Pain Management

International Association for the Study of Pain (IASP) defines pain as:
• “a sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such damage” — always unpleasant

Pain is subjective
• Pain is “whatever the experiencing person says it is, existing whenever the experiencing person says it does”
• NOT what others think it OUGHT to be.
• To know if a patient is in pain you must ask them.
• Seen in many disease processes, including cancer, heart failure and renal failure.

“The inability to communicate in no way negates the possibility that an individual is experiencing pain and is in need of appropriate pain relieving treatment”

Non-verbal indicators:
• moaning
• grimacing
• furrowed brow
• bracing
• rigidity
• restlessness
• rubbing area
• guarding
• crying

Many patients experience “Total Pain”
• Emotional Pain
• Intellectual Pain
• Spiritual Pain
• Inter-personal Pain
• Financial Pain
• Bureaucratic Pain
• Physical Pain
**Assessment**
- O: onset
- P: place(s)
- Q: quality
- R: relief; radiating (if chest pain)
- S: severity
- T: timing
- U: understanding
- V: value

**Onset...**
**Acute Pain** vs **Chronic Pain**
- Recent onset
- Usually caused by tissue damage with some degree of inflammation
- Finite or transient
- Associated physical signs
- Example: surgical pain or a radiation flare
- Persists beyond the usual course of an acute illness
- Usually beyond 3 months
- Adaptation occurs
- Usually a strong psychological component - consider Total Pain

**Place**

**Quality**
- Aching
- Burning
- Cramping
- Crawling
- Crushing
- Heaviness
- Icy coldness
- Intermittent
- Itchy
- Numbing
- Piercing
- Pins & Needles
- Pounding
- Pressure
- Radiating
- Sharp
- Shooting
- Sore
- Stabbing
- Stinging
- Tearing
- Tenderness
- Throbbing
- Tightness
- Tingling

What does this tell us?

**Mechanisms of Pain**

<table>
<thead>
<tr>
<th>Nociceptive (somatic)</th>
<th>Nociceptive (visceral)</th>
<th>Neuropathic</th>
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<tbody>
<tr>
<td>Caused by damage to the peripheral body tissues (skin, muscle, skeletal). Usually described as aching, throbbing or stabbing. Usually well-localized. Worse with movement.</td>
<td>Usually a result of hollow or solid organ damage. Described as deep, dull, aching, cramping. Often not well-localized.</td>
<td>Caused by direct injury to nerve or by compression or infiltration of nerve tissue (by tumour, radiation, chemo or surgery). Described as burning, tingling, crawling, pins &amp; needles, hot or cold, scratching.</td>
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**Place and Quality**

A man walks into the Emergency Room...

“A stabbing pain, you say?”
Relief

What works for the patient? And for how long?

Severity

Pain Scale: 0 to 10 (“no pain” to “worst possible pain”)

0 NO HURT
2 LIGHTLY HURT
4 HURTS
6 HURTS
8 HURTS
10 WORST

Timing

- What is the daily pattern?
- When?
- How long?
- Does it vary?

Understanding & Value

- What is the patient’s knowledge of the pain and its impact?
- What is the patient’s goal in relation to the pain?
- What does having pain mean to the patient and/or family?

Treatment

- Primary treatment involves trying to get to the root cause of the pain
- Secondary treatment involves managing the symptoms
  - Non-pharmacological treatment
  - Pharmacological treatment

Non-Pharmacological Techniques

- Non-pharmacological interventions offer powerful tools that reinforce descending inhibitory pathways (Kozak et al, 2009).

  - Massage
  - Music therapy
  - Art therapy
  - Acupuncture
  - Therapeutic touch
  - Meditation
  - Distraction

  - Authentic Presence
  - Companionship
  - Relaxation techniques
  - Counseling (for patient and families)
  - Alternative therapies
  - Spiritual care
Pharmacological Treatments

- World Health Organization (WHO): Analgesic Ladder
  - Start low go slow (unless pain crisis)
  - Adjuvant medications may be useful at any step
    - some adjuvants are for purposes other than pain management, but have shown to have an analgesic effect.

WHO Step Ladder

- Tolerance: limited by GI tolerance, max 2400 mg/day caution w elderly, renal failure
- Acetaminophen: limited efficacy too, limit to 3 to 4g/day
- Other NSAIDS:
  - Naproxen only bid dosing
  - Diclofenac more potent
- NSAID use is limited by GI intolerance (give a PPI) and renal function (caution in elderly)

WHO Step One

WHO Step Two

Examples of Weak Opioids include codeine and oxycodone in Canada
- Combined with acetaminophen:
  - Tylenol #3 (10 mg Codeine and 325 mg Acetaminophen)
  - Percocet (5 mg Oxycodone and 325 mg Acetaminophen)
  - Errant (Tylenol #3 with no caffeine)
- Tramadol (Tanalac)
  - Weak opioid and other mechanisms
- All constipating and have ceiling for efficacy and dose due to acetaminophen

WHO Step Three

Examples of Strong Opioids
- Morphine: oral (long or short acting) / injectable
- Oxycodone: oral only (long or short acting)
- Hydromorphone: oral (long or short acting) / injectable
- Fentanyl: long-acting patch
- Sufentanil: sublingual for incident pain
- Methadone: oral

Methadone

- Methadone is an excellent analgesic for chronic pain management (cancer and non-cancer) and is now commonly used purely for analgesic purposes
- Usually 3 times a day and titrated up every 3 days due to the long half life
- MDs require a special license which is relatively easy to get
- Need to know about long half life, interactions and potential for prolonged QT interval
(WHO Step 4-Intractable Pain – Rarely needed)

- Nerve Blocks
- Regional anaesthesia
- Lidocaine infusion
- Ketamine
- Epidural
- Intrathecal Pump

Which one to pick?

- **Opioid**: oral morphine was the gold standard, now evidence that morphine = hydromorphone = oxycodone at equianalgesic doses
- **Available Route**: Oral, topical, sublingual, rectal, subcutaneous, intravenous (order of preference)
- **Pain syndrome**: Some evidence shows neuropathic pain best on oxycodone or methadone

When to give

- If occasional pain, PRN dosing may be sufficient
- If constant or regular pain, around the clock dosing is needed:
  - For short acting opioids, q4h dosing
  - Start low if patient opioid-naïve, frail, elderly or has kidney failure
  - Goal is maintain dose in therapeutic window and prevent pain
  - Have a breakthrough dose available to achieve better pain control (q1h PRN)

What dose to pick?

Therapeutic window

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Plasma concentration

Cmax

Toxicity level

Minimally effective concentration

Time
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Breakthrough and Incident Pain

- **Breakthrough Pain**: comes on suddenly for short periods of time and is not alleviated by the patients normal pain meds

- **Incident Pain**: pain associated with a specific activity such as walking, turning, lifting, coughing, and deep breathing. This pain can be anticipated.

“Breakthrough Dose”

- Could be used for adequate dose-finding or titration.
- Could mean an extra dose to cope with a short-lived increase in pain intensity, for example when weight-bearing on a hip with metastatic cancer.
- Could be “end of dose” failure

- In general, start with approximately 10% of the total daily dose if using the same opioid. May need to be higher.
- Fentanyl / sufentanil breakthrough dose does not correlate well with background dose.
Incident Pain
Having a steady level of enough opioid to treat the peaks of incident pain...

...would result in excessive dosing for the periods between incidents

Pain
Incident
Incident
Incident
Time

Dose Finding
- use immediate release
- reassess after 24 hours
- when good pain control is achieved with Immediate Release dose consider long-acting (q8h or q12h)
- provide breakthrough dose 10% of 24 hr dose Q1-2H

Titrating Dose
if more than 3 breakthrough doses in 24 hrs

- Short acting regular dose
  - titrate Q24h
- Long acting regular dose
  - titrate Q48H
- Fentanyl Patch
  - titrate Q72H
- Methadone
  - titrate every 3 days

Adjuvants – for Neuropathic Pain

- Often used along with an opioid medication
- Examples:
  - tricyclics
  - anti-convulsants
  - steroids
  - non steroidal anti-inflammatory drugs (NSAIDS)

“Cannabinoids”

Consider for patients:
- With complex neuropathic pain who have not responded to opioids + adjuvants
- For patients already using marijuana with observed good effects

Side Effects: Finding the Right Balance

- constipation
- nausea +/- vomiting
- drowsiness
- lack of appetite
- confusion/mental clouding (delirium)
- itchiness (pruritus)
- difficulty with urination
- diaphoresis (sweating)
- muscle jerks (myoclonus)
- dry mouth
- respiratory depression

*all are treatable or preventable
Constipation!
- Use of Opioids
- Dehydration
- Decreased food intake
- Decreased physical activity
- All contribute to constipation
- Constipation causes nausea, leading to more pain, leading to more nausea, leading to decreased food intake...

Constipation management
- Prevention better than response
- Education
- Adequate hydration
- Osmotic: Use polyethylene glycol (PEG) or lactulose, regular but flexible dosing
- Stimulant: Use senna-based protocol unless contraindicated as needed

Opioid Toxicity
- Signs/symptoms
  - Drowsiness, hallucinations, myoclonus, +/- pinpoint pupils
- Treat underlying cause
  - fluids
  - reduce dose
  - rotate opioid

Opioid Induced Hyperalgesia

Rotating Opioids
- May use Morphine Equivalent Daily Dosage (MEDD) charts to predict equivalent dose
- But be wary of suggested ratios: sometimes new opioid much better (or worse) than predicted by chart, especially methadone

Withdrawing Opioids
- When pain is managed by another method ie: nerve block, radiation...then consider decreasing opioid
- If patient only taking opioids for short period, i.e. one week, withdrawal should not occur if there is an abrupt stop
- If patient taking opioids for longer then one week taper dose

If pain is unrelieved... all systems are affected.
Barriers to good pain management
- Biases and fears of the healthcare professionals, patients and their families
- Lack of knowledge
- Lack of assessment
- Failure to consider ‘total pain’
- Confusion between psychological dependence and physical dependence
- Fear of side effects
- Fear of hastening death

Fear of Addiction
- A primary, chronic, neurobiologic disease, with genetic, psychosocial and environmental factors.
- 3 C’s
  - Craving/Compulsive use
  - Control – loss of
  - Consequences despite use
- Behaviours: drug seeking, doctor shopping, isolation from family and friends.

Pseudoaddiction:
- When pain is controlled, drug-seeking behaviour stops

Tolerance:
- Tolerance is physiological dependence not addiction.

Take home points...
- Pain is subjective and “unpleasant”
- Do a thorough pain assessment and consider Total Pain
- “Round the clock dosing” if in moderate to severe pain – always have a BT
- Consider adjuvant therapy and non-pharmacological interventions at all stages
- Avoid unnecessary delay in treating the pain
- Recognize medications will different effects on different people
- Evaluate relief and don't hesitate to make changes if needed

Questions?