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I Wont Fall for That Again! – Evidence Based Fall Prevention in the Elderly

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Learning Objectives

1. Explain the significance of falls to elders and society
2. Identify fall risk factors
3. Assess elderly fallers
4. Apply evidence based fall interventions
Definition of a Fall

• A fall is an event which results in a person coming to rest inadvertently on the ground
• Not a consequence of loss of consciousness, seizure or sudden paralysis

• ICD-10 codes
  • E880-E888.9 Accidental fall
  • R29.6 Repeated falls
Etiology of Falls in Older Adults

• Result from the cumulative effects of
  • Impaired gait and balance
  • Aging changes
  • Polypharmacy
  • Cognitive impairment
  • Acute illness, hypotension
  • Environmental factors
Frequency of Falls in adults over 65

- Community dwelling elders – 30 to 40% per year
- Nursing home residents – over 50% fall during stay
- Hospitalized elders – 3 times the outpatient rate
Morbidity and Mortality from Falls

- Falls are the leading cause of fatal injuries over age 65
- Over 800,000 hospital admissions per year for falls
- 70% of accidental deaths over age 75 are due to a fall
  - Mortality from a fall is highest among older white men
- “1/3 of older adults fall per year, 1/3 of falls cause injury, 1/3 of injuries are serious”
  - Serious injuries – fractures, head injuries, lacerations
- Falls are a common cause of immobility, ADL dependence, downward spiral and institutionalization
Economic Costs of Falls

- About 10% of ED visits among the elderly
- 1/3 of these were admitted to the hospital
- Mean length of stay 5.5 days
- Total cost of older adult fall injuries was $31 billion in 2014
Fall Risk Factors in Elders

• **Intrinsic**
  • **Acute illness**
  • **Vestibular** (balance) dysfunction
  • **Cardiovascular** (arrhythmias, orthostatic hypotension, cardiac syncope)
  • **Neurologic** (Parkinson’s disease, neuropathies, myelopathies, stroke, cognitive impairment, “senile” gait)
  • **Musculoskeletal** (foot, knee and leg disorders affecting strength, mobility and gait)
  • **MEDICATIONS!**
Medications and Fall Risk

- Use of more than 4 medications may increase fall risk.
- Many drug classes are linked to falls
  - Antihypertensives
  - Diabetes meds
  - Anxiety/mood/sleep medications
  - Antipsychotics
  - ETC! Any medication that alters alertness, concentration, judgment, gait/balance
Extrinsic Fall Risk Factors

• Environmental hazards
  • Contribute to over 50% of falls in elders
  • 70% of these falls happen at home
  • Kitchen, bathroom, stairs are most common sites
  • Slippery surfaces, loose rugs, cords, poor lighting, uneven/unmarked steps, clutter etc.
Screening for Fall Risk

• Ask all adults over 65 if they have
  • Fallen 2 or more times in the past year
  • Sought medical attention after a fall, or
  • Feel unsteady when walking

• Refer for further assessment if any positive response

• Do a gait/balance evaluation if the elder had one fall without injury – refer if abnormal

• Fall risk assessment is part of Welcome to Medicare and Medicare Annual Wellness visits
Fall Risk Assessment

• Falls history
  • Number, circumstances, warning symptoms, location, time of day, activity, footwear, assistive device, glasses
  • Injuries, any treatment
  • Is the elder able to get up after a fall?

• Medications
  • Psychoactive drugs, diuretics, blood pressure and diabetes meds
  • Any drug causing sedation, confusion, altered gait, balance, alertness and judgment.
Falls Risk Assessment – physical, lab

• Physical Exam
  • Orthostatics, cardiovascular, neurologic, legs/feet/shoes
  • Gait/balance tests – on STEADI site – can be done by team member
    • Timed Up and Go (TUG)
    • 30 second chair stand test
    • 4 stage balance test
  • Functional assessment – ADLs, IADLs
  • Cognitive screen – Mini-Cog

• Lab, imaging – not always indicated
  • Consider acute illness as a cause of a fall
  • CBC, Chem panel, TSH, B12 level, vitamin D level
  • Xrays, head CT if indicated by presentation, injuries
  • Bone density study when stable
Approach to Managing Fall Risk

• Ask what elder thinks causes their falls
• Ask about fear of falling
• Educate – many falls can be prevented
  • Beware overprotective caregivers!
  • Nursing home placement is not the answer to falls!
• Focus on quality of life, independence, values, goals of care
• STEADI toolkit has many patient/caregiver resources
  • http://www.cdc.gov/injury/STEADI
Evidence Based Fall Prevention Interventions

• Strength and balance exercise interventions are the most effective
  • Both individual and group exercises
  • Walking alone has not been shown to prevent falls
• Home environmental assessment by OT or other trained clinician
  • Effective alone or as part of multifactorial intervention by a team
  • Covered by Medicare if elder qualifies as homebound
  • Assesses ADLs, cognition, vision, footwear, lighting, clutter, outside hazards
  • Teaches adaptive safety behaviors in the home
• Physical therapy
  • Gait/balance assessments
  • Exercise programs
  • Mobility aids
  • Anti-slip shoe devices for ice
More interventions

- Community fall prevention programs
  - Otago home exercise program
  - Group tai chi classes
  - What do you have in your community? AOA endorsed programs
- Reduce doses and numbers of prescription medicines
- Calcium and vitamin D supplementation
  - 1200 mg calcium from diet and supplements
  - 1000 to 2000 iu vitamin D
- First eye cataract surgery shown to decrease falls
- Carry cell phone or wear medical alert device
Hospital Fall Prevention Best Practices

• Standardized assessment of fall risk factors
  • Similar risks PLUS acute illness, tethers (eg IV poles), delirium, new medications, sleep deprivation, etc.
  • Beware Alarm and Risk Score fatigue! targeted to risk factors

• Universal fall precautions
• Individualized care planning and interventions
• Mobility algorithms
• ACE unit and HELP studies – ambulation does not increase falls
• Postfall procedures

• AHRQ: Preventing Falls in Hospitals - A Toolkit for Improving Quality of Care
• HELP website – includes mobility program information
Barriers to Ambulation of Older Hospitalized Patients

- Pain, fatigue, weakness
- Lines, catheters
- Nurse staffing, training
- Medical focus
- Environmental obstacles
- Patient, family reluctance
- Bedrest orders!
Fall Injury Prevention in Nursing Facilities (NF)

- Cardiovascular causes of falls are more common in NFs
  - Bradycardia, orthostatic or postprandial hypotension, cardiac event
- Alarms don’t prevent falls
  - Restraints increase falls and cause many other harms
- Evidence based interventions
  - Comfort rounds, fall prevention rounds
  - Bed height appropriate to resident, functional status
  - Fall pads when in bed
  - Hip protectors
  - Restorative nursing
  - Activities, exercise!!
Summary

• Balance, medications and home safety should be addressed in all high risk fallers
• Leg strength, vision, footwear, calcium, vitamin D and carrying a cell phone are other evidence based interventions
• Refer for effective fall prevention programs endorsed by public health departments and Area Agencies on Aging
• Monitor repeat fallers
  • Clinical Modification (ICD-10-CM) code R29.6 for repeated falls
Key Points

• Ask about falls at least annually
• Falls are multifactorial
• Use evidence based assessments and interventions, targeted to risk factors and setting
• Many falls can be prevented!

• QUESTIONS??
References

General fall and fall injury prevention
• http://www.cdc.gov/injury/STEADI

Preventing Falls in Hospitals A Toolkit for Improving Quality of Care
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