PAIN MANAGEMENT

Katharine Jiricka, BA., BSP.
Pharmacy Operations Coordinator
Pharmasave Drugs (Central) Ltd.

In the Palliative Care Setting
DECLARATION OF INTEREST

SPONSORS
Pharmasave Drugs (Central) Ltd.
Affiliate Rubicon Health Solutions
END-OF-LIFE CARE

- Paradigm shift
- Use pharmacist and palliative care units as a resource

4 Rules:
1) Any symptom is as distressing as a patient claims it to be
2) Treatment should be openly discussed in the context of the patient’s wishes
3) Individualize choice and dose
4) Quality assessment and ongoing reassessment
Palliative process and drug coverage
Pain
WHO Ladder
Opioids
Neuropathic Pain
Bone Pain/Cannabinoids/Non-drug Options
The process

The Palliative Care Drug Program (PCDP)
- Forms
- Extent
- Formulary
- Exception Drug Status (EDS)

Saskatchewan Cancer Agency
PAIN - PREVALENCE

- An unpleasant sensory and emotional experience
- Common & often devastating
  - Advanced Cancer (85%)
  - AIDS
  - End-stage organ disease
  - Motor neuron diseases
- Multidimensional
- Functional impairment
Nociception/Nociceptors
- Present in skin, muscle, joints, and viscera
- Three general types:
  - A-fiber – Mediate the fast/pricking quality of pain
  - C-fiber – Mediate slower, burning quality of pain
  - Silent/Sleeping nociceptors

Sensitization

Plasticity

How drugs work:
- In most cases, blockage of peripheral nociceptor activity removes the “drive” for the experience of pain
PAIN - CLASSIFICATION

- By inferred underlying mechanism
  - Nociceptive – somatic, visceral
  - Neuropathic – dysesthesia, neuralgic, mixed
  - Central – (ie: post-stroke central pain)
  - Complex regional pain syndrome

- By location
- By severity
- By duration
- The idea of “Total Pain”
PAIN - CAUSES

- Disease itself
- Directly or indirectly
- Treatment of the disease
- Factors unrelated to the disease
PAIN - ASSESSMENT

- Comprehensive
  - Full history
  - Complete examination
  - Further investigation if necessary
  - Develop a strategy
    - Sites, causes, severity, impact

- Regular Screening/Reassessment
PAIN – BARRIERS TO EFFECTIVE CONTROL

- Health Professionals
- Patients & Families
- Health Systems
PAIN - MANAGEMENT

The Basic Principles

- By the ladder
- By the mouth
- By the clock
- With breakthroughs
- For the individual
- All aspects of suffering
- Monitor treatment efficacy regularly
- Identify/Treat underlying causes
THE WHO LADDER

Step 1 – non-opioid
Acetaminophen
Ibuprofen/Naproxen
ASA (pain 1-3)

Step 2 – mild opioid
Tramadol, Tramacet,
Oxycocet, (codeine, T3)
(pain 4-6)

Step 3 – strong opioid
Morphine, hydromorphone,
oxycodone
Fentanyl, methadone
(pain 7-10)

**Meperidine (Demerol) not recommended**
Morphine, Hydromorphone, Oxycodone, Fentanyl, Methadone

Alter the quality of pain perception in the brain

Initiating an Opioid:
- Inform patients and address concerns
- Select a strong opioid for regular dosing
- Select between short-acting vs. long-acting
- Select an appropriate route of admin
- Determine appropriate starting dose for by the clock dosing
- Add a rescue/BTD prn (usually Q1H prn)
- Prevent/manage opioid side effects (constipation!)
- Titrate the dose if necessary
OPIOIDS – RELATIVE STRENGTHS

- Morphine = 1
- Codeine & Tramadol = 0.15x
- Oxycodone = 1.5x
- Hydromorphone = 5x
- Fentanyl = 100x
- Methadone = ~10x*

- PO to SC equianalgesic dose: ~2:1 (10mg PO morphine = 5mg SC morphine)
- PO to IV equianalgesic dose: ~2-3:1 (10mg PO morphine = ~3mg IV morphine)
  *Applies to hydromorphone and oxycodone as well*

- Onset of PO, IR: ~20-30min
- Onset of IV, SC: ~2-10min
Morphine sulphate, Statex, MS Contin, Kadian, Avinza

Naturally occurring alkaloid of opium derived from the poppy plant

Strong affinity for mu-opioid receptors

Half-life:
- IR: 2-4hrs, peak effect 1hr
- Kadian: 11-13hrs, peak effect ~10hrs
- Avinza: ~24hrs, peak effect 30min, maintained for 24hrs
Hydromorphone, Dilaudid, Hydromorph Contin,
Works similarly to morphine
More potent
Always double check the order, dose and product selected!

Half-Life:
- PO IR: 2-3hrs, peak effect ~1hr, duration PO/IV 3-4hrs
- PO SR: ~11hrs, peak effect ~9hrs, duration ~13hrs
3476 health care workers completed knowledge assessment questions.

87.9% correctly identified hydromorphone 1 mg as approximately equal to 5 mg morphine.

Lowest scores related to pharmacologic properties, especially sustained release vs. immediate release.

Second lowest scores related to dose calculations, co-morbidities requiring lower doses, distinction between side effects and allergies.
Elderly male resident of a LTC home admitted to hospital. Current issues included infected leg ulcer, hypokalemia, hypotension, hematuria. Deemed palliative.

- Order for hydromorphone 0.2-0.4 mg SC q1h prn pain.
- Patient died 30 minutes after first dose administered.
WHAT HAPPENED?

- Ten-fold overdose
- Patient had received 4 mg hydromorphone SC instead of 0.4 mg
- 10 mg/mL vial used to prepare dose
- 0.4 mL instead of 0.04 mL

Contributing factor:
- Availability of hydromorphone 10 mg/mL vials in patient care area
Duragesic (transdermal patch)
Binds to opioid receptors at many sites in the CNS
**Transdermal patch for stable, non-fluctuating pain**
**NOT for opioid-naïve patients!!**
Dose conversion charts
**Half-Life: 20-27hrs, highly lipophilic**
**Time to peak plasma 20-72hrs, reaches steady state after two sequential 72hr applications**

1) **Proper dose**
2) **Proper application** *Remove old before applying new!*  
3) **Proper disposal**
4) **Proper monitoring**
Strong affinity for mu opioid receptor
Also NMDA receptor antagonist
Conversion ratio
- The higher the previous opioid, the smaller the methadone dose
Prolonged duration of action, longer dosing intervals (Q8-12H)
Highly lipophilic
Half-Life:
- 12-120hrs
  - Long and unpredictable
Challenging characteristics, non linear, best done by experienced physicians
Similar SE to other opioids
Caused by the invasion of or traction on nerves

How it is different from nociceptive pain

Peripheral or central

Numbness, burning, or tingling, or a combination

Electric shock-like, prickly, itchy, cold, or pins and needles sensations

Managed with certain antidepressants and anticonvulsants

When to introduce an adjuvant analgesic
FIRST LINE ADJUVANTS

- Tricyclic Antidepressants (TCAs)
  - amitriptyline (Elavil) 25-50mg QHS, max 150mg/day
- gabapentin (Neurontin)/pregabalin (Lyrica)
- Other anticonvulsants
  - Carbamazepine (Tegretol)
  - Clonazepam
  - Phenytoin
- Corticosteroids

SECOND LINE ADJUVANTS

Newer anticonvulsants, lidocaine patch, GABA agonists like baclofen
BONE PAIN

- Localized bone pain
  - Palliative radiotherapy
  - NSAIDs
  - Corticosteroids
  - Palliative surgery
  - Palliative anesthesia (intrapleural, epidural, intrathecal)
  - Neurolytic procedures

- Disseminated bone pain
  - Bisphosphonates
  - NSAIDs
  - Corticosteroids
  - Palliative procedures
  - Hormonal therapy or palliative chemotherapy
Sativex (tetranabinex/nabidiolex)

- Buccal spray
- Used as adjunctive relief of advanced cancer pain & MS neuropathic pain/spasticity (patients >18)
- CI: allergy, severe heart, liver, or kidney impairment
- AE: mouth irritation, dizziness, increased HR, euphoric mood, drowsiness
- DI: disulfiram, ethanol, fluoxetine, sleep meds, may increase levels of amitriptyline and fentanyl
- Often use >8 sprays daily in cancer pain (usual 1 spray q4h)
NON-DRUG PALLIATIVE PAIN THERAPIES

- Palliative radiotherapy
- Palliative orthopaedic surgery
- Anesthetic procedures (nerve blocks, spinal blocks)
- Neurosurgical/interventional radiological procedures
- Other
  - TENS
  - Acupuncture
  - Heat/cold therapy
  - Massage
  - Relaxation therapies
  - Distraction therapies
  - exercise
You have the ability to help ease another person’s suffering

- There is no “one size fits all “in palliative pain management
- Look at the whole patient
- Reassess, document, double-check!!
- Patient comfort is paramount
- If you aren’t sure, ask!
- Use the pharmacist or palliative specialists as resources
REFERENCES