Current Pain Management Issues in Palliative Care

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PALLIATIVE PATIENTS
Conceptual Shift in Palliative Care

Diagram 1: Timeline showing the shift from life-prolonging treatment to hospice care.

Diagram 2: Timeline showing the shift from life-prolonging treatment to symptom management (palliative care) and then to family bereavement.
KEY PROCESSES TO ACHIEVE GOAL

• Assess and understand the suffering.

• Educate, develop and inspire staff and volunteers to deliver excellence in pain and symptom management, ethics, palliative and end of life care management.

• Create systems of care across the continuum that make it easier to deliver quality care and support staff and volunteers who deliver care.

• Create access for all those who are suffering.

Service Started in 1999 - Mercy Supportive Care
TOTAL BODY MODEL FOR SUCCESSFUL PALLIATIVE SERVICES at SJMO*

**Head:**
Knowledge, Competence

*Conscience:
“Know what to do and the right thing to do”

**Hands:**
Process, Systems

*Culture:
“How to do it so all are served”

**Heart:**
Compassion, Humanity

*Presence:
“Doing it with enduring love”

Adapted from the *Oxford Textbook of Palliative Medicine.*
MISSION OF OUR SERVICE

“We work together and with others to relieve suffering of body, mind and spirit and maintain the dignity of every person touched by our care.”

“Our goal is to ensure that everyone gets a chance....To live well until they die, in peace and surrounded by love.”
OUR RESPONSE

• Created a new culture, where suffering is not acceptable with focus on continuous improvements in patient care.
• Provide 24-hour pain, palliative and spiritual support for patients and their families.
• Provide team members (staff and volunteers) with the training and tools necessary to provide excellence in end of life care.
• Multiple entry points for receiving pain and/or palliative and/or hospice care.
St. Joseph Mercy Oakland Model of Supportive Care

- **Inpatient Consult Service**
  - Pain Management
  - Palliative Care

- **Infrastructure Support**
  - Policies/procedures
  - Education/Support
  - Quality Improvement

- **Outpatient Services**
  - Palliative Care Clinic/Case Management
  - Parish Nurse
  - Homecare/Hospice/Bridge

- **Inhouse Services**
  - Bereavement - NODA
  - Neonatal Loss/ED program
  - Sacred Space

- **Mentoring**
  - Systems/Hospitals
  - Communities
  - Clinicians
We are seen as the pain and palliative care team

• Reason for consultation:
  – 40% physical and psychological symptom management
  – 40% Clarification of goals, advance care planning, family support and communication
  – 20% End of life, withdrawal of life support and transition to hospice
The Continuum of Care

1. Inpatient Palliative Care Services
2. Partners in Care - Home Care Palliative Care
3. Hospice Care
4. Outpatient Supportive Care Services
Benefits of Early Intervention of Palliative Care

◆ Better pain/symptom control
◆ More likely to not have CPR at end of life
◆ Better quality in the last months of life
◆ Less initiation of chemotherapy in advanced stages of cancer
◆ Average of $2,200 less health care related costs
◆ Patients live an average of 2.7 months longer
◆ More likely to die at home

Harvard Oncology Group Study: Temel, Jackson and Dahlin
Pain Issues with Palliative Patients

• Chronic Pain Patients are dying
• Where people die
• Assessing and Engaging
• Opioids – efficacy and safety
• Consider other coanalgesics/adjuvents
Scope of the Problem

100 Million in U.S. with Chronic Pain

- 42% with pain lasting over one year
- 33% report pain as disabling
- 63% have seen primary care physician for help

From Scope of Pain Course – Boston University

$600 Billion Annual Costs

- Healthcare expenses
- Lost income
- Lost productivity

American Academy of Pain Medicine www.painmed.org
Institute of Medicine. 2011 Relieving Pain in America. Washington DC
Each person is sacred
Where people die – Michigan  n = 87,424 (% of deaths displayed)

- Hospital: 46
- Extended Care Facility: 27
- Home: 24
- Other: 3
- Unknown: 1

46
27
24
3
1
Assessment and Engagement

It’s not just “what’s your number?”
Its connecting, accepting, understanding and caring and building trust …
Words that Engage, Assess, set reasonable expectations and Care

• “I am so sorry you are so miserable”
• “Please help me understand…”
• “We are going to do everything we can to make the pain tolerable and make sure you are safe”
• “What helps you the most?”
• “Is what we are doing helping at all?”
• “We aren’t likely going to make it perfect – but we are going to keep trying to make it tolerable”
• “The best pain management happens over time and we will keep working at it and do everything we can to safely and effectively manage it.”
• “The goal today is: ____________”
• “I am going to be with you – we are connected”
Opioid Choices with Examples

**Full mu agonists**
- Morphine, Oxycodone, Hydrocodone, Hydromorphone, Fentanyl, Methadone, Oxymorphone

**Partial mu agonist**
- Buprenorphine

**Dual mechanism opioid analgesics**
- Tramadol, Tapentadol

**Mixed agonist/antagonists**
- Pentazocine

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Morphine

- The “Gold” standard – helpful for nociceptive and neuropathic pain
- IV to PO =1:3
- Will accumulate in renal failure
- Sublingual(SL) Morphine uptake is slow and unpredictable – most effect of giving SL is from trickling down GI tract.
- Hydrophilic so not a good choice to put in creams or patches – will not go through skin.
- IV – PO – Rectal best routes
- Oral peak – 30-60min, half-life 3-4 hours
Hydromorphone (Dilaudid)

- Much more potent than Morphine
  - 1.5mg IV dilaudid = 10mg IV Morphine
- IV to PO =1:3 or 5
- Fewer reported side effects than Morphine
- Helpful for nociceptive and neuropathic pain
- Better choice for patients in renal failure
- Oral peak – 30-60min, half-life 2-3 hours
- Most common drug that is “Narcan-ed” in hospital
- Expensive – has high diversion value
Fentanyl

- Helpful for nociceptive and neuropathic pain
- Transdermal in a patch, should not be started unless patient has already been on opiates (mcg/hour) begins effect in 6-12 hours and is changed every 3 days but for some people (almost 20%) will need to be changed in 2 days.
- IV version – Sublimaze – peaks in 2-5 minutes and half-life less than 1 hour (also given spinally)
- No oral version
- Transmucosal (sucker) Actiq - rubbed on inner aspect of cheek, effect begins within minutes. (Very High dose (200/400/800 mcg) – cannot be used in people who have not been on previous high dose continuous opiate medication.
- Fentanyl Patch is very expensive and insurance coverage varies
Oxycodone

- Helpful for nociceptive and neuropathic pain
- No IV version
- Most equivalent studies report oxycodone is more potent than Morphine OXY 20 = MOR 30.
- May have less nausea and vomiting side effects than morphine
- Short acting opiate combined with Acetaminophen = Percocet; also comes not combined with Acetaminophen – and used for a short acting opiate
- Oxycontin is the timed released version and is no more addicting than any other opiate
- High Diversion value
Methadone

- Helpful for nociceptive and neuropathic pain - may bind with NMDA receptor so can be additionally useful in neuropathic pain
- Long Acting: Half-life is 2-5 days and conversion from other opioids is highly variable (tricky to dose) Dosing requires experience.
- Much less costly than all other opiates and generally better tolerated.
- High doses (>100mg) may prolong QT interval (Increased risk of sudden death)
- Many drugs effect metabolism of methadone (steroids, Phenytoin, SSRI’s and others)
- Oral or IV
- Starting Dose: 2.5mg to 5mg BID
Hydrocodone

• Helpful for primarily nociceptive pain
• Most commonly prescribed pain drug in US
• Found in Vicodin, Lortabs, Lorcets, and Norco.
• Always combined with a non-opiate (Acetaminophen, aspirin or Motrin)
• No IV version or long acting version
• Oral dose equivalent to morphine 1:1.
• The non-opiate limits the amount of drug that can be used without end organ toxicity (Preparations with high acetaminophen dosing has led to liver toxicity and likely will be removed from market.)
Oxymorphone

- Oral opiate only – 10mg Opana = 30mg Morphine
- Instant release – Opana: 5 and 10mg
- Extended release - Opana ER: 5, 10, 20, and 40mg
- Extended release cannot be crushed
- Effect similar to morphine – just more potent –
- Expensive
Tramadol (Ultram)

- Helpful for nociceptive and neuropathic pain.
- Dual Mechanism opiate - One tenth the potency of Morphine, not a controlled substance also Serotonin and NE reuptake inhibitor
- Potential for dependence, withdrawal possible after abrupt cessation.
- Caution with SSRI’s – potential serotonin syndrome
- May decrease seizure threshold and cause seizures
- Renal and Hepatic metabolism
- Overdose can cause respiratory depression and/or coma

Dosing: Start 25 to 50mg QID, titrate slowly
Max 400mg/day
(Tapentadol (Nucynta) is very similar except controlled substance)
Codeine

- Weak Analgesic, good antitussive and good antidiarrheal agent
- 200 po codeine = 30 mg of po morphine, but rarely prescribed over 60mg/dose
- Combined with non-opiates usually
- Parenteral (SC, IM) use is rare
- Some humans do not have the liver enzyme (CYP2D6) and have no effect from codeine
- Rarely used in palliative care
Opioid Safety and Risks

**Allergies**
- Rare

**Organ Toxicities**
- Rare
  - Suppression of hypothalamic-pituitary-gonadal axis
  - >50 mg (MSO₄ equivalents) assoc. with 2x increase fracture risk

**Adverse Effects**
- Common
  - Nausea, sedation, constipation, urinary retention, sweating
  - Pruritis (histamine release)
  - Respiratory depression – sleep apnea

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## Managing Opioid Adverse Effects

<table>
<thead>
<tr>
<th>Condition</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea and vomiting</td>
<td>Usually resolves in few days, antiemetics, switch opioids</td>
</tr>
<tr>
<td>Sedation</td>
<td>Decrease dose</td>
</tr>
<tr>
<td>Most during initiation</td>
<td></td>
</tr>
<tr>
<td>or change in dose</td>
<td></td>
</tr>
<tr>
<td>Constipation</td>
<td>Senna laxatives, bowel stimulants, switch opioids; avoid bulking agents</td>
</tr>
<tr>
<td>Most common and</td>
<td></td>
</tr>
<tr>
<td>should be anticipated</td>
<td></td>
</tr>
<tr>
<td>Pruritis</td>
<td>Switch opioids, antihistamines</td>
</tr>
<tr>
<td>Urinary Retention</td>
<td>Switch opioids</td>
</tr>
</tbody>
</table>

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Managing Opioid Side Effects

Opioid induced Delirium:

- Vivid Dreams
- Nightmares
- Patient knows he is confused or hallucinating
- Closes his eyes and sees hallucinations
- Very different from other types of confusion/delirium.

Typically need to reduce or change opioid
# Opiate Conversion

<table>
<thead>
<tr>
<th>Name</th>
<th>Oral</th>
<th>IV/SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>30mg</td>
<td>10mg</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>7.5 mg</td>
<td>1.5mg</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>20mg (30mg)</td>
<td>none</td>
</tr>
<tr>
<td>Codeine</td>
<td>200mg (not recommended)</td>
<td>130mg</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>none</td>
<td>100mcg</td>
</tr>
<tr>
<td>Methadone</td>
<td>???</td>
<td>???</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>10mg</td>
<td>none</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>30mg</td>
<td>None</td>
</tr>
</tbody>
</table>
Other Co-Analgesics Commonly Used For Pain

- Local Anesthetics
- Bisphosphonates
- Calcitonin
- Capsaisin
- Calcium Channel Blockers
- Baclofen
- Anitdepressants
- Anticonvulsants
- Corticosteroids
- NMDA antagonists
  - Katamine
  - Dextromethorphan
Local Anesthetics

• **Lidocaine Infusion**
  - More effective in neuropathic pain but can be used for all pain syndromes. Starting dose 0.5mg-2 mg/kg per hr IV or SC. Some studies demonstrate long-lasting pain relief even after drug has been stopped. Need to decrease opioids when starting. (Ferrini, Paice, 2004)
  - Can try Mexiletine 150mg TID for po option
  - Side effects: lightheadedness, dysrhythmias

• **Lidocaine Patch (Lidoderm®)**
  For neuropathic pain, discrete pain syndromes (post-herpetic neuralgia, proximal radicular pain, post-traumatic neuropathy)
  - Applied on 12hrs off 12 hours, Max 3 patches per affected area
  - Expensive
Bisphosphonates and Radiopharmaceuticals

- Pamridronate (Aredia) 60-90 mg over 2 hours every 4 weeks – pain effects usually within 2 weeks
- For Osteolytic bone pain from metastatic bone disease and multiple myeloma
- Zoledronic acid (Zometa) (similar to pamridronate) – more expensive option but can give IVP
- Strontium –89 and Samarium –153 – caution with thrombocytopenia and should have life expectancy > 3 months
- Transitory pain flare may accompany all of the above – but usually resolves quickly
Calcitonin – 100-200 IU/day via SC or nasal for bone pain and or neuropathy

Capsaicin – Topical cream believed to relieve pain by inhibiting the release of substance P. Useful with pain associated with postmastectomy syndrome, postherpetic neuralgia, and postsurgical neuropathy within cancer. Also found helpful for musculoskeletal pain.

Dose: 0.025% applied 3 to 5 times daily (Max is 0.075% applied 3 to 5 times daily.)

Initial burning causes many to stop therapy.
Calcium Channel Blockers and Baclofen

Calcium Channel Blockers – Nifedipine 10mg TID – for ischemic pain, neuropathic pain and smooth muscle spasms

Baclofen – 10mg QD up to QID, may be helpful for spasm associated pain. Side effects can commonly occur after 60mg/day include weakness, confusion and/or halucinations.

Also used in intrathecal pumps for spasticity from multiple sclerosis and spinal cord injury.
Antidepressants

Tricyclic antidepressants (TCAs) – inhibit norepinephrine and serotonin. Therapy for chronic neuropathic pain – especially burning pain.

Anticholinergic effects are the chief problems: (sedation, orthostatic hypotension, glaucoma worsening, urinary retention, cardiac dysrhythmias)

• Nortriptyline (Pamelor), Desipramine (Norpramin), Doxepin (Sinequan): 10-25mg/day (increase by 10-25 q 2-3 days) max <150mg/day.

• Amitriptyline (Elavil) losing favor due to higher side effect profile than new TCAs and Elavil should not be used in the elderly and

• Doxepin (Sinequan) should not be dosed higher than 60mg in elderly.

All TCA’s are sleep enhancing, mood elevating; but days to weeks to pain effect for some.
Antidepressants

Newer Atypical Antidepressant drugs for neuropathies

- **Venlafaxine** (Effexor) less effective than TCAs but also less side effects. Start 37.5 to 75mg BID, Max 225mg/daily (common is 150mg daily)

- **Duloxetine** (Cymbalta) – also used for fibromyalgia. Start 20-30mg in AM and Max is 60mg BID (Side effects: nausea, sedation, dry mouth and dizziness)

(Both Effexor and Cymbalta may not be covered by insurance and/or need prior authorization)

SSRI’s not generally been proven helpful for peripheral neuropathic pain
(except Fluoxetine (Prozac) for fibromyalgia)
1. Carbamazapine (Tegretal) 100mg q day or tid (trigeminal neuralgia) May cause diplopia/dizziness or nausea. Need to periodically check CBC for aplastic anemia.
2. Gabapentin (Neurontin) start 100mg Q 8hrs or 300mg at bedtime with effective doses up to 3600mg/day
3. Pregabalin (Lyrica) similar to Gabapentin. Except can escalate dose much more quickly, start at 75mg daily with max doses 150-300mg and is much more expensive.

For Gabapentin and Pregabalin: Most common medication used as adjuvant pain medication for neuropathy - Common adverse effect – sedation – usually become tolerant to effect, also may cause weight gain, fatigue and nausea - dosing decreased or stopped if renal failure.

Indications: Neuropathic pain – especially shooting pains although many neuropathic syndromes have been documented to have relief with gabapentin/pregabalin (i.e. thalamic pain, SC injury, cancer pain, restless leg syndrome and back pain)
Corticosteroids

- Steroid hormones produced in the adrenal cortex
- Synthetic steroids are used in joint pain, bone pain and pain from inflammation and pain from malignant intestinal obstruction.
- Decadron has the least potential for Cushing’s syndrome – starting dose is 2-10mg q day (long half life makes it possible to daily dose) may go up to 16-24mg/day and can go up to 100mg/day with severe pain crisis. Prednisone starting dose is 15-30mg tid, qid.
- Side effects – steroid psychosis, dyspepsia/ulcer, mask infection, long term – Cushing’s syndrome
- Cannot be stopped abruptly my cause adrenal crisis.
NMDA Receptor Antagonists
Ketamine/Dextromethorphan

N-methyl-D-aspartate receptor antagonist (NMDA)
Not for routine use with pain/primarily used in palliative settings when other methods fail.

Ketamine:
• Used as an anesthetic for years
• Case reports show effectiveness for neuropathic pain when traditional and invasive techniques fail
• Starting IV dose 150mg qd (0.1-0.2mg/kg) with reduction of opioid achieved or 10-15 mg q6 increasing by 10 mg dose each day
• Appears to have a synergistic effect with opioids

Dextromethorphan – oral NMDA agent
side effect confusion, may be helpful for pain although evidence is unclear.
Your Questions?
“If we know that pain and suffering can be alleviated, and we do nothing about it, then we ourselves become the tormentor.”

Primo Levi