



# Pain Management for the Medical and Hematological Oncologist

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# Incidence of Cancer Pain

- 30% of all cancer pts- mod/severe pain
- 60-90% of patients with advanced disease
- Majority of advanced cancer patients have greater than one type of pain
- Can be relieved in 80-90%
- Acceptable level in almost all



## Ed

- 63 yo male – hormone refractory prostate CA, several areas of bony mets (including L2, 3, 4 but not ischium, ilium, sacrum or right hip area)
- Presents to clinic with increasingly severe right buttock pain



## Ed

### Current analgesic regimen:

- Fentanyl 50 mcg/hr patch – change q72h
- Tyl #3 – 1-2 po q6h prn (uses on average 5/day when pain “severe”, unsure of benefit)
- Colace 100mg BID
- wife reluctant to support increasing patch as her nephew is a heroin addict



# Concept of Total Pain

- Domains that contribute to total pain
  - Physical
  - Mental
  - Emotional
  - Social
  - Spiritual
- All domains must be considered to effectively manage pain



# The Pain History

- Frame/word questions in ways that uncover key details
- Objectivity is crucial
  - Important not to react or make judgments before the story is complete



# Elements of a Comprehensive Pain History

- Severity
- Location
- Quality/Character
  - words to describe what it feels like
- Duration
- Pattern
- Aggravating, alleviating, associated factors



# Elements of a Comprehensive Pain History

- Response to past and current analgesic therapy
  - Detailed list of each medication name, impact on pain, timing of doses, specific description of circumstances when medication is used
- If more than one pain, inquire about each one separately
- Diary or record of the pain
- If appropriate, screen for abuse/addiction



## Elements of a Comprehensive Pain History

- Impact on activities of daily living? Sleep? Mood?
- What is the meaning of the pain to the patient?
- Fears patient/family have about analgesics?
- What medications do they have at home?
- How much of each medication do they have?
- Who dispenses the medication?
- How do they pay for medications?
- How do they renew medications?



# Common Pain History Omissions

- Quality of Pain – descriptor words
- Radiation
- Aggravating/Alleviating
- Previous opioid side effects
- Past Opioid Use
- Screen for abuse/addiction
- Details specifying impact of analgesics



Why is it important to take a thorough pain history and determine the type(s) of pain the patient has?



Why is it important to take a thorough pain history and determine the type(s) of pain the patient has?

The history is ***the key*** to understanding and categorizing the patient's pain(s) and provide initial direction for a management plan



## Ed

- C/o constant, severe right buttock pain
- 8/10 at rest, 10/10 with movement
- deep, dull, achy in character
- occasionally radiates down back of right leg  
“more of a shooting feeling”



# Clinical Classification of Pain

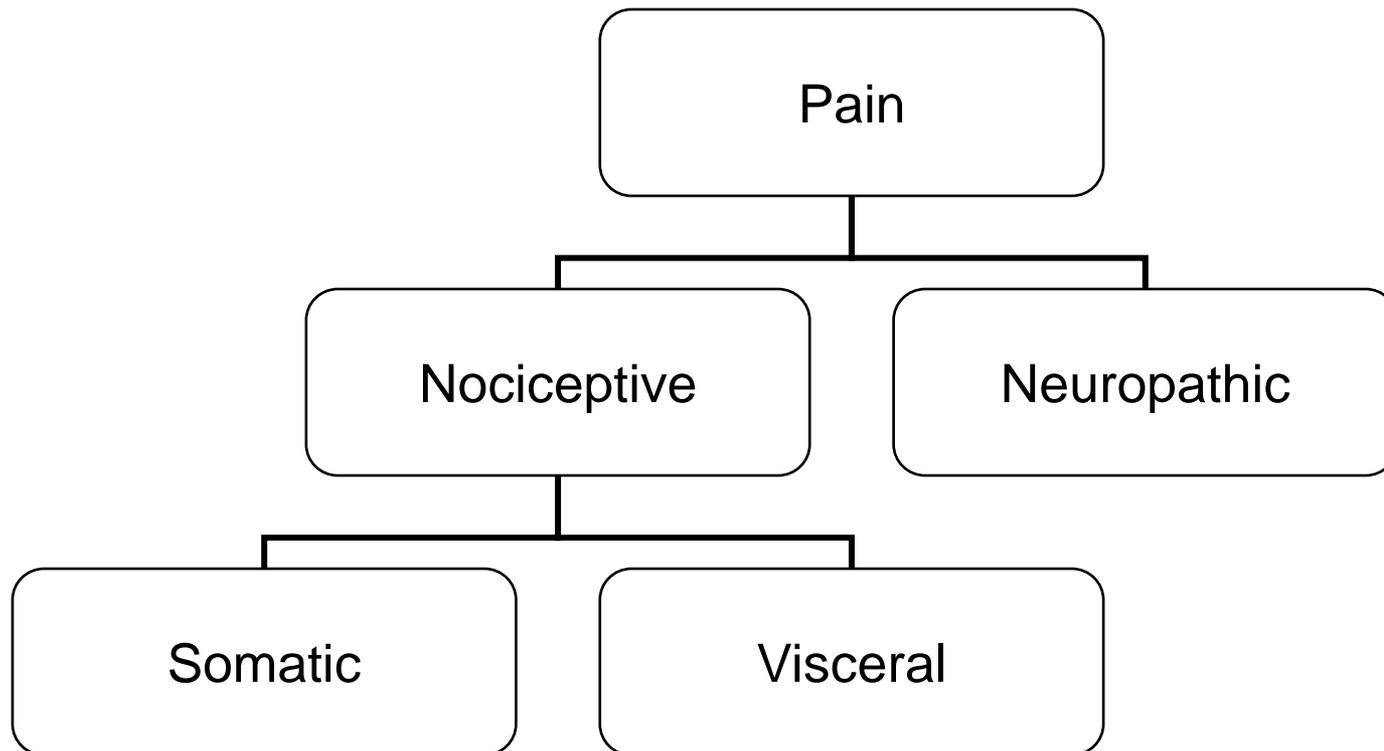
It is **essential** that each cancer-related pain for each patient be accurately classified according to its pathophysiology in order to make the best treatment choices using:

- Analgesics
- Adjuvant drugs
- Other analgesic modalities

Not all pain should be treated only with opioids!!



# Pain Classification System





# Nociceptive Pain

- Pain resulting from chemical or physical stimulation of peripheral nerve endings (nociceptors) located in tissues
- Neural pathways are intact
- Can be somatic or visceral



# Nociceptive Somatic Pain

- Usually well localized and non-radiating
- Can be described as  
achy/sharp/throbbing/gnawing/dull
- Deep somatic pain
  - ex: bone, muscle
- Superficial somatic
  - ex: skin, mucous membranes

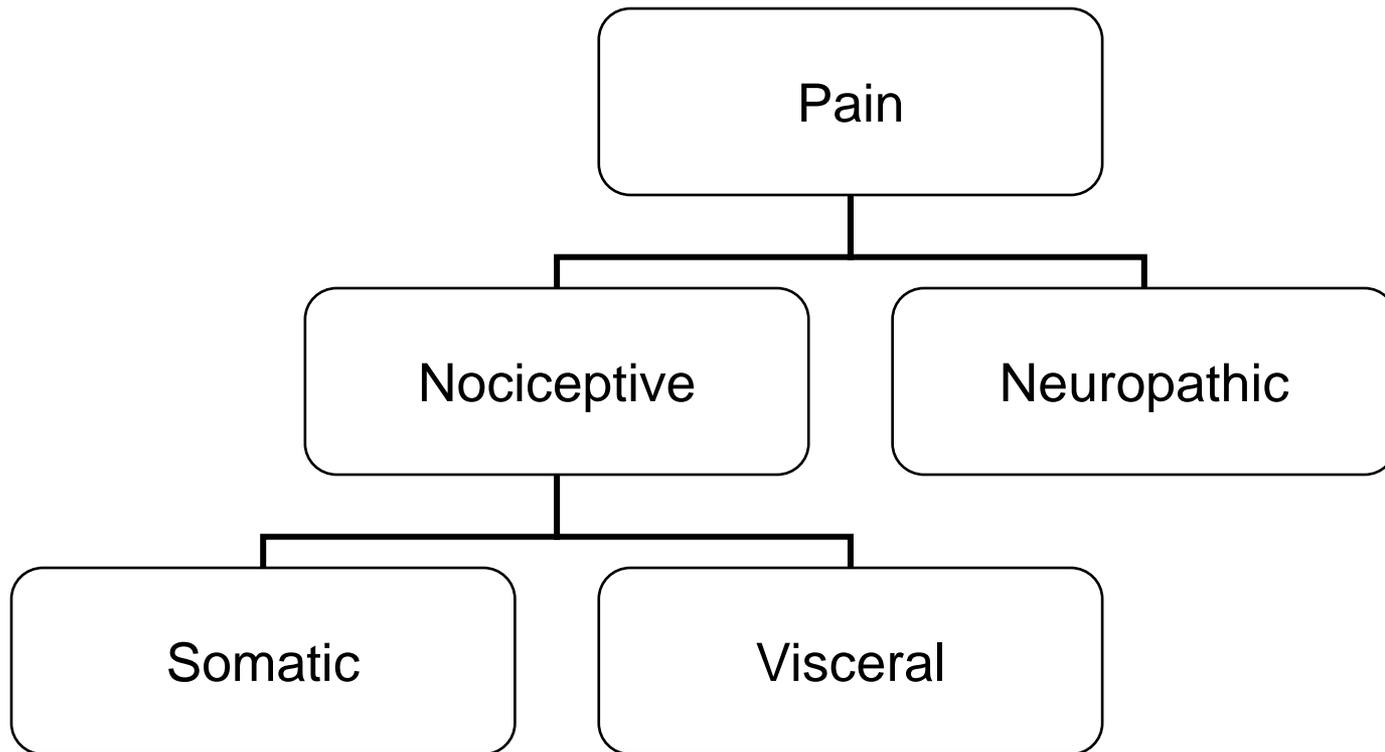


# Nociceptive Visceral Pain

- Infiltration/compression/distention/ stretching of thoracic/abdominal viscera
- More diffuse (squeezing or pressure like) over viscera involved or referred pain
- ex: bowel obstruction, liver capsule stretching



# Pain Classification System





# Neuropathic Pain

- Caused by peripheral/CNS system injury
  - Tumor compression/infiltration
  - Secondary to treatment (chemo/radiation/surgery)
- Often radiates along dermatome or peripheral nerve distributions
- Burning, lancinating, pins/needles, shooting, “feels dead or wooden”



# Types of Neuropathic Pain

- Allodynia: pain due to a stimulus that normally causes no pain
  - pain response to light touch
- Hyperalgesia: ↑ sensitivity
  - excruciating pain to pinprick
- Dysesthesia: unpleasant abnormal sensation
  - burning, tingling, numbness



## Ed

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  - 8/10 at rest, 10/10 with movement
  - deep, dull, achy in character
  - occasionally radiates down back of right leg  
“more of a shooting feeling”
- Nociceptive - Somatic
- Neuropathic



# Ed

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# Ed – Objectives

- Improve management of nociceptive pain
- Address neuropathic pain
- Address fears about opioids



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- ***Improve management of nociceptive pain***
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# Ed – Manage Nociceptive Pain

Opioid Options:

1. Maximize current regimen
2. Rotate opioid (new regimen)



# Fentanyl Transdermal

- Oral BT form currently not available in Canada
- Onset of action, time to reach steady state and absorption highly variable
- Does not allow for rapid titration
- In setting of malignant pain, fentanyl only appropriate when:
  - pain is well controlled and unlikely to vary considerably
  - oral route not available\*\*

\*fentanyl contraindicated in opioid naïve patients

\*\*do not consider when patients lose oral route due to progressed disease/enter actively dying phase



# Opioids

- Morphine
- Hydromorphone
- Oxycodone
- Fentanyl
- Codeine
- Methadone
- Tramadol
- Buprenorphine

*Meperidine (Demerol): NO ROLE IN CHRONIC/CANCER PAIN MANAGEMENT*



# Opioid Preparations

- MS Contin, M-Eslon, Kadian
- MS-IR, Statex
- Hydromorph Contin
- Hydromorphone IR
- OxyContin
- Oxycocet, Percocet, Endocet, Oxy-IR
- Duragesic
- Codeine Contin
- Tylenol #1-4

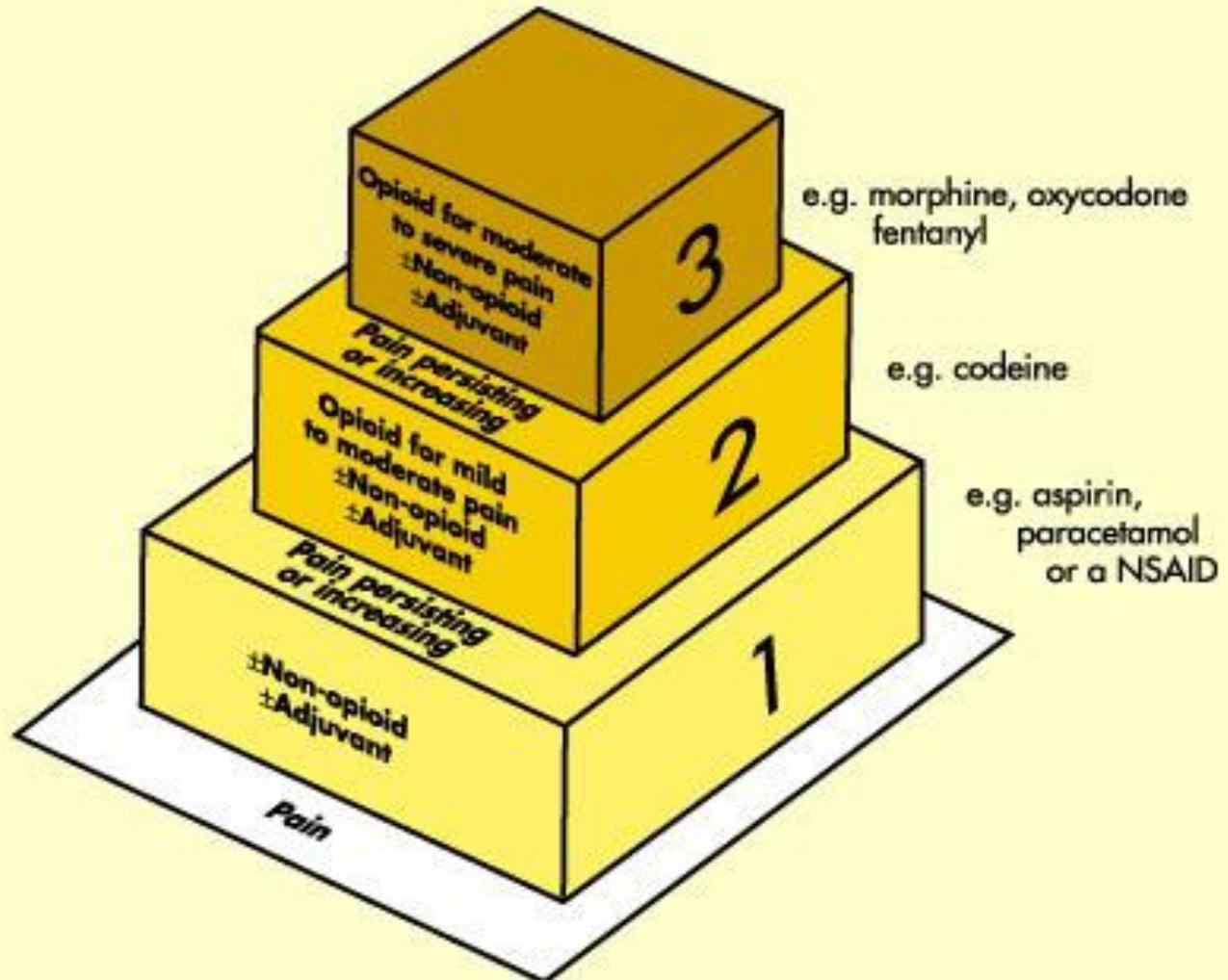


# Opioid Cost Comparison

MS Contin™	1000mg/d	\$820
Kadian™	1000mg/d	\$960
OxyContin™	800mg/d	\$1066
Duragesic™	250mcg/h	\$1499
Methadone tabs	100mg/d	\$22



# WHO Ladder





# General Dosing Considerations

- Educate patient and family
- Investigate wisely and effectively
- Do not delay → TREAT immediately
- Use a “pain diary” and objective measures of pain



# General Dosing Considerations

## ***Helpful Hints as we begin to develop an approach:***

- If pain is “mild”, non-opioids (acetaminophen, acetylsalicylic acid) should first be introduced
- If pain persists, or if at presentation it is “moderate” to “severe”, opioids should be introduced



# General Dosing Considerations

- Initially, “weak opioids” (codeine, tramadol) should be prescribed; if “maximum” doses are reached, the weak opioids should be rotated to “strong opioids”
- “Strong” opioids have **no maximum dose!!!**



# General Dosing Considerations

- Continuous pain: around the clock pain = ATC dosing
- Intermittent pain: breakthrough or incident pain = PRN dosing



# General Dosing Considerations

- If ATC dosing required, the patient should initially receive a dose of short-acting opioid every 4 hours (***T<sub>1/2</sub>*** - determines dosing interval of standing opioid)
- ***Steady state*** - determines when it is safe to make changes in dosing
  - *after 5 half lives*



# General Dosing Considerations

- “Breakthrough pain” refers to pain experienced despite around-the-clock analgesia
- **C<sub>max</sub>**- determines breakthrough frequency
  - *1hr po (all opioids), 20-30 min sc, 6-10 min iv*
- When initiating an opioid, breakthrough dose =
  - 50% of the routine 4-hourly dose **OR**
  - 10%–20% of the total daily opioid dose



# General Dosing Considerations

- If pain begins to stabilize on a routine dose of a short-acting opioid, the long-acting equivalent of the same opioid should be substituted
- The availability of hourly breakthrough dosing should not change



# General Dosing Considerations

- Long-acting or extended-release opioids have a half-life of approximately 12 hours
- Most patients should receive them twice daily
- Long-acting formulations should not be used on an as-needed basis because of their delayed onset of action
- In general, patients should receive the same opioid for routine and breakthrough dosing (the exception in Canada is fentanyl)



# General Dosing Considerations

- With IR oral preparations: dose q4h, adjust daily
- With SR oral preparations: dose q8,12,24h, may adjust daily
- If **unstable pain**: use IR preparations, it gives you more flexibility



# Combination Preparations

- Percocet, Endocet, Oxycocet
- Tylenol #1,2,3,4
- Daily dosing/use is limited by amount of acetaminophen



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# Opioid Conversion Table

	<u>Codeine</u>	<u>Morphine</u>	<u>Oxycodone</u>	<u>Hydromorph</u>	<u>Fent/Meth</u>
<b>PO</b>	100mg	10mg	5mg*	2mg	
<b>SC/IV</b>		5mg		1mg	

\* Disagreement as to appropriate equivalency

Fentanyl patch 25micrograms q72hours = 50mg morphine q24hours

Methadone = conversion very complicated



## Side note...

1 Percocet (5mg PO oxycodone) =

10mg PO morphine = 2 mg PO hydromorphone



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Fentanyl 50mcg/hr = Morphine 100mg q24h =  
Hydromorphone 20mg q24h



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Fentanyl 50mcg/hr = Morphine 100mg q24h =  
Hydromorphone 20mg q24h

Hydromorphone 3mg po q4h **OR**

Hydromorph Contin 9mg q12h



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Fentanyl 50mcg/hr = Morphine 100mg q24h =  
Hydromorphone 20mg q24h

Hydromorphone 3mg po q4h **OR**

Hydromorph Contin 9mg q12h

Hydromorphone 2mg q1h prn



What was wrong with  
original breakthrough dose?

Tylenol #3 – 1-2 po q6h prn 5/day



# What was wrong with original breakthrough dose?

Tylenol #3 – 1-2 po q6h prn 5/day

Tylenol #3 = Codeine 30mg = Morphine 3mg =  
Hydromorphone 0.6 mg (1/4 of reqd)



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## Ed – Objectives

- Improve management of nociceptive pain
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**“But HCP...we don't want him to become addicted!”**



# Opioid Myths

- ***MYTH 1 – Opioids Cause Addiction***
- ***Physical dependence*** is an expected result of long-term opioid treatment
- SHOULD NOT BE CONFUSED WITH ADDICTION
- Physical dependence = withdrawal syndrome
- ***Addiction*** is a chronic neurobiologic disease with genetic, psychosocial and environmental factors
- Helpful to patients to differentiate reason for use ie relieving physical pain versus escaping psychological “pain”



“But HCP...aren’t these medications too strong for him to be taking all the time?”



Which of the following is the strongest opioid?

- A) fentanyl
- B) hydromorphone
- C) morphine
- D) oxycodone
- E) none of the above



# Opioid “Strength”

- Patients/caregivers ask “Is this too strong?”
- How do we respond?



# Opioid “Strength”

- Patients/caregivers ask “Is this too strong?”
- How do we respond?
- Potency (opiate receptor affinity; accounts for “difference” in # of mg)
- Equianalgesic dosing
- Titrate to effectiveness
- “All opioids are in the same category in terms of strength. Its about figuring out which one and what dose works the best for you and your pain.”



# Opioid Myths

- ***MYTH 2 – Opioids = Rapid Tolerance***
- Tolerance = state of adaptation, diminished effect of drug over time
- Clinically significant tolerance is unusual
- Patients with progressing disease require increased levels of opioids to control increased levels of pain



# Opioid Side Effects

- Common
  - Constipation
  - Nausea
  - Sedation\*\*
- Less Common
  - Pruritus
  - Hallucinations
- Rare
  - Respiratory depression



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# Constipation

- Prevention is the key!!!
- **ALL** patients on routine opioids require routine medications to prevent constipation
- Recent evidence suggesting no efficacy with stool softeners (docusate)
- Must have laxative – maximize Senna and, if necessary, add Lactulose



# Constipation

- No BM for three days is considered **urgent**
- Lactulose 30 cc every two hours until BM
- Bisacodyl suppositories
- Enemas



# Opioid Related Nausea

- Opioid induced nausea tends to be temporary
- If persists: treat nausea and rule out other causes
- History of opioid related nausea suggests patient may require prophylactic anti-emetics
  - haloperidol (Haldol) 0.5 mg
  - prochlorperazine (Stemetil) 10mg



# Opioid Side Effects: Four Management Strategies

- Dose reduction of systemic opioid
- Symptomatic management of the side effect
  - Ritalin for sedation, clonazepam for myoclonus
- Opioid rotation
  - Hydromorphone better choice in renal failure
- Switching route of systemic administration



# Opioid Toxicity

- Drowsiness...lethargy...non-arousable...
- Confusion...hallucinations...agitation...
- Myoclonus...seizures
- Respiratory rate decline



# Opioid Toxicity: Four Common Causes

- Sepsis
- Decreased pain due to:
  - new adjuvant therapy
  - radiotherapy
  - chemotherapy
- Opioid dose changes made too frequently within 5 half-life periods
- Conversion mistakes



## Ed – Objectives

- Improve management of nociceptive pain
  - Hydromorphone 3mg po q4h
  - Hydromorphone 2mg q1h prn
- ***Address neuropathic pain (next module)***
- Address fears about opioids
  - Wife and patient educated re: opioid safety