**Beyond Opioids: Adjuvant Analgesics for the Hospice Patient**

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- May include discussion of off-label uses of medications for pain management

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**Objectives**

- Describe how pain is classified.

- Recognize the effects of untreated pain or ineffective pain management and the importance of conducting a comprehensive pain assessment.

- Discuss the basic application and considerations with employing adjuvant drug therapies in pain management.

- Recommend appropriate adjuvant therapies based on the suspected pain etiology, type of pain and various patient specific factors.
The Nature of Suffering and the Goals of Medicine
Dr. Eric J. Cassell

The relief of suffering and the cure of disease must be seen as twin obligations of a medical profession that is truly dedicated to the care of the sick. (Our) failure to understand the nature of suffering can result in medical intervention that (though technically adequate) not only fails to relieve suffering, but becomes a source of suffering itself.

~70% of patients with cancer experience significant pain during their illness, yet < 50% receive adequate pain treatment

Pain

- An unpleasant sensory and emotional experience associated with actual or potential tissue damage. (APS, 1992)
- Whatever the patient says it is! (McCaffery, 1968)
- Impacts psychosocial and physical functioning
Classification of Pain

- Temporal
  - According to time course
- Etiologic
  - According to cause
- Physiologic
  - According to type

Temporal Pain

- Acute
  - Well-defined, time-limited, direct result of injury
- Chronic
  - Less well-defined, >6 months duration, persistent
- Incident
  - Precipitated by movement or procedures
- Breakthrough
  - Between regularly scheduled doses of pain medication

Etiologic Pain

- Associated with terminal disease
  - Bone mets, spinal cord compression
- Associated with treatment
  - Neuralgia from chemotherapy or from HIV medications, post-op pain
- Associated with underlying disorder
  - Arthritis, diabetic neuropathy
Physiologic Pain

Nociceptive Pain: Somatic Pain
- Arises from bone, joint, muscle, skin, or connective tissue
- Described as: aching, throbbing, sharp, worsens with movement
- Well localized
- Examples: muscle spasm, bone metastases, incisions, tumor invasion into surrounding tissue, broken bone.

Nociceptive Pain: Visceral Pain
- Stretching or distention of pelvic, thoracic, or abdominal viscera
- Described as: deep, squeezing, pressure
- Often poorly localized, may be referred along a dermatome
- Examples: Myocardial infarction, hepatic metastases, bowel obstruction
Neuropathic Pain

- Pain reports may be disproportionate to physical findings
- Serves no protective function
- Described as: sharp, shooting, tingling, stabbing, electric, numbness, burning
- Examples: spinal cord compression, shingles, peripheral neuropathy

Most common reason for unrelieved pain is the failure of healthcare professionals to routinely assess pain and pain relief.

Harmful Effects of Unrelieved Pain

(McCallen, 1999)
Assessment Overview

- The APS (American Pain Society) calls pain the "5th Vital Sign" - Assess when HR, BP, RR & Temp. are measured
- Goal of initial assessment - Characterize pain by location, intensity, etiology
  - Detailed history
  - Physical Exam
  - Psychosocial assessment
  - Diagnostic evaluation

Elements of a Comprehensive Pain Assessment

- Complete History
- Physical Exam
- Laboratory and Radiological Studies

Systematically assess and reassess for pain and pain relief
Impaired cognition is common in hospice & can impact pain assessment

Assessment Clinical Pearls

- **Patient knows best** – only the patient can describe and rate the pain
- Choose the appropriate tool given the patient’s clinical status
- Once the appropriate tool has been selected, use it consistently with that patient to enable symptom tracking

Adjuvant Analgesics
ADJUVANT is a drug with other indications that may be analgesic in specific circumstances

Adjuvant guidelines usually extrapolated from other patient populations

Adjuvant Therapy Considerations

• Cancer pain syndromes most adaptable to adjuvant therapy are those caused by nerve compression or damage, bone metastasis and visceral distention.

• To help ensure appropriate use of adjuvants, the clinician should be familiar with:
  - Approved and unapproved indications
  - Common side effects
  - Serious adverse reactions
  - Usual time-action relationship
  - Pharmacokinetics (ADME)
  - Absorption, distribution, metabolism, elimination
  - Dosing guidelines for pain
Mr. Thompson is a 27-year-old male admitted to hospice with a primary diagnosis of end-stage AIDS.

CC: Pain described as “pins and needles” in his hands and feet for over 2 weeks.

SH: Hx. of IV drug use; single; lives alone

FH: unknown

PMH: Depression x 2 months

Meds:
- Morphine LA 30mg Q12H for pain control
- Morphine conc. 20mg/mL; 0.5mL (10mg) Q3H PRN breakthrough pain
- Lorazepam 0.5mg Q4H PRN anxiety

Allergies: NKDA

Assessment:
- P: Nothing in particular makes the pain worse as it is pretty bad all of the time. He has tried ibuprofen and acetaminophen, neither of which worked.
- Q: Burning and numbness and tingling in his hands and feet
- R: The pain does not really move anywhere; it stays in his hands and feet.
- S: It is in both hands and feet. Current pain is 7/10 with the average pain being 6/10, least pain 4/10, and greatest pain being 10/10.
- T: The pain began over 6 months ago.
- U: As a result of the pain, he sometimes has difficulty walking.
Case #1

1. What is the probable etiology for the patient’s new presentation of pain?
2. What would you recommend to control his pain?
3. Would you add/change anything within his current regimen?

Common Neuropathic Pain Syndromes

- **Cancer-related**
  - Brachial plexus neuropathies
  - Chemo-induced neuropathy
    - Cisplatin, oxaliplatin, paclitaxel, thalidomide, vincristine, vinblastine
  - Cranial neuropathies
  - Post-herpetic neuropathy
  - Post-radiation plexopathies
  - Surgical neuropathies
    - Phantom-limb pain
    - Post-mastectomy/post-thoracotomy syndromes

- **Non-cancer related**
  - Alcohol-induced neuropathy
  - Brachial plexus trauma
  - Carpel tunnel syndrome
  - Complex regional pain syndrome
  - Diabetic neuropathy
  - Fabry’s disease
  - Guillain-Barre syndrome
  - HIV-assoc. neuropathy
  - Post-stroke pain
  - Trigeminal neuralgia
  - Vitamin deficiencies

As many as 40% of cancer patients have a neuropathic component to their pain.
What Causes Neuropathic Pain in Cancer?

- Tumor compression or invasion
- Inflammation
- Necrosis
- Destruction of neural tissues
- Diagnostic/therapeutic procedures
  - Biopsy, surgery, amputation, chemotherapy, radiation

Adjuvants for Neuropathic Pain

- Antidepressants and anticonvulsants are typically preferred over other adjuvant agents for managing neuropathic pain

- Others:
  - Corticosteroids
  - Alpha-2 adrenergic agonists
  - Muscle relaxants
  - NMDA receptor blocker
  - Topical products
  - Natural/homeopathic products

Antidepressants

- Tricyclic antidepressants (TCAs)
  - Tertiary amines: e.g. amitriptyline, imipramine, doxepin, imipramine
  - Secondary amines: e.g. desipramine, nortriptyline

- Selective serotonin reuptake inhibitors (SSRIs)
  - e.g. paroxetine, citalopram, fluoxetine, sertraline, fluvoxamine

- Serotonin norepinephrine reuptake inhibitors (SNRIs)
  - e.g. venlafaxine, duloxetine

- Others
  - e.g. bupropion, trazodone
Antidepressants:
TCAs Dosing Guidelines*

<table>
<thead>
<tr>
<th>Drug</th>
<th>Starting Dose</th>
<th>Usual Effective Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline (Elavil®)</td>
<td>10-25 mg HS</td>
<td>50-150 mg HS</td>
</tr>
<tr>
<td>Desipramine (Norpramin®)</td>
<td>10-25 mg HS</td>
<td>50-150 mg HS</td>
</tr>
<tr>
<td>Nortriptyline (Pamelor®)</td>
<td>10-25 mg HS</td>
<td>50-150 mg HS</td>
</tr>
</tbody>
</table>

* Most commonly used antidepressants highlighted

- Start with lower dose in elderly
- Although these can be given once at bedtime, some patients report less 'hangover' effect and late-afternoon pain if doses are divided
- Lower doses are required compared to therapy for depression

TCAs: Clinical Considerations

- Compelling evidence to support use in a variety of chronic pain syndromes
- Consider co-morbid conditions (i.e. depression, insomnia)
- Consider side effects
  - Most common: dry mouth, blurry vision & constipation
  - Incidence of side-effects is highest with the tertiary amines
  - Secondary amines are generally better tolerated, esp. in the elderly
  - Less anti-cholinergic, orthostatic hypotension, somnolence and cognitive impairment
- Consider drug-drug interactions
  - When taken together, SSRIs can reduce clearance of TCAs resulting in higher plasma levels (toxicity)
  - Avoid/use with caution in elderly, heart disease, narrow angle glaucoma and BPH

Antidepressants:
SSRI Dosing Guidelines*

<table>
<thead>
<tr>
<th>Drug</th>
<th>Starting Dose</th>
<th>Usual Effective Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxetine (Paxil®)</td>
<td>10-20 mg daily</td>
<td>20-40 mg daily</td>
</tr>
<tr>
<td>Citalopram (Celexa®)</td>
<td>10-20 mg daily</td>
<td>20-40 mg daily</td>
</tr>
</tbody>
</table>

* Most commonly used antidepressants highlighted

- Start with lower dose in elderly
- Discontinue gradually to avoid/minimize withdrawal syndrome
- Lower doses are required compared to therapy for depression
**SSRIs: Clinical Considerations**

- Mixed outcomes seen in RCTs and clinical experience
  - Paroxetine and citalopram appear to be effective in painful diabetic neuropathy
  - Fluoxetine may have a role in fibromyalgia and prophylaxis of chronic headaches

- Consider co-morbid conditions (e.g. generalized anxiety, depression)

- Consider side effects
  - More favorable side effect profile when compared to TCAs
    - Most common: nausea, headache, sedation, insomnia, impaired memory

- Consider drug-drug interactions
  - Fluoxetine & paroxetine inhibit CYP2D6 isoenzyme which could produce significant interactions with other drugs metabolized by this isoenzyme
  - Fluoxetine has a long half-life, compared to other SSRIs, and is more prone to interactions

**Antidepressants: Other Dosing Guidelines**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Starting Dose</th>
<th>Usual Effective Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venlafaxine (Effexor®)</td>
<td>50-75 mg daily</td>
<td>75-225 mg daily</td>
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<tr>
<td>Bupropion (Wellbutrin®)</td>
<td>100-150 mg daily</td>
<td>150-450 mg daily</td>
</tr>
<tr>
<td>Duloxetine (Cymbalta®)</td>
<td>60 mg daily</td>
<td>60 mg daily</td>
</tr>
</tbody>
</table>

*Most commonly used antidepressants highlighted

- Start with lower dose in the elderly
- Dose reduction of venlafaxine needed in patients with renal impairments
- To reduce peak concentration toxicity of bupropion (e.g. seizures), limit any single dose to 300 mg.
- Lower doses are required compared to therapy for depression

**Others: Clinical Considerations**

- Consider co-morbid conditions
  - Bupropion may be better for patients where sedation and fatigue is bothersome

- Consider side effects
  - Venlafaxine is generally well-tolerated, however, dose-related hypertension has occurred
    - Regular BP monitoring needed
    - Common side effects: nausea, dizziness, somnolence, insomnia, sweating, dry mouth
  - Bupropion decreases seizure threshold and is contraindicated in patients with a predisposition to seizure development
    - Sedative-hypnotic withdrawal states, pre-existing seizure condition, co-administration of drugs with seizure threshold lowering potential
  - Bupropion can increase energy levels
    - Common side effects: dry mouth, insomnia, nausea, headache, rash, agitationexcitement
General Suggestions for Antidepressants

- Evidence from clinical studies
  - Usual effective dose is lower when compared to the dose needed to treat depression
  - Onset of analgesia is much sooner (~ 1 week) compared to the onset of antidepressant effect
  - Does not support use for acute pain
  - Reasonable to select a TCA as 1st line
  - Variability in analgesic response to different antidepressants
    - Failure of one due to inefficacy can be followed by an appropriate alternative

- Changes in pain, mood, sleep patterns, mental status and other clinical effects must be monitored during dose escalation or discontinuation

Anticonvulsants

- Mechanism of action not well understood

- Used for many decades, however, prevalent use for pain began with the introduction of gabapentin (Neurontin®).
  - 1st generation agents
    - Phenytoin, carbamazepine, valproic acid, etc.
  - 2nd generation agents
    - Gabapentin, pregabalin, lamotrigine, topiramate, etc.

Anticonvulsants: 1st generation agents

- Evidence of efficacy is best for carbamazepine and phenytoin
  - Carbamazepine: trigeminal neuralgias, post-herpetic neuralgia (PHN), painful diabetic neuropathy (PDN)
  - Phenytoin: Painful neuropathy in Fabry’s disease, PDN

- Side effects and drug-drug interactions often limit their use
  - Carbamazepine: sedation, dizziness, nausea, unsteadiness
  - Phenytoin (dose-dependent): dizziness, unsteadiness, diplopia, mental clouding

- Require serum level monitoring
  - Carbamazepine: blood dyscrasias (e.g. leukopenia, thrombocytopenia); hepatotoxicity
  - Phenytoin: level may need to be corrected depending on albumin levels
Anticonvulsants:
2nd generation agents

- Gabapentin considered a 1st-line treatment of neuropathic pain of all types
  - Good tolerability, proven analgesia, minimal side effects
  - Start dosing low (e.g. 100 mg TID) and titrate every 3-5 days to tolerability and effect
    - Somnolence, drowsiness
  - Dose may need to be lowered in renal insufficiency
  - Pharmacokinetic ceiling effect
    - Positive effects may plateau during dose escalation
    - Oral bioavailability may decline from 60% for a single 300 mg dose to 35% for 1600 mg TID

- Somnolence, drowsiness
  - Dose may need to be lowered in renal insufficiency
  - Pharmacokinetic ceiling effect
  - Positive effects may plateau during dose escalation
  - Oral bioavailability may decline from 60% for a single 300 mg dose to 35% for 1600 mg TID

- Pregabalin (Lyrica®)
  - Recently FDA approved for PDN and PHN
- Lamotrigine (Lamictal®)
  - May be effective for certain non-malignant nerve pains
    - Trigeminal neuralgia, HIV-associated neuropathy, central post-stroke pain
  - Potential for drug interactions
  - Dose reduction in renal & hepatic disease
  - Risk for serious rash/skin hypersensitivity exists (e.g. toxic epidermal necrosis, Stevens-Johnson syndrome)
    - Start low, go slow

- Others
  - Oxcarbazepine (Trileptal®), tiagabine (Gabatril®), levetiracetam (Keppra®), zonisamide (Zonegran®) lacosamide (Vimpat®)
  - Trials are often considered in refractory cases of nerve pain
  - More research needed to support use in neuropathic pain
    - Most studies are uncontrolled and anecdotal
      - Exception lacosamide
Other Adjuvants for Neuropathic Pain

- **Anesthetics**: Accumulates at dermal pain receptors & nerve endings to interfere with nerve impulse initiation/conduction
  - Can be used topically or systemically
  - EMLA cream *(Eutectic Mixture of Local Anesthetics)*
    - Useful in children prior to venapuncture; Post-herpetic neuropathy (?)
    - Role in neuropathic pain has not been validated
    - Very expensive

- **Other Adjuvants for Neuropathic Pain**
  - **Anesthetics**
    - Lidocaine *(patches, gel, ointment, infusion)*
      - Lidoderm® patches FDA indicated for PHN
      - Patches can be cut to size
      - Up to 3 patches at a time; Remove after 12 hours use; Apply directly to painful area (on intact skin only)
    - Systemic anesthetics may be helpful in a variety of neuropathic pains
      - Can be given orally (e.g. mexilitine) or as an infusion (e.g. IV lidocaine)
    - Toxic concentrations can cause cardiac conduction disturbances
      - Use with caution in patients with heart disease
      - May need to avoid use in patients with cardiac rhythm disturbances, those on antiarrhythmics or those with cardiac insufficiency
    - Potential for serious, dose-dependent effects
      - Choose appropriate dose and titration schedule
    - Be aware of various drug interactions
    - Consult with experienced anesthesiologist

- **Capsaicin**
  - An "irritant" derived from hot peppers
  - Uses: Osteoarthritis, diabetic neuropathy, post-herpetic neuropathy, post-mastectomy wound pain; AIDS related neuropathy
  - Application: Thin film 3 to 5 times daily (mostly 4x/day)
  - Precautions:
    - Wash hands after application
    - Do not apply to damaged skin
    - Do not use with heating pad or immediately before/after bathing
    - May take up to 4 weeks to see effectiveness
    - Initial burning sensation...start with lower strength
Other Adjuvants for Neuropathic Pain

- **Alpha-2 agonists**
  - Clonidine
    - May be useful in DPN
    - Epidural may i/p pain by preventing pain signals from spinal receptors
    - Monitor for side effects: hypotension, somnolence, dry mouth

- **Natural/homeopathic products**
  - Alpha- Lipoic acid: potent antioxidant
    - Potentiates hypoglycemia, monitor blood glucose and dose adjust hypoglycemic agents. Caution with drugs metabolized in the liver.
  - Neuragen® PN:
    - Apply a few drops to the affected area and massage gently max 4 times a day.
    - Non-Rx topical homeopathic product.

Other Adjuvants for Neuropathic Pain

- **Muscle relaxants**
  - May be helpful when pain is accompanied by muscle spasm
  - Short term use (< 2 weeks) recommended
  - Tizanidine (Zanaflex®)
    - Trigeminal neuralgias
    - Recent FDA warning added to labeling
      - CI with fluvoxamine and ciprofloxacin
      - Potentiates hypotensive and sedative effects of tizanidine
  - Baclofen
    - Inhibits transmission of reflexes at the level of the spinal cord which relieves muscle spasm
    - Useful for multiple sclerosis
    - May also be useful in lancinating neuropathic pain syndromes
    - Side effects: Drowsiness, weakness, slurred speech, vertigo, confusion

Other Adjuvants for Neuropathic Pain

- **NMDA receptor blockers**
  - Dextromethorphan
    - Structurally related to the opioid, levorphanol, but has little analgesic or addictive properties
    - May help relieve pain from PON and facial neuralgias
    - Dose-dependent side effects often limit use:
      - GI upset, nystagmus, dizziness, dysarthria
  - Ketamine
    - At anesthetic doses it produces a ‘dissociative’ state in which it prevents the higher centers from perceiving auditory, visual or painful stimuli
    - Potent analgesia at sub-anesthetic concentrations
    - Side effects limit use: mental clouding, delirium, mood changes
  - Amantadine
    - Limited data suggest it may reduce pain, allodynia and hyperalgesia in chronic nerve pain and surgical neuropathic cancer pain
    - More clinical studies and experience is needed before drawing conclusions of its role in neuropathic pain
Case #1
Follow-up

1. What is the probable etiology for the patient's new presentation of pain?
2. What would you recommend to control his pain?
3. Would you add/change anything within his current regimen?

**Adjuvants for Bone Pain**

JP is a 78 y.o. male who has recently been diagnosed with metastatic prostate cancer. The patient has decided that he does not want to pursue any treatment and was enrolled in a local hospice program. About 2 weeks after admission, he started developing pain in the lower back and pelvic region. Previously, he had complained of moderate pain in his mid-back that has been controlled with medication.

**CC:** Lower back and pelvic pain radiating down the right leg that is achy and sharp at times and feels like “heavy pressure”
Case #2

1. What is the probable etiology for the patient’s new presentation of pain?

2. What would you recommend to control his pain?

3. Would you add/change anything within his current regimen?
Adjuvants for Bone Pain

**Overview**
- 85% dying patients with breast, lung or prostate cancers develop bone metastases
- Earliest sites
  - Ribcage, spine, pelvis
- Osteoblastic disease
  - Increase/formation of bone (ex. prostate and 10% breast cancers)
- Osteoclastic disease
  - Loss/resorption of bone

**Adjuvants for Bone Pain**

- Calcitonin
- Bisphosphonates
- Radiopharmaceuticals

**Calcitonin**
- Provides analgesia in acute, osteoporotic vertebral compression fractures
- May relieve pain from bone metastases
- May be administered SQ or intranasally
  - **SQ**: Skin test required prior to use to screen for hypersensitivity reactions
    - Optimal dose not known
  - **Intranasal**: Initially one spray in one nostril, alternating nostrils every day
- **Major side effect = nausea**
  - Start low and titrate up slowly
  - May subside after a few days of continued use
  - May be less frequent with intranasal use
- **Long-term effects and benefits are unknown**
  - Considered experimental at the present time
**Bisphosphonates**

- Useful in **osteoclastic** disease
  - Inhibits loss of bone
- May also be used to treat tumor-induced hypercalcemia
- **Examples**
  - Clodronate (not available in the U.S.)
  - Pamidronate (Aredia®)
  - Zolendronic acid (Zometa®)
- Evidence shows that these agents can delay the onset of painful bone metastases from varying primary sites, however, the evidence is questionable with regards to their use in acute pain.
  - Insufficient evidence to recommend as 1st line therapy
  - Reduces skeletal morbidity from breast cancer, prostate cancer and multiple myeloma (e.g. pathological fractures, spinal cord compression, etc.)

**Radiopharmaceuticals**

- Primary mechanism of action is unknown
  - Delivers therapeutic doses of radiation w/ limited tissue penetration (spares most of the surrounding healthy tissue)
- Pain reduction seen in 55-80% of patients with complete pain relief in 20-30%
- **Examples**: Strontium (89Sr), samarium (153Sm), radiophosphorous (32P)
- **Onset**: 3-6 days but usually within 1-2 weeks
- **Duration**: 1-6 months
- **Major ADR**: Reversible myelosuppression; endosseous edema (causes pain flare up in 10-20% patients)
  - This pain may be predictor of good therapeutic response
- **Contraindications**: Significant myelosuppression; DIC; pregnancy
- **Considerations**
  - Use with caution in renal insufficiency
  - Administered via single IV dose in state licensed facilities
  - Oral route only with 32P (need to take measures to maximize GI absorption)
  - Cost
    - 32P is significantly less expensive than the others

**Adjuvants in Visceral Pain**
Adjuvants in Visceral Pain

- Octreotide

- Antispasmodics/anticholinergics

Octreotide

- **Uses**
  - Bowel obstruction; metastatic carcinoid and vasoactive intestinal peptide-secreting tumors; pancreatic tumors; gastrinoma; secretory diarrhea; acromegaly
  
  - Works by inhibiting gastric, pancreatic and intestinal secretions and decreasing GI motility

- **Considerations**
  - Administered either SC or IV
  - Duration of action: 6-12 hours
  - Good safety profile
  - Expensive
  - Side effects (rare): edema, flushing, GI disturbances, liver disturbances, hypoglycemia, musculoskeletal weakness

Antispasmodics/Anticholinergics

- **Examples**
  - Hyoscine (Levsin®)
  - Scopolamine (Transderm-Scop®)
  - Dicyclomine (Bentyl®)

- **Uses**
  - Reduces intestinal motility and secretions
  - Relieves abdominal cramping and pressure

- **Considerations**
  - May cause constipation, dry mouth, dry eyes, dry nose and urinary retention
Other Adjuvant Analgesics

- **Cannabinoids**
  - May be helpful in some pain syndromes, however, it has a narrow therapeutic window and maximal efficacy at tolerable doses is limited.
  - Patient tolerability and safety concerns are limiting factors to use.

- **Psychostimulants**
  - Some pain relief in post-op pain and pain associated with Parkinson’s disease and cancer.
  - More commonly used to manage opioid-induced somnolence and drowsiness, depression and improve cognition.
  - Monitor for tremors, anorexia/weight loss, insomnia, hypertension and tachycardia.

- **Neuroleptics**
  - Little evidence of analgesic activity and limited data to support role as an adjuvant analgesic.
  - Limited by incidence of disturbing adverse effects and concerns of toxicity.
    - Cognitive changes, tremor, parkinsonian symptoms (EPS), metabolic disturbances, sedation, anticholinergic effects.
  - **Ziconotide (Prialt®)**
    - Intrathecal infusion FDA approved for the management of severe, chronic pain in those who are not responsive or intolerant to other therapies such as systemic analgesics, adjunctive therapies or IT morphine.
    - 1st of a new class of agents: N-type Ca²⁺ channel blockers.
    - Consult anesthesiologist.
    - Need to consider potential for serious side effects, dosing and titration schedule.

Where Do Corticosteroids Fit into Pain Management?

- Reduces cerebral and spinal cord edema/compression.
- Reduces edema in other areas:
  - Rectal/cervical tumor affecting sacral area
  - Reduces capsular stretch in liver, spleen, lymph nodes and adrenal glands causing visceral distention.
- Stimulates appetite; creates feeling of well-being (euphoria).
- Effective for bone pain if inflammation is involved.
- Avoid NSAID use if possible to reduce risk of gastrointestinal toxicity.
- Overall effects: Mood elevation, anti-inflammatory, anti-emetic, euphoria, appetite stimulation, increased weight.
**Where Do Corticosteroids Fit into Pain Management?**

- **Potency considerations**
- **Side effects**
  - Insomnia, nervousness, increased appetite, indigestion, hyperglycemia, edema, facial hair growth (with long term use)
  - Give last dose no later than 2 or 3pm
  - Weigh risks vs. benefits for use in patients with relative contraindications
    - e.g. Diabetes, immunosuppression – What is more important at this point??

<table>
<thead>
<tr>
<th>Drug</th>
<th>Equal dose</th>
<th>Anti-inflammatory potency</th>
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</thead>
<tbody>
<tr>
<td>Prednisone</td>
<td>5mg</td>
<td>4</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>0.75mg</td>
<td>20-30</td>
</tr>
<tr>
<td>Methylprednisolone</td>
<td>4mg</td>
<td>5</td>
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**Case #2 Follow-up**

1. What is the probable etiology for the patient’s new presentation of pain?
2. What would you recommend to control his pain?
3. Would you add/change anything within his current regimen?

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Mr. Grant is a 74-year-old with renal cancer with pleural and liver metastases as well as metastases to the cervical spine. He is now bedridden, cachectic, isn’t eating or drinking, and is intermittently confused. He arouses every two hours and complains of severe pain.

CC: Severe pain
SH: Unknown
FH: Unknown
PMH:
  - Diabetes x 25 years
  - Hypertension x 30 years
Meds:
- Morphine LA 60mg Q12H for pain
- Morphine IR 20mg Q3H PRN pain
- Humulin R per sliding scale
- Lisinopril 20mg QD for BP
- Senna S 2 tablets BID for constipation

Allergies: NKDA

Assessment:
P: Deep breathing seems to make the patient worse. Pain has been relieved in the past with his current opioid regimen however it has recently become progressively worsening.
Q: When the patient awakens and is asked about his pain, he communicates that he feels "terrible aching". They have also observed him holding his stomach and groaning. His breathing appears labored and painful to his family members.
R: Pain is in the neck and back, abdomen, and chest wall and radiates to the patient's shoulder.
S: Current average, best, and worst pain have all been 10/10.
T: He has had these pains for 11 months with recent worsening.

Case #3

1. What is the probable etiology for the patient's new presentation of pain?
2. What would you recommend to control his pain?
3. Would you add/change anything within his current regimen?
Conclusion

- Adjuvant analgesics offer the opportunity to experience improved outcomes in those patients who cannot attain an appropriate response to pain or balance between pain relief and side effects.

- Maximal pain control requires frequent assessment and continual re-evaluation of both the severity and type of pain along with considerations of other ongoing symptoms.

- Considering the mechanism of the pain syndrome, the use of both non-opioid and adjuvant analgesics, used alone or together with opioids, may reduce the amount of opioid required, improve analgesia and side effects, thereby improving quality of life.

Thank You for Your Participation!

QUESTIONS?

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References

References

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