot verbally communicate because of pain

# Pain Assessment

- Directed history and physical: “OLD CARTS”
- Onset
- Location
- Duration
- Character
- Alleviating/aggravating factors
- Radiation
- Temporal factors
- Severity
- Functional impact
- Psychological impact

# Nonverbal Evidence of Pain

- Facial expression
- Immobilization of body part
- Purposeful movements
- Protective movements
- Rhythmic movements
- Restlessness
- Tossing in bed
- Confusion

# Patient's Report of Pain

- Still the Gold Standard
- May be inconsistent, variable
- Influenced by psychological , spiritual, social, cultural and physical factors
- May conflict with family reports
- Use pain scales consistently

# Pathophysiology of Pain

- No decrease in sensitivity to pain with aging
- Acute pain
  - Alerts person to potential or actual injury
  - Objective signs include tachycardia, hypertension, diaphoresis

## **Chronic pain**

- No protective function
- Few or no objective signs
- May develop into chronic pain syndrome

# Nociceptive Pain

- Stimulation of nociceptors
  - Somatic: easy to localize and describe
  - Visceral: cramping, aching, difficult to localize
  - Bone: constant, deep ache
- Aching or Throbbing pain
- Usually responds to nonopioid and opioid analgesics
  - Non-pharmacologic strategies may be effective

# Neuropathic Pain

- The Nerve itself is injured
    - Mono-and polyneuropathies
      - \* Diabetic neuropathy, or trigeminal neuralgia
    - Central : Cervical plexopathy, phantom limb pain
    - Sympathetic: RSD, causalgia
      - \* Burning, stinging shooting in nature
- Traditional analgesics may be less effective

# Barriers to Pain Control- MD

- Failure to keep up with therapeutic advances
- Fear of addiction
- Concern about side effects
- Insistence on an acceptable cause of pain
- Failure to see pain control as a primary goal
- Questioning the validity of the complaint
- Inability or unwillingness to seek help

# Barriers to Pain Control Pt/Family

- Concerns about addiction and dependency
- Misunderstanding regarding purpose
- Represents progression of disease
- Poorly managed side effects
- Giving in to the pain rather than “The fight”
- Social stigma

# Addiction

- Psychological rather than physical problem
- Probable genetic link
- No evidence that incidence of addiction is increased by therapeutic use of opioids
- Opioids can be successfully prescribed for dying addicts if controls are in place

# Chronic Pain vs Addiction

## True Pain

1. In control of medications use
2. Medications improve quality of life
3. Desire to decrease medication if side effects are present

## Addiction

1. Out of control with medications
2. Medications cause decreased quality of life
3. Medication use continues or increases despite side effects

# Chronic Pain vs Addiction, cont.

## True pain

4. Concern about the physical problem
5. Willing to follow a contract for the use of opioids
6. Frequently has medicines leftover

## Addiction

4. Unaware or in denial of any problems
5. Will not follow a contract for the use of opioids
6. Never has leftover meds, loses prescriptions, and always has a “story”

# Pseudo-Addiction

- Drug seeking behaviors in pain patients are often due to inadequate pain control rather than addiction
- Drug Hoarding
- Unsanctioned dose escalation
- Doctor shopping
- Aggressive demands for more drugs

# Guidelines for Treatment

- Treat the cause if possible
- Use least invasive modalities first
- Use long-acting around –the –clock opioids for severe, persistent pain
- Provide short-acting medication for breakthrough symptoms
- Start low , go slow
- Re-titrate the dose often
- Use enough, often enough

# Total Pain

- The patient's complaints are a sum of:
  - Physical pains (often multiple)
  - Psychological problems (e.g. anxiety, depression)
  - Social problems (e.g. isolation, financial stress)
  - Spiritual (e.g. absence of meaning and hope)
- This complexity means
  - There are multiple ways to intervene
  - Effective teamwork is essential

# Non-Pharmacological treatment of Pain

- Psychological approaches
  - Cognitive therapies  
( relaxation, imagery, prayer)
  - Bio feedback
  - Behavior therapy, psychotherapy
- Complementary therapies
  - Massage, art, music, aroma therapy

# Non-Pharmacological treatment of Pain

- Neurostimulation
  - TENS, acupuncture
- Physical therapy
  - Exercise, heat, cold
- Interventional Therapies
  - Nerve blocks
  - Nerve ablation
  - Epidural, intrathecal

# Topical Analgesics

- **Counterirritants**
  - Menthol, methylsalicylate, trolamine salicylate
  - Capsaicin cream 0.025% -0.075%, derived from red peppers, depletes substance P
- **Local Anesthetics**
  - Lidocaine/prilocaine (EMLA)
    - \*Apply to intact skin ± occlusive dressing
  - Lidocaine transdermal 5% (Lidoderm Patch)
    - \*Apply over painful area, may cut to size
    - \* Up to 3 patches at time for up to 12 hr/day

# WHO Pain Ladder

**Free from cancer pain**  
**Opioid for moderate**  
**To severe pain**  
**Non-opioid + Adjuvant**

**Opioid for mild to moderate pain**  
**Non-opioid + Adjuvant**

**Non-opioid+ Adjuvant**  
**Pain persisting or increasing**

# The WHO Step-Ladder

- By the mouth
- By the clock
- By the ladder
- For the individual
- With attention to detail

# Step One: Non-Opioid Analgesics

## -Acetaminophen

- Effective analgesic
- Dose limited – 4,000 mg/day

## -NSAIDs

- Significant side-effects with long term use
- Black-box warning of MI and CVA risks

## -Cox II Inhibitors-only celebrex

- No platelet dysfunction
- Lower Incidence of ulcers and GI Bleeding
- Other side-effects similar to traditional NSAIDs
- New black-box warning of MI and stroke risks

# Step One: Corticosteroids

- Dexamethasone
  - 4 – 16 mg daily
  - less water retention than prednisone
- Indications
  - Rarely used with NSAIDs due to gastropathy
  - Bone pain no relieved by NSAID
  - Acute nerve compression
  - Visceral distension, nausea
  - Increased intercranial pressure

# StepTwo: “Weak” Opioids

When pain persists or increases, a “weak” opioid can be added to or substituted for the step-one drug

- Codeine (Tylenol #3, Tylenol #4)

- Hydrocodone (Vicodin, Lortab)

- Above are compounded with acetaminophen, which limits their usefulness due to dose-related toxicity.

- Tramadol (Ultram)

# “Weak” Opioids: Codeine

- Codeine
- True ceiling effect for analgesia
- Does not cross blood-brain barrier
- Metabolized to morphine, which does cross
- Limited by enzymatic conversion in liver
- If >60 mg q 4 hr given, little increase in analgesia, but more constipation

# “Weak” Opioids: Hydrocodone

- Hydrocodone
  - Controversial relative potency
    - Either equally potent to oral morphine (AHCPR) or one-half as potent as oral morphine (common observation)
  - Coupled to acetaminophen or homatropine so no triplicate requirement (Schedule III)
  - Most commonly prescribed opioid

# The WHO Step-Ladder

- New ladder interpretation
  - Step 2 = opioid dose determination
    - Skip weak opioids and use lower doses of immediate release, strong opioids
  - Purpose of step 2 is to go to step 3
  - Step 3 = long-acting opioids

# Avoid: Agonist-Antagonists

- Examples:
  - Pentazocine (Talwin)
  - Butorphanol (Stadol)
  - Nalbuphine (Nubain)
- High incidence of hallucinations or confusion
- Analgesic ceiling and possible withdrawal reaction
- Difficult transition to pure agonist
- Not recommended for use

# Avoid: Meperidine

- Not indicated for the management of chronic pain due to its toxic metabolite normeperidine, which accumulates and can cause:
  - Restlessness and anxiety
  - Hallucinations and delusions
  - Seizures and death
- Drugs of equal or better efficacy are available without the serious side-effects

# Avoid: Propoxyphene

- Accumulation of metabolites may lead to seizures, mental status changes and cardiac rhythm problems
- Analgesic effects are usually no better than the acetaminophen component
- Does have significant euphoria through stimulation of the limbic system

# One Titration Plan

- START: Oral morphine (or oxycodone) IR (20 mg/cc) or IR tablets
- Initial dose: 5-20 mg q 1 hour PRN
- When average daily use is determined (2-3 days) divide into qd or bid standing close with a 10% breakthrough q1 hour
- Example: If average total 24-hour requirement was 60 mg.

RX 30 mg bid with 5-10 mg q1 hour PRN

Retitrate when prn doses are routinely >3 a day

# Extended-Release Opiates

- Improve compliance, give better pain relief with less opiate use
- Dose q 12 or 24 (product specific)
  - don't crush or chew tablets
  - may use time-release granules with feeding tubes or in applesauce
- Adjust dose q 2 – 4 days
- Absorbed rectally if suddenly unable to swallow

# Strong Opioids: Fentanyl and Hydromorphone

- Hydromorphone (Dilaudid)
  - 5-7 times as potent as morphine
  - High solubility – good for sc infusions
- Fentanyl
  - IV/SC infusions
  - Transdermal patch (Duragesic)
  - Oral transmucosal fentanyl citrate (Actiq)

# Strong Opioids: Fentanyl Patch

- Transdermal delivery system
  - four strengths 25 – 100 mcg/hr
  - 72 hour duration (may vary)
  - 24 hour or longer period to reach steady state (difficult to titrate quickly)
- Good when pain is relatively stable and the oral route is not available
- Not a first-line opioid for pain relief

# Fentanyl: Equianalgesic Dosing

- The dose per hour of fentanyl is roughly equivalent (as a starting point) to twice the 24-hour dose of oral morphine
- Thus the following conversions:
  - 100 mcg/hr transdermal fentanyl = 200 mg/day morphine
  - 100 mg bid of morphine (total 200 mg/d) = 100 mcg/hr transdermal fentanyl

# Step Three: Strong Opioids

- Give enough, often enough
- Adjust the dose as often as needed
- Use other modalities
- There is no maximum dose
- Correct dose = comfort with minimal side effects

# Oral Transmucosal Fentanyl Citrate (Actiq Unit)

- Pain relief in 15 minutes or less (similar to IV morphine bolus by PCA pump)
- For breakthrough pain in opioid tolerant
- 6 doses, 200 – 1600 mcg
- No way to calculate equianalgesic dose, must start low and titrate up

# Opioid Adverse Effects: Usually Dose-Related and Drug-Specific

## COMMON

- Constipation
- Dry mouth
- Nausea/vomiting
- Sedation
- Sweats

## UNCOMMON

- Respiratory depression
- Bad dreams and hallucinations
- Dysphoria/delirium
- Myoclonus/Seizures
- Pruritus/urticaria
- Urinary retention

# Respiratory Depression

Extremely rare in therapeutic use of opioids

- If the pupils are not constricted and react to light, there is almost no risk of respiratory depression by increasing the opioid.
- Dying patients are usually apneic due to brain stem dysfunction, not the opioid.
- In the very rare case of distress at the edge of respiratory failure, good communication with patient, family, and staff our goals of care in these final hours is essential.

# Constipation

- Occurs due to the slowing down of bowel functions
- Optimal treatment usually includes a bowel stimulant
  - Senna is the preferred drug
  - Prophylaxis is almost always indicated when initiating opiate therapy

# Opioid Equianalgesic Dosing

Opioid Agonist	Equianalgesic Dose	
	Oral	Parenteral
Morphine	30 mg	10 mg
Hydromorphone	7.5mg	1.5mg
Oxycodone	30 mg	n/a
Levorphanol	4mg	2mg

# Opioid Regimen-Maintenance

- Establish baseline scheduled dosing using sustained release opioids
- Provide breakthrough - Titrate shorter-acting opioids
- Ensure side effects prophylaxis - remember the bowels
- Integrated strategies

# Opioid Tolerance

- If patient requires more drug for the same effect, and has no side effects:
  - This is more often due to disease progression than to opiate tolerance
  - Increase the dose based on the breakthrough usage
  - Consider adding an adjuvant agent

# Opioid Tolerance

- When dose-limiting side effects prevent further dose escalation, consider opioid rotation.
- Use 50% - 75% of the equianalgesic dose of the new opioid as the starting dose when switching opioids. Occasionally lower doses are needed.

# Neuropathic Pain

- Clinical diagnosis:
  - Dermatomal distribution if peripheral lesion
  - Described as superficial burning or stinging
  - Allodynia (sensation out of all proportion to the stimulus) diagnostic, but present only in 30%
  - Opioid resistance: may take very large doses to relieve neuropathic pain.
  - Any patient receiving in excess of 1000 mg morphine per day should be suspected of having an undiagnosed neuropathic condition.

# Neuropathic Pain

- Examples:
  - Celiac plexus tumor (pancreatic cancer)
  - Brachial plexus tumor
  - Sacral plexus tumor
  - Post-mastectomy syndrome
  - Diabetic peripheral neuropathy
  - Post-herpetic neuralgia

Management often requires adjuvants and/or methadone.

# Anticonvulsants for Analgesia

- Gabapentin (Neurontin)  
Approved for use in post-herpetic neuralgia  
Lyrica (diabetic and post-herpetic neuralgia)  
AGS recommends over TCAs
- Valproate (Depakote po or Depacon iv)
- Carbamazepine (Tegretol) vs oxcarbazepine (Trileptal)
- Clonazepam (Klonopin)
- Phenytoin po or fosphenytoin (Cerebyx) iv
- Lamotrigine (Lamictal)
- Levetiracetam (Keppra)

“I found that when I didn’t have pain  
I could forget I had cancer.”

A cancer patient