Falls: A Geriatric Syndrome

Assessment and Prevention

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Blast from the Past: Quick Review

- List the 5 ways that old people get sick
  - Anorexia
  - Functional decline
  - Urinary incontinence
  - Delirium
  - Falls

- Remember…it’s just like the fussy or lethargic baby!!!!!!!!!!!!!
HOW ARE YOU FEELING TODAY?

I FEEL JUST LIKE A NEWBORN BABY.

REALLY?

YES. NO HAIR, NO TEETH, AND I THINK I JUST WET MY PANTS.
2 Minute Brainstorm
Epidemiology of Falls

- > 1/3 of people age 65 and older fall each year
- Of those cases 50% are recurrent falls
- Falls are the leading cause of death from injury in people age 65 and older
Epidemiology of Falls

~ 1 in 10 falls results in serious injury
  - Hip or other fracture
  - Subdural hematoma or other head injury
  - Serious soft tissue injury

Among the elderly, falls account for
  - 10% of ER visits
  - 6% of urgent hospitalizations
Who Cares?
Sequelae of Falls

- Restricted mobility
- Functional decline
  - ADLs – “DEATH” (Dressing, Eating, Ambulating, Toileting, Hygiene)
  - IADLs – “SHAFT” (Shopping, Housekeeping, Accounting, Food Preparation, Transportation)
- Increased risk of nursing home placement
Causes of Falls

- Usually multi-factorial
- Interactions between intrinsic and extrinsic factors
- Interactions between pre-disposing factors and precipitating factors
A = Patient with an accidental fall and no intrinsic or extrinsic risk factors
B = Patient with acute illness
C = Patient with moderate illness, loss of mobility and some prescription medications who falls because of an extrinsic factor
D = Severely ill patient with many medications who falls even without extrinsic factors
E = Elderly patient with numerous age-related changes who falls because of an extrinsic factor
Risk Factors

- Weakness
- Vision impairment
- Arthritis
- Gait instability
- Balance problems
- Dizziness
- **Medications**
  - Drug-drug interactions
  - Drug-disease interactions
- Recent Hospitalization
- Alcohol Use

- Orthostasis
- Depressive Symptoms
- Cognitive Impairment
- Environmental Hazards
- Movement Disorder
  - Parkinson’s Disease
- Age>80
- Use of assistive device
  - proper use?
- History of falls
- Acute illness or exacerbation of chronic illness
Risk Factors

- The risk of falling increases as the number of risk factors increases
- In a cohort of community dwelling elders...
  - No risk factors: 8% risk of falling
  - > 4 risk factors: 78% risk of falling
Medications and Falls

- Meds are among the most readily modifiable risk factors
- 4 or more medications (polypharmacy) confers an increased risk of falling
- Psychotropic agents have the strongest link to increased risk of falling
- Try to avoid the Beer’s List meds…
Medications and Falls

- “Start low and go slow”
- Minimum number of medications
- Educate pts regarding the indications for each medication
- Perform “brown bag biopsies” often
- Review meds regularly (esp. if pt sees other MDs)
- D/C drugs of uncertain benefit
- Diligently look for drug/drug and drug/disease interactions
  - Look for duplication of therapeutic action
2 Minute Brainstorm

- A 79 yo female with a PMHx of CHF, arthritis, depression, and insomnia presents for a follow-up visit. Her medications include an anti-depressant, a diuretic, an ACEI, a BB, and over the counter sleep and allergy medications. Her chronic conditions appear to be stable. Her daughter reports that the patient has fallen twice in the past 6 months. **What else do you need to know? What fall risk factors can you identify?**

“I’ve fallen and I can’t get up!”
Assessment: Low Risk or High Risk?

- Tailored to each patient’s needs based on assessment of risk (low vs. high)
  - Back-packing across Europe?
    - Brief assessment
  - Hanging out at the SNF? Previous falls?
    - Comprehensive and detailed assessment
Assessment: The Essentials

- Take a good history
  - Previous falls: “If you don’t ask…they won’t tell”
  - Inquire about fear of falling, and perception of gait stability
    - Sometimes you have to be sneaky…
  - Details about the circumstances of the fall
    - Eye witness accounts?
    - High risk activities?
    - How did you feel leading up to the fall (immediately and in weeks preceding the fall)?
    - Medications and recent changes?
    - Diet and recent changes?
Assessment: The Essentials

- Risk Factors
  - Medicines, medicines, medicines!
  - Modifiable (med side effect, muscle weakness, hypotension, etc)
  - Non-modifiable (blindness, hemiplegia, etc)

- Functional Status

- Environmental Hazards
  - Home safety evaluation?
Assessment: The Exam

➢ Comprehensive PE
  • Orthostatic Vital Signs…
  • HEENT
    • If there is dizziness and no other etiology is found, consider the ears and the nose
      • Wax, Eustachian Tube Dysfunction (ETD)
      • Allergic rhinitis = possible ETD = vertigo = falls
Assessment: The Exam

- Muscle tone, rigidity?
- Joints
- Neurologic Exam
  - Reflexes, proprioception, strength, cerebellar function, peripheral nerves, etc
- Watch them walk…
- If you are short on time…
  - Timed Get Up and Go test
    - Rise from a hard chair (without using the arms), walk 10 feet, turn around, return, and sit back down in the chair
    - > 10 seconds = increased risk of falling
Assessment: Test/Studies

- **Laboratory Tests (if indicated)**
  - UA/UCx (NOT REFLEX!!!!!!)
  - CBC (get the diff), CMP, TSH-r, B12, 25-hydroxy vitamin D

- **Other studies (based on exam findings)**
  - CXR for abnormal lung exam
  - EKG for ectopy or palpitations
Then What?

- Reverse any underlying etiologies
  - Don’t underestimate the power of treating SAR, ETD and ear wax!
- Modify medications according to principles mentioned above
- Physical therapy
  - Assistive devices if necessary
- Home safety evaluation
  - Modifications if necessary
Reducing Falls: Home Safety
Home Safety Checklist

- All Living Spaces
  - Remove throw rugs
  - Secure carpet edges
  - Remove low furniture and objects on the floor
  - Reduce clutter
  - Remove cords and wires on the floor
  - Check lighting for adequate illumination at night (esp pathways to the bathroom)
  - Secure carpet or treads on stairs
  - Install handrails on stair cases
  - Eliminate chairs that are too low to sit in and get out of easily
  - Avoid floor wax
  - Ensure that telephone can be reached from the floor
Home Safety Checklist

- **Bathrooms**
  - Install grab bars in the bathtub or shower and next to the toilet
  - Use rubber mats in the bathtub or shower
  - Take up floor mats when the bathtub or shower is not in use
  - Install a raised toilet seat
Home Safety Checklist

- Outdoors
  - Repair cracked sidewalks
  - Install handrails on stairs and steps
  - Trim shrubbery along the pathway to the home
  - Install adequate lighting by doorways and along walkways leading to doors
Success in Fall Prevention

- Most successful approaches are multifactorial assessments followed by targeted interventions
  - Gait training
  - Exercise programs with balance component (Tai Chi)
  - Med review/modification
  - Advice about assistive devices
  - Modification of environmental hazards
  - Treatment of underlying diseases
...and if a fall occurs anyway?

- Reduce the likelihood of fractures
  - Low bone density increases the risk of hip and other fractures
    - Dexa scans
    - Vitamin D deficiency: VERY common in the elderly

- Hip Protectors
  - Small RCT showed efficacy in high risk patients (60% reduction in hip fracture, 80% when worn consistently)
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“I’ve fallen and I can’t get up!”
References

- Fuller, GF. Falls in the elderly. Am Fam Physician 2000;61(7):2159-2168
- Tinetti, ME. Preventing falls in elderly persons. NEJM 2003;348(1):42-49
(Almost) The End

Questions?
“Self-DeFENCE”: Assistive Devices