

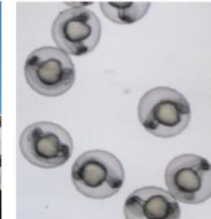
Palliative Medicine and End of Life Pain Management

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UAB MEDICINE



Disclosures

None

Objectives

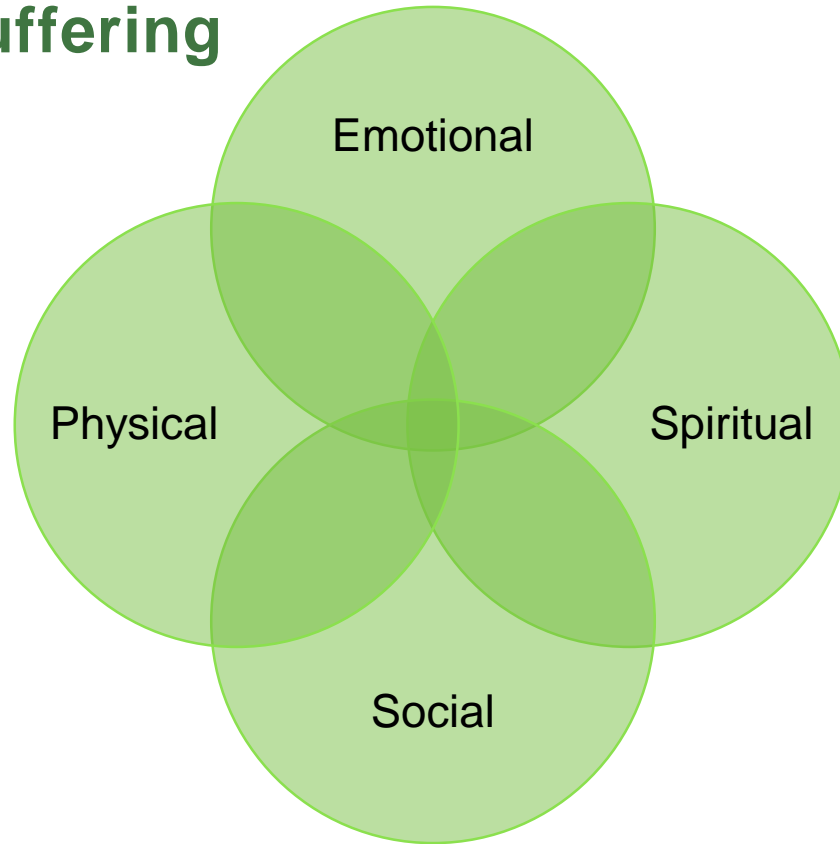
- Recognize causes of suffering in seriously ill patients
- Demonstrate knowledge of a pain assessment
- Demonstrate knowledge of initial pain treatment approaches

What is Palliative Care?

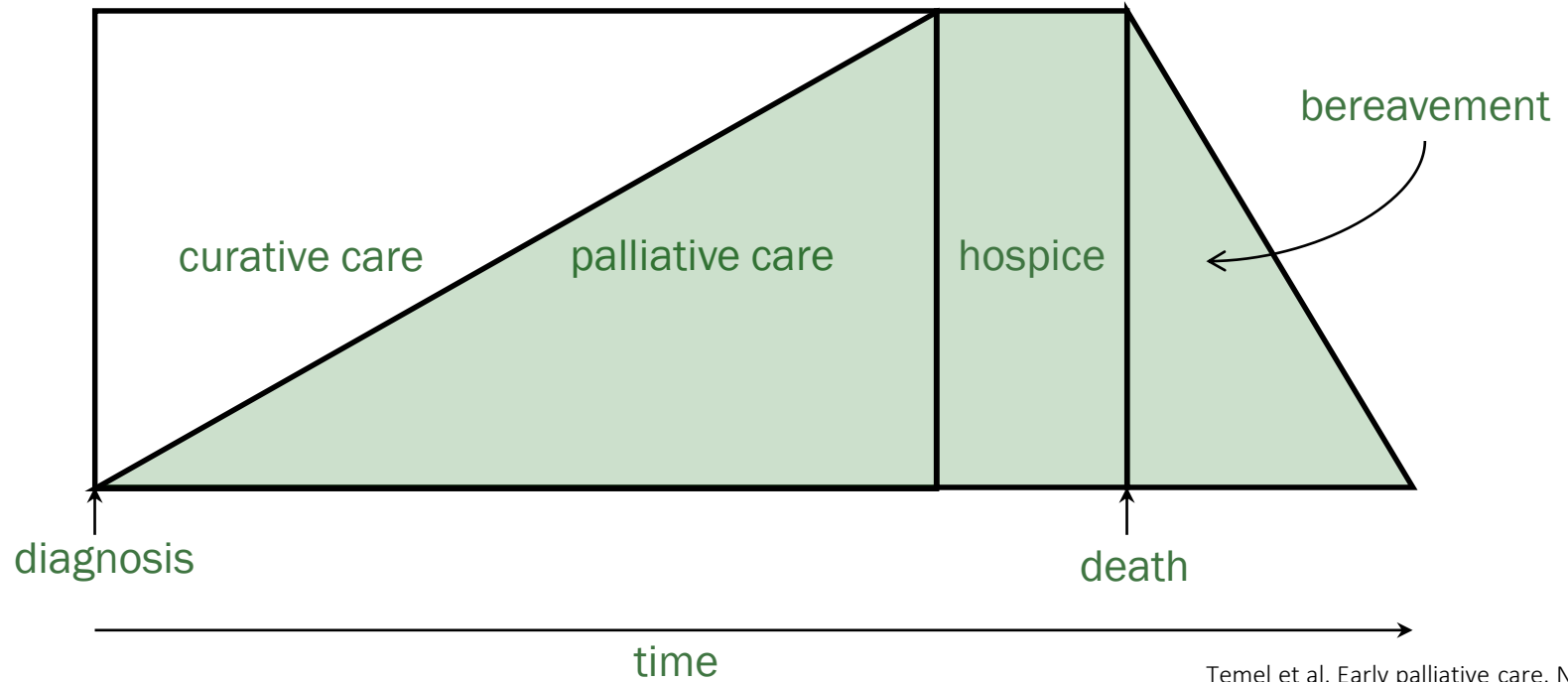


“Palliative care is an approach that improves the **quality of life** of patients and their families facing life-threatening illness, through **prevention and relief of suffering** by means of early identification and assessment and treatment of pain and other problems, **physical, psychosocial and spiritual.**”

Domains of Suffering



Parallel Palliative Care



Temel et al. Early palliative care. NEJM 2010

How can Palliative Care help patients?

- Expert treatment of pain and other symptoms
- Close, clear communication
- Help with navigating the healthcare system
- Guidance with difficult and complex treatment choices
- Detailed, practical information and assistance
- Emotional and spiritual support for patients and their families through our interdisciplinary team members

What is Hospice?

Hospice

- **Defined as an insurance benefit**
- **Focused on comfort & quality of life**
- **Required prognosis of ≤ 6 months** (certified by 2 physicians)
 - Delivered in the “home”
 - Provided as an interdisciplinary team

What services does Hospice provide?

- Physician services (if that physician is part of the hospice team)
- Nursing care
- Medical appliances and supplies
- Drugs related to the terminal illness
- Short respite care
- Home health aide and homemaker services
- Physical therapy, occupational therapy, and speech/ language pathology services
- Social services, including bereavement
- Nutrition and dietary counseling

“Improving Care for the End of Life”, Joanne Lynn et al.

So what's the difference?

Palliative Care

- Is a ***philosophy*** of care similar to hospice, that may include aggressive interventions with the intent not to cure, but to relieve symptoms such as pain, nausea and dyspnea.
- Is delivered in a variety of settings, including acute inpatient, as well as in clinics, long-term care facilities, etc.
- Can be offered *throughout the entire course of the illness*, **not just the last six months**.
- Can ***include supportive care*** of patients who are currently undergoing curative treatments.

Pain at End of Life

Pain

- Prevalence: 126.1 million people reported pain in last 3 months
- At least a 1/3 of patients with cancer describe pain as a distressing symptom
- Pain is associated with many other serious illnesses.
 - End stage heart failure, pain prevalence of 23-85%
- Substance use disorder and opioid misuse have complicated management of pain.
- Older adults (>65 years old) prevalence of chronic joint pain ~ 40%; chronic neuropathic pain 10-52%

Domenichiello AF, The silent epidemic of chronic pain in older adults
Alemzadeh-Ansari. Chronic Pain in Chronic Heart Failure: A Review Article.
Nahin RL. Estimates of pain prevalence and severity in adults.

Pain Assessment

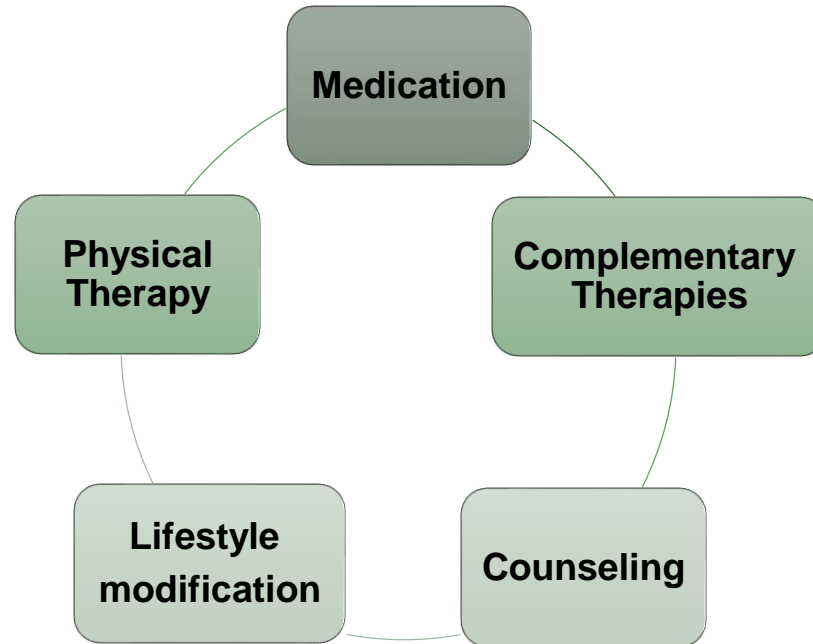
Detailed history

- Location of pain
- Character of pain
- Severity and Quality
- Timing of pain
- Past Surgical History
- Psychosocial History
- History of Trauma

Other data to consider:

- Medication List- including opioid history
- Labs and Imaging

Pain Management



Management Approaches

Non-Pharmacologic

- Education
- Psychological Support
- Physical Modalities
 - Physical Therapy
 - Acupuncture
- Lifestyle modifications

Pharmacologic

- Antidepressants
- Anticonvulsants
- Opioids
- Topical Agents
- Combo

Psychotherapy

Cognitive Behavior Therapy

- problem-focused, goal-directed
- Learn to recognize contributors to their thoughts and behaviors from environment and to modify their response

Mindfulness

- “Focus on teaching a nonjudgmental and accepting approach to awareness of the present moment”

Physical Therapy

- Utilizes therapeutic exercise, manual manipulation, trigger point and myofascial release
- Patient education and empowerment
- Biofeedback and muscle coordination training
- Acupuncture/TENS (next slide)

Complementary Therapies

Acupuncture

- Mechanism of action is unclear
- Meta-analyses show benefit in many pain conditions

Neuromodulation

- Peripheral electrical stimulation to alter nerve conduction
 - Below pain threshold to stimulate sensory nerves
 - Alter the pain cycle
- TENS (Transcutaneous electric nerve stimulation)
- Scrambler Therapy

Lifestyle Modifications

Diet

- Numerous diets have been researched in chronic pain, +/- Benefit
- Consider if concurrent GI symptoms
 - Gluten free diet possible improve pain in fibromyalgia
 - FODMAP (low fermentable oligosaccharides, disaccharides, monosaccharides and polyols)
- Difficult to implement, recommend dietician involvement

Exercise

- Improvement in pain, quality of life, physical function, mood, and sleep
- Most evidence in fibromyalgia, some in IBS, headache, dysmenorrhea

Pharmacologic Therapy

Analgesia

- Non-opioid
- Opioid

Neuropathic Treatments

- Antidepressants
- Anticonvulsants

Tramadol



Non-Opioid Analgesics

Acetaminophen

Non-steroidal anti-inflammatories (NSAIDs)

- Ibuprofen
- Naproxen
- Meloxicam

Opioids

- Mu agonist
 - Peripheral, central and gastrointestinal sites
- Side effects: constipation, N/V, sedations, AMS, respiratory depression (especially w/ other agents)
- Long term effects include hypogonadism
- Literature supports use in cancer pain
- Very little data in other conditions
- R/B/A discussion needed for other conditions

Opioid Initiation

- Opioid naïve, normal adult
 - 2-5 mg of Morphine IV
 - 5-15 mg Morphine PO
 - Can use any other short acting opioid
 - Oxycodone, Hydromorphone, Hydrocodone
 - Generally, little evidence for benefit of acetaminophen-containing combination products
 - Opioid tolerant
- See how much the patient was using/is using
 - Make appropriate recommendations based on tolerance.

Principles of Opioid Management

Adult already on opioids

- Calculate total opioid intake over last 24 hours
- 10-20% of 24 hour dose as a bolus dose
- Severe pain
 - May increase frequency
 - Still need to titrate and monitor patients

Principles of Opioid Management

Medication	PO	IV/SQ
Morphine	30mg	10mg
Oxycodone	20mg	N/A
Hydromorphone	7.5mg	1.5mg
Fentanyl	N/A	100mcg

Route	Tmax	Duration
IV	15 minutes	1 hour
SQ	30 minutes	2 hours
PO-IR	60 minutes	4 hours
PO-SR	2.5 hours	12 hours

Common Opioid Side Effects

Sedation

- Often resolves when dose stabilizes
- Can consider cutting dose if pain stabilized
- Rotate to another opioid
- Consider another route of administration
- Consider methylphenidate or corticosteroids

Nausea

- Occurs frequently (up to 60%) initially, some agents more often than others
- Consider antiemetics or rotation

Common Opioid Side Effects

Constipation

- Patient do not develop tachyphylaxis
- Start stimulants early
 - Avoid docusate alone or fiber/bulk agents
 - Senna (+/- Docusate)
 - Bisacodyl PR/PO
 - PEG, sorbitol or lactulose
 - Methylnaltrexone, or other similar agents

Delirium

- Rotate to another opioid
- Use another agent concurrently with a different mechanism

A few helpful facts

Morphine

- Caution in renal insufficiency
- Metabolites may be associated with neurotoxicity
- Allergy not common, but itching from mast cell release common
- Nausea and sedation common, but usually get better

Hydromorphone

- May be preferable in renal failure, elderly, no "active" metabolites

Fentanyl

- Transdermal- Suboptimal choice in pts w/ cachexia, dehydration, fever
- Intravenous- Very short half life, avoid long intervals between doses

Opioid Prescribing

- Opioids not 1st line or routine for chronic pain
- Establish/measure goals for pain/function
- Discuss R/B/A
- Use IR for starting, start low/go slow
- Prescribe no more than needed
- Don't use ER/LA for acute pain
- Evaluate risk factors for opioid-related harms
- Follow-up and re-evaluate risk of harm; reduce dose or taper/discontinue if needed
- Check PDMP with every prescription
- Urine drug testing to identify Rx's and undisclosed use
- Avoid concurrent benzos
- Arrange for opioid use disorder treatment /if needed

Neuropathic Pain

- “Arises as a direct consequence of a lesion or diseases affecting the somatosensory system”
 - International Association for the Study of Pain
- World prevalence of 3-8% general population (EBPM text)
- Prevalence higher in patients with cancer 19-39%
- Common disease processes:
 - Diabetes
 - Postherpetic neuralgia
 - HIV neuropathy
 - Trigeminal neuralgia
 - Chemotherapy induced peripheral neuropathy

Classification

Location

- Central (brain or spinal cord)
- Peripheral (peripheral nerves, plexus, dorsal root ganglion or root)

Symptoms/Signs

- Pain Quality
- Sensory Loss
- Sensory Gain

Etiology

- Trauma
- Ischemia/hemorrhage
- Inflammation
- Neurotoxic
- Neurodegeneration
- Paraneoplastic
- Metabolic
- Vitamin deficiency
- Cancer

Anticonvulsants

Gabapentin and Pregabalin

- Calcium channel $\alpha 2$ - δ
- Diabetic polyneuropathy, PHN, and mixed neuropathic pain
- Mimic GABA and bind receptors, reducing calcium influx
- Resulting in decrease release of stimulatory glutamate, norepinephrine and substance P
- SE: dizziness, dry mouth, difficulty concentrating

Antidepressants (TCA, SNRI)

TCAs- nortriptyline, imipramine, desipramine

SNRIs- venlafaxine, duloxetine

- block cholinergic, adrenergic, histaminergic, and sodium channels
- Inhibit serotonin and norepinephrine reuptake
- Pain relieving effect is independent of antidepressant effect
- Side effects based on receptor activity- cardiac conduction abn, urinary retention, dizziness, nausea, orthostatic hypotension
- Check EKG with TCAs
- SSRIs provide little to no analgesic effect- not recommended

GRADE classification	Drugs	Daily dosages and dose regime	Recommendations
STRONG FOR	Gabapentin Gabapentin ER/enacarbil Pregabalin SNRIs duloxetine/venlafaxine TCAs	1200–3600 mg TID 1200–3600 mg BID 300–600 mg BID 60–120 mg QD (duloxetine);150–225 mg QD (venlafaxine ER) 25–150 mg qd or BID	First-line First-line First-line First-line First-line ¹
WEAK FOR	Capsaicin 8% patches Lidocaine patches Tramadol BTX- A (SC) Strong opioids	1–4 patches to the painful area for 30–60 min every 3 months 1–3 patches to the painful area for up to 12 hours 200–400 mg BID (tramadol ER) or TID 50–200 units to the painful area every 3 months Individual titration	Second-line (PNP) ² Second-line (PNP) Second-line Third-line ; specialist use (PNP) Third line ³
INCONCLUSIVE	Combination therapy Capsaicin cream Carbamazepine Clonidine topical Lacosamide Lamotrigine NMDA antagonists Oxcarbazepine SSRI antidepressants Tapentadol Topiramate Zonisamide		
WEAK AGAINST	Cannabinoids Valproate		
STRONG AGAINST	Levetiracetam Mexiletine		

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4493167/#!po=43.7500>

Tramadol

- Mixed Mechanism of action: Mu receptor agonist and SNRI
- Abuse liability between NSAIDs and opioids
- Withdrawal syndrome occurs with long term use
- Side effects: hypoglycemia, seizures, serotonin syndrome
 - Nausea, dizziness, dry mouth, abdominal pain

Pharmacologic Methods for Malignant Pain

- Opioids
 - Mainstay of therapy
- Corticosteroids
 - Dose, delivery, length of treatment often empiric
- Bisphosphonates
 - Cochrane Review 2002
 - Not recommended as 1st line, helpful as adjuvant
- Other agents
 - NSAIDs, Acetaminophen, calcitonin, etc.

Pain Interventions

- Appropriate patients to consider for referral
- Procedures that may be considered:
 - Trigger point injections
 - Sympathetic blocks



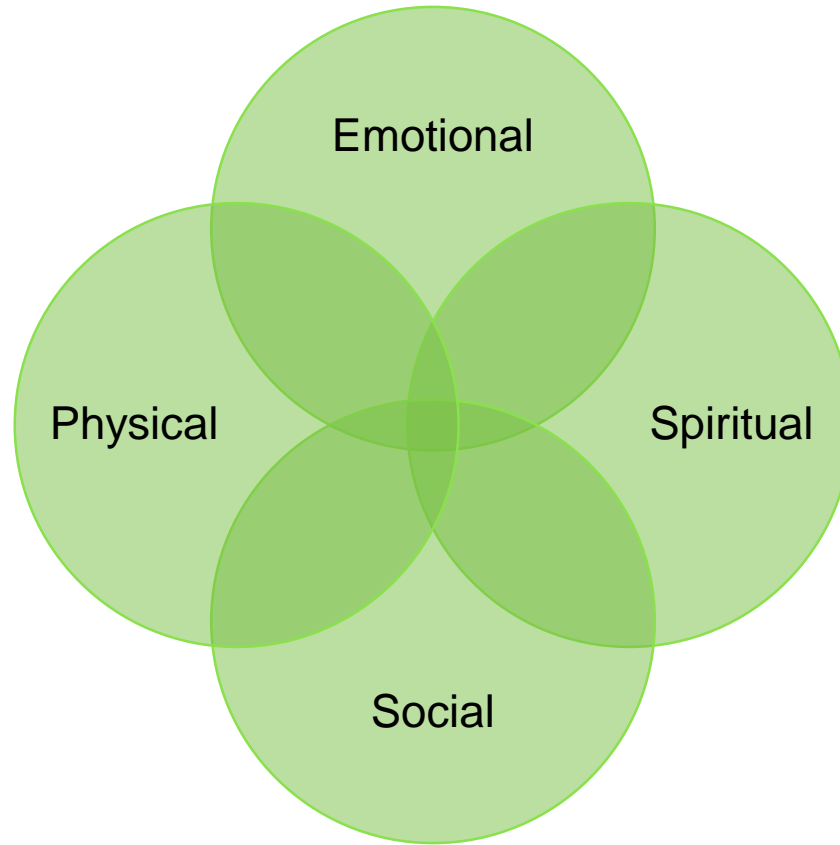
Trigger Point Injections

- Focal, hypersensitive areas within muscles, including abdominal wall or pelvic floor
- Palpable and painful, associated with referred pain
- Often component of myofascial pain conditions
- Local anesthetic injection (lidocaine or bupivacaine)
 - Effects outlast medication duration of action
 - Mechanism of benefit unclear
- Dry needling has also been used with benefit

Sympathetic Blocks

- Multiple techniques:
 - Anesthetic blocks: Lidocaine or Bupivacaine
 - Neurolytic blocks:
 - Chemical- alcohol or phenol
 - Destructive- thermal or radiofrequency ablation
- Side effects
 - Neurologic injury
 - Non-neural tissue injury
 - Not effective due to anatomical limitations in some patients (scar tissue)

Key Points



Thank you

For Questions: Ckezar1@uabmc.edu