Acute Cancer Pain: Approach and Barriers to Pain Management

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Disclosures: None

Objectives:

- Discuss a case involving under-treated cancer pain
- Discuss barriers and potential solutions to cancer pain management
- Review WHO guidelines for cancer related pain
- Review therapies for palliative pain management to include interventional pain management therapies

Defining Palliative Care

- **<u>WHO Definition of Palliative Care</u>**

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

https://www.who.int/cancer/palliative/

Case: Presentation and History

- 21-year-old male with stage 4 cancer was admitted through the Emergency Department with poorly controlled cancer related pain

- PMHx: Cancer with metastasis

- Pertinent Hx/Prior Treatment:
- Outpatient pain specialist, pain well managed on:
  - Fentanyl 100mcg/hr topical patch x 72 hrs
  - Morphine Sulfate Immediate Release (MSIR) 15mg po q4-6 hrs prn breakthrough pain

Case: History

- CC: Insidious onset of increasing abdominal pain and new onset low back pain with bilateral radiculopathy
- Pain prior to exacerbation: 1-2/10
- Pain score in ED: 6/10
- Vital signs stable, patient A & O x 3

Case: Course

- Upon admission, Fentanyl patch was d/c'd
- Inpatient orders: Morphine Sulfate 2-4mg IV q 4-6hrs prn pain
- No communication with outpatient pain specialist for medication and compliance history

Case: Course

- 24 hours post-admission, patient c/o intractable pain, rated 10/10
- Additionally, patient was experiencing chills, nausea and diarrhea
- Order placed for pain specialist consult

Case: Physical Exam

- VS: BP 180/90, Pulse 112, Respirations 20, Temp, oral 99.8F, 02 Sats 98%
- WDWN male in acute distress, pale, diaphoretic and tearful
- Remainder of exam difficult secondary to apprehension, guarding, with significant discomfort noted with gentle palpation of the lumbar spine

Case: Diagnostic Testing

- CT of the abdomen/pelvis & MRI of lumbar spine:
  - New areas of metastasis, including spine and liver

Case: Subsequent Treatment

- IV Morphine use was calculated and converted to appropriate Fentanyl patch strength
- Patient Controlled Analgesia (PCA) was initiated for breakthrough pain and as a bridge until Fentanyl patch reached therapeutic levels

Case: Subsequent Treatment

- Adjunct therapies initiated:
  - IV Toradol
  - PO gabapentin
  - Topical Lidoderm patches
- Order placed for hospice consult

Case: Subsequent Treatment

- Approximately 24 hours after renewal of Fentanyl patch and initiation of PCA, pain score was reduced to 6/10
- PCA was titrated accordingly and at 48hrs, the patient reported pain score of 2/10
- Patient was A & O, with stable vital signs and resolution of withdrawal symptoms

Case: Final Disposition

- Pain adequately controlled and no noted medication side effects
- Conversion from PCA to oral breakthrough pain medication
- Transfer shortly thereafter to outpatient hospice

Discussion

- <u>Pain Crisis:</u>
  - Pain that is intractable, uncontrolled, severe and causes significant distress to patient

- Significant numbers of patients report severe and debilitating cancer-related pain:
  - 70% of patients with cancer will at some point experience significant pain
  - 32% report of patients with cancer report poorly controlled pain during and after cancer treatment

Haumann J etal, 2017

Cancer Pain

- <u>Pain prevalence in patients with cancer:</u>
  - 39% of patients after curative treatment
  - 55% during anticancer treatment
  - 66% with advanced, metastatic disease
- Cancer pain severely impacts quality of life
  - Can result in multiple psychosocial issues

van den Beuken-van Everdingen MH, etal 2016.

Discussion

- Cancer pain treatment is a complex balancing act

- Confounding concerns for clinicians:
  - Opioid addiction
  - Opioid related deaths
  - Diversion

(Haumann J et al, 2017)

AAPA Guidelines for Ethical Conduct for the PA Profession

- States that Physician Assistants (PAs) must provide relief of physical suffering to patients who are terminally ill
- Guidelines support the concept that palliative pain management is not just essential at the end of life, but through the progression of the disease
- There is a need to identify obstacles to pain control in this population

https://www.aapa.org/wp-content/uploads/2017/02/16-EthicalConduct.pdf

Barriers to Cancer Pain Management

- Clinician Training and Experience
- Institutional Guidelines
- Societal Bias
- Comfort Level of Nursing Staff
- Patient Reluctance or Fear

Clinician Training and Experience

- Though recognition of the need for pain control measures has increased, many patients with cancer still experience undertreated pain

- Current estimates show that <20% of clinicians licensed to prescribe have had adequate training in the appropriate use of opioids

- Survey of PA programs in the US showed that a majority provided a maximum of ≤ two hours of content related to treatment of patients with cancer, to include palliative pain management

(Polansky M et al, 2016) Draft Report on Pain Management Best Practices: Updates, Gaps, Inconsistencies, and Recommendations. Provider education

Clinician Training and Experience

- Lack of provider knowledge translates across professions
  - Physician
  - Physician Assistant
  - Nursing

- Obvious benefit to patients when clinicians have adequate exposure to pain curriculum in training as well as through participation in CME activities

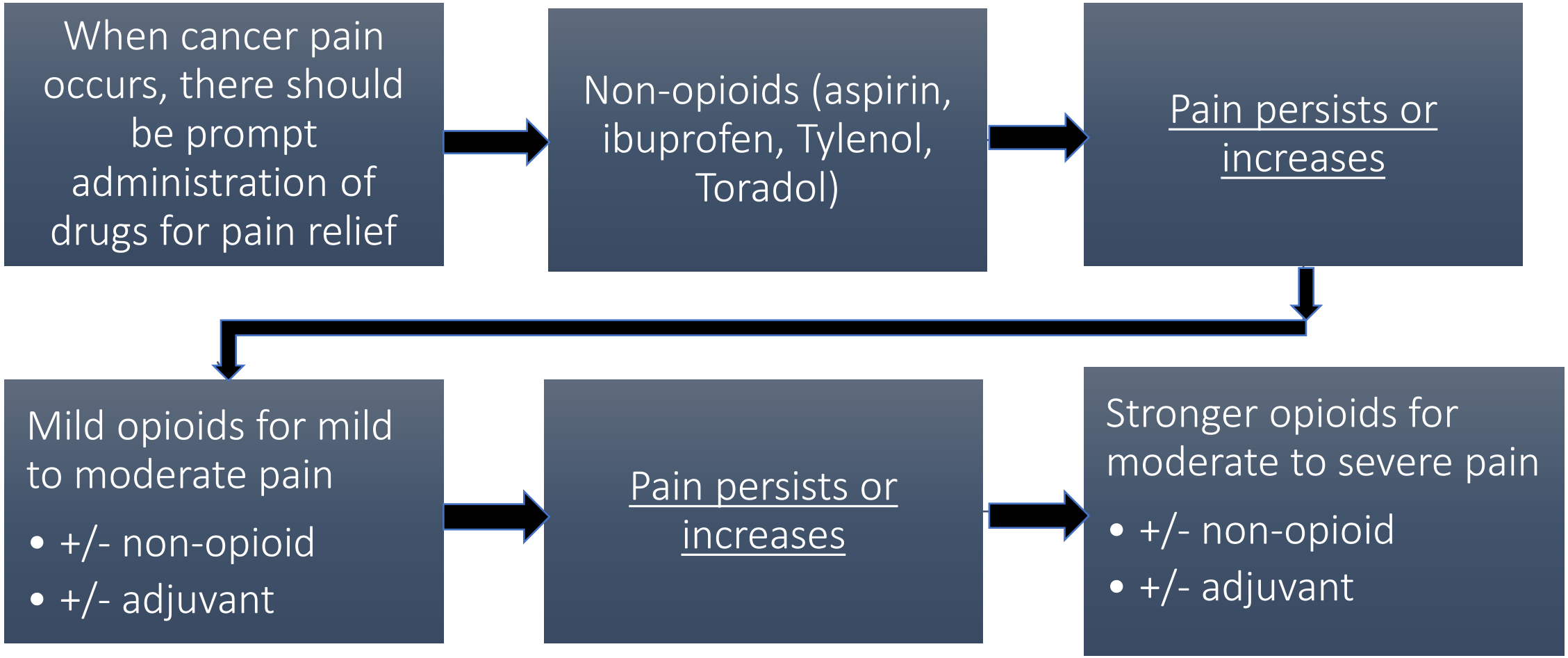
Potential Solutions

- Need for advances in pain education across all health-related programs

- World Health Organization (WHO) adult cancer pain ladder model:
  - Has been in place for many years
  - Highly effective when utilized appropriately
  - Many clinicians are unacquainted with it

- The ladder model, three step approach is effective in controlling cancer-related pain 80-90% of the time

World Health Organization. WHO's Cancer Pain Ladder for Adults. https://www.who.int/cancer/palliative/painladder/en/. Upated 2019



WHO Adult Cancer Pain Ladder Model

https://www.who.int/cancer/palliative/painladder/en/

WHO Adult Cancer Pain Ladder Model

- Medications should be given “by the clock” (q3-4hrs) vs prn pain
- Unfortunately, 20% of cancer-related pain is not relieved solely through use of the WHO pain ladder
- Interventional pain management, palliative radiation or surgery may be appropriate to provide further relief

(Wilson J et al, 2014) https://www.who.int/cancer/palliative/painladder/en/

Institutional Guidelines

- Joint Commission on Accreditation of Health Care Organizations (JCAHO) study on inpatient under-treatment of cancer pain noted multiple barriers:

- Lack of continuity of care
- Higher priority given to non-malignant pain
- Lack of involvement of pain specialists early in patient's course

The Joint Commission, Pain Management Standards – Hospital https://www.jointcommission.org/topics/pain_management_standards_hospital.aspx.

Solutions

- JCAHO Guidelines for Pain Management, updated 2018
- <u>Involvement of pain specialists:</u>
  - Advanced training in pharmacologic management of pain
  - Ability to perform interventional procedures for pain consult early!
- Extensive evidence-based literature supporting use of such interventional techniques as adjunct therapy for cancer-related pain

(Carlson CL, 2016) (Bhatnagar S et al, 2015)

Comfort Level of Nursing Staff

- Nurses play an important role in provision of pain control

- Barriers related to administration of adequate pain medication is directly proportional to:
  - Level of knowledge
  - Relationship with pain specialist or other prescribers
  - Their own attitudes regarding pain management

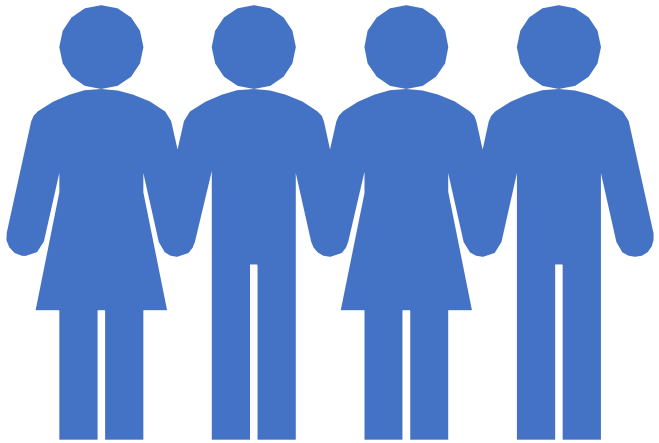
(Bartoszczyk DA, 2015)

Solutions

- Encouragement to stay abreast of current evidence-based best practices in pain management
  - CME activities in treating cancer-related pain

- Clinician and/or pain specialist role:
  - Foster trusting relationship
  - Provide education in palliative pain management

Societal Bias



- American Cancer Society Study (Stein KD, 2016):

- Inequalities occur in cancer pain management in inpatient/outpatient settings
- Occur most at the clinician level
- <u>Differences related to:</u>
  - Socioeconomic status
  - Ethnicity
  - Level of education
  - Type of cancer being treated

Stein KD, Alcaraz KI, Kamson C, Fallon EA, Smith TG. Sociodemographic inequalities in barriers to cancer pain management: a report from the American Cancer Society's Study of Cancer Survivors-II (SCS-II). *Psychooncology.* 2016;25(10):1212-1221.

Solutions

- Instruction in cultural competence in medical curriculum
- Recognition of personal bias
- Institutional monitoring

Patient Reluctance or Fear

- Patients may believe that cancer pain is inevitable and out of their control
- Personal belief systems can affect decisions
- Reluctance to use opioids for fear of addiction
- Family reluctance (influence)
- Difficulty in communicating pain needs to their clinician

Potential Solutions

- Education and counseling of patient AND family
- Recognizing that notion of healing and spirituality is important in context to patient culture
- Empowering patient by promoting/encouraging active involvement in their own care:
  - Setting realistic goals
  - Knowledge of risks and benefits
  - Knowing when to ask for help

Etiology of Cancer Pain

- Etiology of pain dictates treatment
  - Nociceptive
  - Neuropathic
  - Inflammatory

Types of Pain

Nociceptive:

- Activation of peripheral pain receptors, somatic or visceral
- Stretching of tissue or bony pain

Neuropathic:

- Results from damage to, pressure on or dysfunction of nerves, the spinal cord or brain
- Due to chemotherapy effect or direct tumor infiltration

Inflammatory:

- Release of chemical modulators in response to tissue damage

Nociceptive/Inflammatory Pain

- NSAIDs: Ibuprofen, Toradol
- Tylenol
- Corticosteroids
- PO/ sublingual/PR/topical opioids
- Parenteral opioid medications
- Physical therapy (PT)
- Heat/Ice

Neuropathic Pain

- Anticonvulsants: gabapentin, pregabalin
- Antidepressants: amitriptyline, duloxetine
- Weaker opiate/SSRI action: Tramadol, Nucynta
- Lidoderm patch/compounded creams
- Spinal cord stimulator
- Epidural steroid injections (ESI)
- Nerve blocks

Interventional Pain Management Therapies

- Peripheral Nerve Blocks
- Sympathetic Nerve Blocks/Neurolysis
  - Stellate Ganglion
  - Celiac Plexus
  - Lumbar sympathetic
  - Superior hypogastric
  - Ganglion of Impar
- Epidural Steroid injection
- Medial Branch Block
- Intrathecal Pump Implant
- Spinal Cord Stimulator Implant
- Patient Controlled Analgesia

Peripheral Nerve Block

- <u>Indications:</u>
  - Cancer-related pain in specific nerve distribution
    - Trigeminal
    - Sphenopalatine
    - Intercostal nerves

- <u>Potential complications:</u>
  - Infection
  - Sensory/motor deficits

Sympathetic Blocks and Neurolysis

- Targets visceral afferent pain fibers
- Prognostic block prior to neurolysis
- Bupivacaine typically injected and patient monitored for therapeutic response
- Neurolysis involves disrupting the nerve plexus with a neurolytic agent (ethanol, phenol), surgery, cryotherapy or radiofrequency ablation
- Improves pain (shown to decrease opioid consumption)

Neurolytic Block Indications

- Typically performed for cancer patients with advanced disease

- <u>The following should be considered:</u>
- Optimal for patients with a limited lifespan of three to six months
- Is there a favorable risk to benefit ratio?
- Did the patient have a good analgesic response and acceptable side effects with prognostic blocks?

Stellate Ganglion Block

- <u>Indications:</u>
  - Cancer-related pain in the upper extremities and chest, head and neck, breast, thorax
  - Typically at C6-C7
- <u>Potential complications:</u>
  - Infection
  - Horner’s syndrome (ptosis, miosis, conjunctival injection, anhidrosis)

Celiac Plexus Block

- Indications:
  - Cancer-related pain in the upper abdomen:
    - Pancreas, gastric, hepatic, biliary tree
    - T12-L2

- Potential complications:
  - Diarrhea
  - Hypotension
  - Leg weakness/paraplegia
  - Sensory deficits

Lumbar Sympathetic Block

- <u>Indications:</u>
  - Cancer-related pain in the lower abdomen/lower extremities
    - L1-L4
- <u>Potential complications:</u>
  - Infection
  - Intravascular injection
  - Spinal injection
  - Hypotension

Superior Hypogastric Plexus Block

- <u>Indications:</u>
  - Cancer-related pain in the entire pelvis with exception of ovaries:
    - Bladder, testicles, cervix, vagina, uterus
    - L5-sacrum

- <u>Potential complications:</u>
  - Infection
  - Damage to vasculature
  - Spinal nerve damage
  - Retroperitoneal bleeding (plexus lies in the retroperitoneal space)

Ganglion of Impar Block

- <u>Indications:</u>
  - Perineal, rectal pain or coccydynia secondary to cancer
  - Anterior to coccyx
- <u>Potential complications:</u>
  - Infection
  - Impaired b/b, motor/sensory function
  - Rectal perforation
  - Neuralgia

Epidural Steroid Injection and Medial Branch Block

- <u>Epidural Steroid injection:</u>
  - Cervical
  - Thoracic
  - Lumbar
- Injection of steroid in the epidural space (not neurolytic)
- Reduces inflammation of nerve roots and relieves neuropathic symptoms (radicular pain)
- Length of effect varies

- <u>Medial Branch Block:</u>
  - Neurolytic block of medial branch of primary dorsal ramus
  - Blocks intractable pain due to malignant vertebral compression fractures (axial pain)

Intrathecal Pump Implant

- Surgically implanted device, typically in the abdomen
- Deliverance of pain medication through catheter into the intrathecal space
- Greater effect at lower opioid dosage than po or transdermal pain medications
    - Can minimize side effects
- Refills done in office via port in implant
- Medication concentration is patient specific and is titrated externally by clinician

- <u>Potential complications:</u>
    - Infection
    - Titration issues
    - Lack of patient compliance with pump refills

Spinal Cord Stimulator

- Neuromodulation (electrical stimulation of the nerves)
- Helps with neuropathic pain in the extremities
- Electrodes introduced near the spinal cord in the epidural space
- Trial prior to implantation

- <u>Potential complications:</u>
  - Infection
  - Battery may not be MRI compatible (older units)
  - Unsuitable for debilitated patients near end of life

Patient Controlled Analgesia (PCA)

- Administers a specific dosage of opioid pain medication at set rate and/or intervals

- Allows you to accurately see patient requirements
  - Monitor patient attempts to utilize the system

- Can help get severe, debilitating pain under control more quickly

Patient Controlled Analgesia (PCA)

- <u>Other Benefits</u>:
- Patient psychologically feels that they have some control over their pain
- Patients don’t use while sleeping, so typically less opioid use overall
- <u>Risks:</u>
- Family members pushing button for the patient (ie: when pt is asleep)
- Overdose risk if patient is not properly monitored and titrated

Patient Controlled Analgesia

- Order continuous pulse oximetry
- Order for naloxone
- Discuss with RN
- With new PCA, patient should be seen within 12hrs
- Titrate PCA as needed
- Once stable, patient should be monitored every 12-24hrs
- Wean as tolerable, PCA is for short-term use only

Cancer Pain Management Pearls

- Make the diagnosis….is the patient experiencing a pain crisis?
  - Differentiate reversible vs intractable causes of pain
- Select therapies based on etiology of pain
- Utilize adjunct therapies
- Consult with experts in pain management quickly to avoid continued suffering
- Communicate with patient and family
- <u>Consider other needs of patient:</u>
  - Psychological
  - Spiritual
  - Social (pets, work)

Summary

As PA clinicians, we have a responsibility to alleviate suffering

The management of cancer-related pain is best delivered in a multi-disciplinary approach

Remember early intervention and teamwork is key!

Thank you!

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