Fall Prevention in Hospice
(A pharmacologic and nonpharmacologic approach)

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Objectives

- Assess and identify hospice patients who are at risk for a fall
- Identify Disease states that put a patient at risk for a fall
- Point out medications that should be used with caution and how to manage patients effectively
- Identify environmental factors that can increase fall risk
Introduction

- Falls are a common occurrence and major health concern
- Occur in older adults with multiple impairments in cognitive, sensory, and gait domains
- Falls lead to
  - functional decline
  - increased length of stay in acute care hospitals
  - increased institutional liability

Epidemiology

- Complications from falls are the 5th leading cause of death in the elderly
- One out of 4 elderly persons falls each year
  - Only half of these falls are reported
  - Falling once doubles your chances of falling again in the future
- One out of 5 falls leads to serious injuries such as:
  - Fractures
  - Head trauma
  - Subdural hematomas
  - Soft tissue injuries
- Over 800,000 patients a year are hospitalized due to falls
Fall Death Rates in the U.S. INCREASED 30% FROM 2007 TO 2016 FOR OLDER ADULTS

If rates continue to rise, we can anticipate 7 FALL DEATHS EVERY HOUR BY 2030

Learn more at www.cdc.gov/HomeandRecreationalSafety.
INTRINSIC FACTORS

- Advanced Age
- Female sex
- Medical conditions
  - (i.e. Parkinson’s, Alzheimer’s, Dementia, Heart conditions)
- Muscle weakness
- Peripheral neuropathy (from diabetes)
- Orthostatic hypotension
- Vision impairment (sometimes due to diabetes, glaucoma and cataracts)
- Medication use

Risk Assessment and Prevention Strategies

- Several guidelines have been implemented for assessment and prevention of falls in elders patients:
  - The STEADI initiative
  - Cooper Burfield fall risk guideline
  - Beers criteria
    - Focuses on medications
STEADI initiative

- Developed by the CDC to help healthcare providers implement fall prevention techniques
- Provides a healthcare personnel with the tools and resources needed to manage older patients at risk of falls
- 3 initial steps taken by providers:
  - Screen to identify patients at risk
  - Medication review
  - Recommend vitamin D to improve bone, muscle and nerve health.
Cooper Burfield
fall risk
guideline

Beers Criteria

- A guideline that looks for specifically inappropriate drugs in a specific population
- The Centers for Medicare and Medicaid adapted the Beers Criteria in 1999 and incorporated into nursing home guidelines
- It focuses on 2 key issues
  - Medication and medication classes that should be avoided in the elders 65 and over
  - Medications that should be avoided in specific medical conditions
# Benzodiazepines

<table>
<thead>
<tr>
<th>Common practice</th>
<th>Safe practice</th>
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<tbody>
<tr>
<td>• Usually prescribed for insomnia and antianxiety</td>
<td>• Should be reserved as last line after other safer options have been tried</td>
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<tr>
<td>➢ used for maintenance therapy</td>
<td>➢ Other non-pharmacologic interventions</td>
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<td></td>
<td>➢ Trazodone, Mirtazapine and Melatonin for sleep.</td>
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<td></td>
<td>➢ Use of Antidepressants such as Buspirone for long term management of anxiety</td>
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<td>• Patients are left on them for a long time. Older adults have increased sensitivity to benzodiazepines and decreased metabolism of active metabolites</td>
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<td>➢ Use with caution in patients with renal and severe hepatic impairment</td>
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<td></td>
<td>➢ Side effects include Impaired cognition, delirium, falls and fractures</td>
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<tr>
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<td>• Use should be reserved for short term use and gradually taper off upon discontinuation</td>
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<tr>
<td></td>
<td>➢ Ability to treat sleeping disorders are usually short lived</td>
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<td>➢ Usually about 4 weeks</td>
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## Non-benzodiazepine sedative hypnotics

- Drugs include Zolpidem, Sonata and Lunesta
- Adverse effects include delirium, falls and fractures
- Recommended use for a short period of time because improvement in sleep latency is minimal
- Limit use to no more than 6 weeks as adverse effects increase with prolonged use
**Antipsychotics**

- Usually used to control difficult behaviors in Alzheimer's and other dementias
- Adverse effects include
  - Postural hypotension, dizziness, blurred vision and sedation
  - Increased risk for cerebrovascular accident and mortality in patients with dementia
- Avoid unless nonpharmacological options have failed and/or are not possible
  - Difficult to avoid in hospice patients. Make sure extra fall precautions are taken

**Anticonvulsants/Mood-stabilizers**

- Developed to treat seizures, stabilize mood in patients with bipolar disorder and to treat difficult dementia behaviors
- Side effects include: dizziness, ataxia, gait, unsteadiness, incoordination
- Also used to treat nerve pain e.g. Gabapentin
  - May not affect balance as much as other seizure drugs
  - Should be gradually titrated over 3 days upon initiation
- Avoid anticonvulsants except for seizure and mood disorders
  - Use lowest effective dose when possible
Antidepressants

- Used in the treatment of depression and sometimes anxiety
- Sedating and cause orthostatic hypotension.
- Commonly used antidepressants include:
  - Tricyclic antidepressants (Amitriptyline and Nortriptyline)
    - Higher risk than other antidepressants
  - SSRI (Sertraline, Citalopram, Escitalopram, Paxil and Fluoxetine)
- Benefits outweigh risks in elderly
  - Extra fall precaution should be taken

Analgesics

- **Opioids**
  - Use is inevitable in most hospice patients
    - Simplify regimen e.g. use of 1 long acting and 1 short acting opioid/central analgesic
  - Adverse effects include:
    - QT prolongation, orthostatic hypotension, CNS depression, dizziness, confusion
  - Dosage adjustment needed in patients with severe renal or hepatic impairment
    - Adjust dose accordingly based on patient response. If patient is too sedated, consider use of long acting opioids or reduce the dose of the short acting opioid
- **NSAIDS**: usually at higher doses
Anticholinergics

- Clearance reduces with advanced age
- Cause sedation, confusion
- Meds include:
  - Antihistamines (first generation)
    - Use only for acute treatment of severe allergic reaction
    - Do not use as maintenance for sleep
  - Antispasmodics
    - Atropine, Hyoscyamine, Scopolamine, Bentyl
  - Skeletal muscle relaxants
    - Soma, Cyclobenzaprine, Methocarbamol
  - Antimuscarinics
    - Detrol, Ditropan, Vesicare, Enablex

Antidiabetic agents

- Patients at increased risk of hypoglycemia
- Meds include:
  - Insulin
  - Sulfonylureas
    - Glipizide, Glyburide, Glimepiride
Medications that cause orthostatic hypotension

- Cardiovascular agents
  - Orthostatic hypotension, dizziness, syncope, bradycardia, impaired cerebral perfusion
    - Beta blockers
    - Calcium channel blockers
    - ACE inhibitors
    - Antiarrhythmics
    - Clonidine
    - Hydralazine
    - Diuretics
    - Medications for BPH e.g. Cardura and Terazosin

Management of postural hypotension

A: Abdominal compression
B: Bolus of water prior to prolonged standing and bed elevated 4 inches
C: Contract muscles below waist to raise BP
D: Drugs such as Midodrine, Pyridostigmine and Fludrocortisone
E: Educate patients on symptoms that indicate low BP and causes of low BP
F: Fluids and salt
Anticoagulants

- Do not cause fall
- Consider discontinuing medications as risks often outweigh benefits
  ➢ Increase bleeding risk ➢ increased severity of injury
- Not relieving symptoms
  ➢ Typically used for prevention – Anticoagulants reduce stroke risk by about 4% per year on average
- Contraindicated for patient with organ failure
- Use extra fall precautions

EXTRINSIC FACTORS

- Environmental hazards
  ➢ Wet floors
  ➢ Loose stair railings
  ➢ Clutter
  ➢ Furniture, lamps, cords
- Ill-fitting clothes and foot wears
- Improper ambulation
- Improper bed heights
- Poor room lighting
How to prevent falls

- STOP medications when possible
- SWITCH to safer alternatives
- REDUCE medications to the lowest effective dose

What role do Pharmacists play?

- Recommend when to discontinue meds
  - Palliative vs non-palliative
- Run a drug interaction search
- Identify when to discontinue meds
References


- Important Facts about Falls. February 2017. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control


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