PALLIATIVE MEDICATION MANAGEMENT

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OBJECTIVES

- Examine medication appropriateness and rational prescribing.
- Identify medications that are appropriate for cost-effective symptom management.
- Review common classes of nonessential medications and how to safely discontinue them.
- Determine hospice drug coverage when given patient-specific information, including diagnosis codes and terminal prognosis information.
MEDICATION APPROPRIATENESS

- Few guidelines exist for determining how and when to discontinue medications.
- What is medication appropriateness?
  - Medication appropriateness provides a means to evaluate medication need.
  - Medication appropriateness refers to whether a medication is **useful** in an individual clinical situation based on both the attributes of the medication and those of its recipient.
MEDICATION APPROPRIATENESS

- Important factors for determining medication appropriateness:
  - Remaining life expectancy of patient
  - Time until therapeutic benefit of medication
  - Goals of care
  - Treatment target
MEDICATION APPROPRIATENESS & RATIONAL PRESCRIBING
HOW DO YOU MEASURE UP?

- Adult patients, prognosis <12 months
  - Statin for primary cardiovascular disease prevention
  - Followed for one year with all medications recorded at least monthly
- Average medications at enrollment: 11.5
- Average medications at study termination or death: 10.7
- Most common medications prescribed near end of life: antidepressants, antihypertensives, broncholytics/bronchodilators, laxatives, and GI protective agents
SYMPTOM MANAGEMENT
FORMULARY MANAGEMENT

- Formulary: A list of medications used by a hospice to identify preferred medications that offer the greatest value:
  - Brand and Generic medications
  - Prescription and Over-the-Counter (OTC) medications
- Closed Formulary: No open medications without authorization
- Open Formulary: No restricted medications without authorization
- Limited Formulary: Select open medications
PAIN: NOCICEPTIVE

ACETAMINOPHEN

- Mild pain or fever
- Cost-effective formulations:
  - Tablets
  - Capsules
  - Suppositories
  - Oral liquids

ANTI-INFLAMMATORY AGENTS

- NSAIDs
  - **First line**: Ibuprofen, Naproxen
  - Alternatives: Meloxicam, Celecoxib, Diclofenac, Sulindac, Oxaprozin, Piroxicam
  - Avoid: Ketorolac, Indomethacin

- Corticosteroids
  - **First line**: Dexamethasone, Prednisone
  - Formulations: Oral tablets, oral elixir, oral concentrate
PAIN: NEUROPATHIC

- **Anticonvulsants**
  - **First line**: Gabapentin
  - Others: Pregabalin, Carbamazepine, Oxcarbazepine

- **Antidepressants**
  - **Tricyclic Antidepressants (TCA)**
    - **First Line**: Amitriptyline
    - Others: Nortriptyline, Imipramine, Doxepin
  - **Serotonin-Norepinephrine Reuptake Inhibitors (SNRI)**
    - **First line**: Duloxetine
MODERATE TO SEVERE PAIN: OPIOIDS

MODERATE PAIN
- Acetaminophen/Opioid Combination
  - APAP/Hydrocodone
  - APAP/Oxycodone
- Tramadol (Ultram®)
- Tapentadol (Nucynta®)
- Buprenorphine (Butrans®)
+/- Adjuvant Therapy

SEVERE PAIN
- Morphine (MS IR, MS Contin®, Kadian®, Avinza®)
- Hydromorphone (Dilaudid®, Exalgo®)
- Oxycodone (OxyContin®, Percodan®, Percocet®)
- Fentanyl (Duragesic®)
- Tapentadol (Nucynta ER®)
- Oxymorphone (Opana®)
- Methadone (Dolophine®)
+/- Adjuvant Therapy
DYSPNEA

- **Opioids**
  - Systemic
  - Morphine is most widely studied

- **Benzodiazepines**
  - Patient specific recommendation
  - Use caution when co-prescribing

- **Other Medications Include:**
  - Bronchodilators
  - Glucocorticoids
    - Underlying causes: COPD, SVC, tumor-related upper airway obstruction
  - Diuretics
    - Underlying causes: Congestive heart failure
SECRETIONS

- Education
- Non-pharmacologic interventions
  - Change position
  - Re-evaluate IV hydration
- Anticholinergics
  - Atropine 1% solution: 1-2 drops SL Q4H PRN
  - Hyoscyamine 0.125mg tablet: 1-2 tablets SL Q4H PRN
  - Scopolamine: 1.5mg transdermal patch applied topically Q72H
  - Glycopyrrolate: 1-2mg PO Q8H PRN
# NAUSEA & VOMITING

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dopamine Antagonist</th>
<th>Histamine Antagonist</th>
<th>Anti-Cholinergic</th>
<th>Serotonin Antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>X***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prochlorperazine</td>
<td>X**</td>
<td>X*</td>
<td></td>
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</tr>
<tr>
<td>Promethazine</td>
<td>X*</td>
<td>X***</td>
<td>X**</td>
<td></td>
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<tr>
<td>Metoclopramide</td>
<td>X**</td>
<td></td>
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<td>X**</td>
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<tr>
<td>Ondansetron</td>
<td></td>
<td></td>
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<td>X***</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>X**</td>
<td>X**</td>
<td>X*</td>
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</tbody>
</table>

Receptor Affinity: * Low affinity, ** Moderate affinity to receptor, *** High affinity
AGITATION

- Non-pharmacologic interventions
- Antipsychotics
  - Haloperidol 0.5mg PO Q4H PRN
  - Atypical agents
    - Examples: Risperidone, Quetiapine
ANXIETY

- Benzodiazepines
  - Lorazepam 0.5mg PO Q4H PRN
- Selective Serotonin Reuptake Inhibitors (SSRI)
  - Citalopram 20mg PO daily
  - Sertraline 25-50mg PO daily
- Selective Norepinephrine Reuptake Inhibitors (SNRI)
  - Duloxetine 30mg PO daily
- Antipsychotics or Anticonvulsants
BOWEL REGIMENS

CONSTIPATION

- Non-pharmacologic
- Formulary medications:
  - Bulk-forming laxatives
  - Enemas
  - Osmotic laxatives
  - Stimulant laxatives
  - Stool softeners
- Alternative medications:
  - Opioid Antagonists
  - Others (Linaclotide, Lubiprostone)

DIARRHEA

- Non-pharmacologic
- Formulary medications:
  - Anti-motility agents
  - Anti-secretory/Absorbent agents
  - Bulk-forming agents
- Alternative medications
  - Antibiotics - *C. difficile*
  - Octreotide
  - Pancrelipase
MEDICATIONS TO RECONSIDER
NONSENSIBLE MEDICATIONS

Indications for discontinuation

- Diminished benefit:
  - Clinical improvement
  - Stabilization
  - Lack of clinical response

- Increased risk:
  - Medication-related adverse effects
  - Drug interactions
  - Unsafe utilization (e.g., high-risk medications for an age group)
# Medications to Reconsider

<table>
<thead>
<tr>
<th>Medication Classes</th>
<th>Example Classes</th>
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<tbody>
<tr>
<td>Anticoagulants</td>
<td>Cholinesterase Inhibitors</td>
</tr>
<tr>
<td>Statins</td>
<td>Oral Diabetes Medications</td>
</tr>
<tr>
<td>Antiplatelets</td>
<td>Vitamins &amp; Supplements</td>
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<tr>
<td>Diuretics</td>
<td>Antihypertensives</td>
</tr>
<tr>
<td>Bisphosphonates</td>
<td>Psychogenic Agents</td>
</tr>
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</table>
HMG-COA REDUCTASE INHIBITORS (STATINS)

- **Inhibition**
  - HMG-CoA reductase inhibited (rate limiting step in cholesterol synthesis)

- **Reduction**
  - Reduction in the production of mevalonic acid (early precursor of cholesterol)

- **Compensation**
  - Upregulation of LDL receptor expression on hepatocytes

- **Catabolism**
  - Accelerated LDL uptake
  - Decreased TC, LDL, VLDL, TG levels
ORAL BISPHOSPHONATES

- Binds to hydroxyapatite sites in bone
- Inhibits osteoclast mediated bone resorption
- Reduced bone turnover, increased bone mass, indirect increase in bone mineral density
CLOPIDOGREL

Irreversible inhibition of the P2Y$_{12}$ receptors on platelets

Inhibition of activation of the platelet glycoprotein complex

Inhibition of platelet aggregation for the life of the platelet (typically 7 to 10 days)
LOOP DIURETICS

Inhibition
Inhibition of sodium and chloride reabsorption in the ascending loop of Henle and distal renal tubule

Excretion
Increased excretion of water, sodium, chloride, magnesium and calcium

Action
Decreased fluid equates to decreased blood volume and blood pressure
DONEPEZIL

Inhibition
Reversibly and noncompetitively inhibits acetylcholinesterase (enzyme responsible for the breakdown of acetylcholine)

Increase
Increased concentrations of acetylcholine available for synaptic transmission in the CNS

Improvement
Modest improvements in cognitive deficits
DRY POWDER INHALERS

1. Remove cap and load capsule (if single dose).  
2. Breathe out slowly and completely.  
3. Place mouthpiece between front lips and form seal with lips.  
4. Breathe in through the mouth quickly and deeply over 2-3 seconds.  
5. Remove the inhaler from mouth and hold breath for as long as possible (at least 4-10 seconds).  
MEDICATION DISCONTINUATION

- Recognizing an indication for discontinuing a medication:
  - Lack of clinical benefit
  - Adverse effects
  - Clinical improvement

- Prioritize medications to be targeted for discontinuation.

- Document approval of discontinuation recommendation.

- Discontinue the medication(s) appropriately, coordinating with the patient, caregivers and other providers.

- Monitor the patient for beneficial and harmful effects of discontinuation.
TERMINAL PROGNOSIS & MEDICATION COVERAGE

- Hospice prognosis: Prognosis of six months or less life expectancy
  - “Terminal Diagnosis”: Primary diagnosis that contributes to the limited life expectancy
  - “Related Diagnoses”: Any diagnosis that is related to the terminal diagnosis or contributes to the limited life expectancy
  - Symptoms caused by or exacerbated by the primary diagnosis
TERMINAL PROGNOSIS & MEDICATION COVERAGE

- Related Medications
  - Appropriate and clinically necessary
  - No longer appropriate or clinically necessary

- Non-Related Medications
  - Appropriate and clinically necessary
  - No longer appropriate or clinically necessary

- Who is financially responsible?
  - Hospice, Patient, Non-Hospice payor
  - Discontinued medication

Who’s Paying?

- Hospice
- Patient
- Non-Hospice Payor
- Discontinued Medication
TERMINAL PROGNOSIS & MEDICATION COVERAGE
REGULATORY ISSUES

Relatedness and Coverage Concerns

- Medicare Part D
- OIG Reports
- CMS Guidance
REFERENCES

- Baily, FA, Harman, SM. Palliative care: The last hours and days of life. In: UpToDate, Bruera, E (Section Ed), UpToDate, Waltham, MA.
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QUESTIONS?