PRISMA HEALTH®

62nd Annual Greenville Postgraduate Seminar
Spotlight: Primary Care

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Don’t Let Me Down

A New Approach to the Positive Fall Screen

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Objectives

• The Statistics
• M&M
• Risk Factors
• Case presentation
• Patient assessment & workup
• De-prescribing
• Key takeaways
• Community resources
• References
The What
Older adults are falling

- Estimated 29 million falls in USA annually\(^1\)
  - More common if comorbid poor health
  - Woman > men
- 35% of adults over the age of 65 years fall annually\(^1\)
- 50% of adults over the age of 80 years fall annually\(^2\)
- 50% of individuals in the long-term care setting fall annually\(^3\)
- 60% of falls with injury have a positive h/o falls in the previous year.\(^4\)
OUR older adults are falling

• Data obtained from the Greenville Memorial Trauma Registry
• Data is reflective of the 2018 Calendar Year
Number of Falls by Age

- 0 to 10: 182
- 11 to 20: 52
- 21 to 30: 29
- 31 to 40: 45
- 41 to 50: 52
- 51 to 60: 128
- 61 to 70: 149
- 71 to 80: 192
- 81 to 90: 159
- 91 to 100: 46
Geriatric Mechanism of Injury
2016 vs. 2018

- Total Trauma Volume
  - Increased by 5.8%

- Geriatric Volume
  - 65 years and older
    - Increased by 22%
  - Falls
    - Increased by 18%
Morbidity & Mortality

• 95% of hip fractures are a result of falls

• Hospitalizations from falls resulting in hip fracture or other injuries lead to worse outcomes and a greater chance of nursing home admission

• 75% of older adults who sustain hip fractures, do not recover pre-injury functional status

• The estimated cost of fall-related injuries for individuals older than age 65 in the United States in 2015 was USD $50 billion
OUR Morbidity & Mortality

- Data obtained from the Greenville Memorial Trauma Registry
- Data is reflective of the 2018 Calendar Year
Morbidity

• 34 deaths related to falls
  • 79% of these patients were 65 or older
• For patients 65 and older
  • Mortality rate of 6% for patients admitted due to Falls
Hospital Disposition

- Geriatric Patients
- Geriatric Fall Patients
Fear of Falling AKA Post-Fall Anxiety Syndrome

• 80% of older women preferred death to a "bad" hip fracture that would result in nursing home admission ⁹
• 600 older adults ¹⁰
  • 60% reported moderate activity restriction
  • 15% severe activity restriction
• 50% of patients after hip fracture ¹¹
The Why
Intrinsic Risk Factors

- Past history of a fall
- Lower-extremity weakness
- Advanced Age
- Female gender
- Cognitive impairment
- Balance problems
- Arthritis
- History of stroke
- Orthostatic hypotension
- Dizziness
- Anemia
- Neuropathy
- Drugs
Extrinsic Risk Factors

- Environmental Hazards
- Improper foot wear
- Tethers
Precipitating event

- Trip or slip
- Bumped or pushed
- Acute medical illness
- Syncope/Dizziness
The How
Fall Detection

• Fall screen
  • Have you fallen in the last 3 months
• Present with an acute fall
• Note gait imbalance/unsteadiness on exam
Multiple choice question

• OA #1
  • 85 y/o F
  • PMH: HTN with CAD, DM, h/o DVT
  • Outpt + fall screen, not addressed at visit

• OA #2
  • 85 y/o F
  • PMH: HTN with CAD, DM, h/o DVT
  • ED s/p fall, with FN fracture

• OA #3
  • 85 y/o F
  • PMH: HTN with CAD, DM, h/o DVT
  • OutPt + fall screen, + intervention to reduce future fall risk
History

• HPI
  • Activity at the time of the incident
  • Prodromal symptoms (lightheadedness, imbalance, dizziness)
  • When & where the fall occurred
  • Loss of consciousness is associated with injurious falls and should raise important considerations such as orthostatic hypotension, cardiac disease, or neurologic disease.

• Previous fall is the most important consideration as a risk of future falls
  • Information on previous falls should be collected to identify patterns
History

• Medications
  • Psychotropics, sedative hypnotics, antidepressants, and antihypertensive, antihyperglycemics.
  • Timing of medication administration to falls

• PFSH
  • Identification of underlying chronic diseases that increase falls risk
    • Parkinson disease, chronic musculoskeletal pain, knee osteoarthritis, cognitive impairment, dementia, stroke, and diabetes.

• Alcohol use

• Environmental factors
  • Information on lighting, floor covering, door thresholds, railings, and furniture
Physical Exam

• VS

• Postural vital signs

• Vision & Hearing
  • checked with glasses if the patient was wearing corrective lenses at the time of the fall
  • whisper test, finger rub or a hand-held audiometer \textsuperscript{13}

• Heart & Lungs
  • Carotid bruit
Physical Exam

• Musculoskeletal function

• ‘Timed Up and Go' test
  - Rise from a standard arm chair, walking a fixed distance (3 meters/10 feet) across the room, turning around, walking back to the chair, and sitting back down
    - Less than 10 sec normal
    - Observation may help to identify deficits in leg strength, balance, vestibular dysfunction, and gait.

• Functional reach test
  - Comfortable stance without shoes or socks
  - Make a fist and extend the arm forward as far as possible without taking a step or losing balance
    - The reach is measured along a yardstick on the wall
    - Less than 6 inches is abnormal
Physical Exam

• Cognitive evaluation
  • MiniCog/MoCA/MMSE/SLUMS
• Divided attention task
  • Walking while reciting every other letter of alphabet
  • Difficulty in this task portends increased risk of falls \(^{16}\)

• Lower Extremity/Foot Exam
  • bunions, callouses, and arthritic deformities.
  • Reflexes and motor strength
  • Sensory neuropathies also increase the risk of falls \(^{17}\)
Diagnostic Testing

• Highly patient dependent
• CBC, BMP
  • anemia, volume depletion, hypoglycemia
• 25-OH vitamin D

Can be considered:
• B12, Magnesium
• HbG A1C
Diagnostic Testing

Can be considered

- Echo
  - New heart murmur, syncope, prodromal

- MRI spine
  - Gait disorders
  - Abnormalities on neurologic examination
  - Lower-extremity spasticity or hyperreflexia
Back to “our patient”

• 85 y/o Female
• Hx: fell while preparing for bed, slipped walking to the bathroom in socked feet
  • Associated injury of RUE skin tear
  • 2 months prior fall while gardening (no injury, not reported)
  • No associated prodrome, sz, CP, vertigo, lightheadedness
• Functional Hx: she is fully independent in ADL/IADLs
The Rest of the Hx

• PFSH
  • HTN with CAD – PCI in 2015
  • DVT in 2006
  • DM2 with A1C 6.2
  • OA of L knee
  • widow for 5 years
  • enjoys a glass of wine with dinner

• Meds
  • Lisinopril, Toprol, ASA 81, Plavix, Pradaxa, Metformin, Glyburide, Lexapro, Mobic, Protonix
Physical Exam

- HR 75; 135/50; 97.6; 98% RA
- orthostatics negative
- Vision: 20/40 with glasses and she reports needing to schedule her cataract surgery
- Hearing intact to finger rub
- Heart & Lungs WNL
Physical Exam

• Musculoskeletal function
  • 'Get Up and Go' test less than 10 sec
    • Noted antalgic gait on L

• Cognitive evaluation
  • MiniCog 5/5

• Lower Extremity/Foot Exam
  • OA changes to both knees
    • Medial joint line TTP on L
  • Patellar reflexes 2+ and 4+/5 strength
  • Reduced proprioception bilaterally
Lab Workup

- CBC, BMP
- Magnesium
  - Chronic PPI use
- B12
  - Metformin use and reduced proprioception
Referrals & Recommendations

• Community programs for exercise
  • Gait and balance training
  • Strength training
  • Movement (such as tai chi or dance)
  • Aerobic
• USPSTF recommends exercise to prevent falls for adults aged 65 and older
Referrals & Recommendations

• Ophthalmology for her cataract
• OT for home safety evaluation
• Consider reduction in EtOH use
  • Proportional to use
• Wear gripped slippers/socks
• Consider Orthopedic referral for knee replacement
Medication review

• Medications are one of the most readily modifiable intrinsic risk factors
• Greater numbers of medications of any type, &/or recent changes in the dose, are associated with increased fall risk

• PFSH
  • HTN with CAD – PCI in 2015; DVT in 2006; DM2 with A1C 6.2, OA of L knee
  • widow for 5 years
  • enjoys a glass of wine each night
• Meds: Lisinopril, Toprol, ASA 81, Plavix, Pradaxa, Metformin, Glyburide, Lexapro, Mobic, Protonix
De-prescribing

• Lisinopril, Toprol
  • Isolated systolic HTN (135/50)
  • Low diastolic pressure may impair tissue perfusion 23-28
  • + association between anti-HTN drugs and risk of falls
    • but the association was not significant for beta blockers 29
  • Recommend stopping or dose reducing Lisinopril
    • Goal is DBP above 60, and allowance of SBP 140-150s

• Metformin, Glyburide
  • DM2 with A1C 6.2%
  • Goal A1C 7.5-8%
  • Recommend stopping Glyburide
De-prescribing

• ASA 81, Plavix
  • CAD with PCI 2015
  • Consider stopping Plavix

• Pradaxa for DVT in 2006
  • Consider discontinuation of DOAC
De-prescribing

- Lexapro
  - Started at death of her husband 5 years ago
  - Daily use of SSRIs in adults >50 years
    - associated with a 2-fold increased risk fragility fracture
  - Recommend Gradual Dose Reduction and attempt taper off

- Mobic
  - L knee OA
  - Contraindicated in HTN, older adults
  - Recommend discontinue Mobic
  - Trial APAP, topical NSAIDs, joint injections, TKA

- Protonix
  - No documented reason for therapy
  - Presumed SE of triple therapy ? GI proph
  - Recommend transition to H2 blocker and attempt to wean with prn antacids
Other Considerations

• PT
  • Weakness, gait disturbance
  • Detailed M/S assessment
  • Use of assistive device

• Podiatry/Orthotist
  • If foot pathology
Preventing Fall Complications

• DEXA
  • Calcium & Vitamin D supplementation
• ½ older adults who fall cannot get up independently 31
  • "long lie"
  • Call Alarm Systems
Things to avoid

• “Mechanical Fall”
  • ill-defined
  • Potential to impede the appropriate assessment

• Downplaying non-injurious fall

• Not accounting for potential patient fear
Key Take-aways

• Our patients are falling
• Falling is NOT OK
• Implementation of a single intervention to prevent falls has the potential to avert $100 million in direct medical costs annually \(^{32}\)
Prisma Health-Upstate Trauma Program

Senior Lifestyle Injury Prevention
- 20 minute senior injury prevention interactive discussions
  Balance Your Life (fall prevention), My Home, Safe Home (home safety), On the Right Road (motor-vehicle safety), Stepping Out Safely (pedestrian safety)

Contact:
Mike Walls, Trauma Program Coordinator
Phone: 864-455-5313
Email: mike.walls@prismahealth.org
Senior Action

Wellness Classes:
Silver Sneakers, Aerobics, Zumba, Pilates, Tai Chi, Yoga, Limited Exercise, Arthritis Exercise

Locations:
Senior Action headquarters (50 Directors Drive), David Hellams Community Center, Freetown Community Center, Mt. Pleasant Community Center, Needmore Community Center, Pleasant Valley Connection, Slater-Marietta Community Center, Stearling Community Center, Greenville Aquatic Complex

Contact:
Katherine Jones, Wellness Coordinator
Phone: 864-467-3660 x103
Email: katherine.jones@senioraction.org
YMCA

Wellness Classes:
Silver Sneakers (Classic, Stability, Circuit, Yoga, Yoga Stretch), Silver and Fit, Aquatics, Fit for Life, Active Adults, Senior Interval Core, Yoga, Zumba.

Locations:
Caine Halter family, Eastside Family, Theisen Family, Prisma Health Family, Verdae, Camp Greenville, Hollingsworth Outdoor Center, Judson Community Center

Contact:
Samantha Sanders, Wellness Director
Phone: 864-412-0288
Email: phwellness@ymcagreenville.org
Clemson Institute for Engaged Aging

A Matter of Balance
- 8-week structured group intervention that emphasizes practical strategies to reduce fear of falling and increase activity level

Location:
Oconee Medical Campus, Senior Solutions Senior Center Seneca

Contact:
Cheryl Dye
Phone: 864-656-4442
Email: balance@Clemson.edu
References

• Greenville Memorial Trauma Registry, special thanks to Ashley Metcalf & Mike Walls


References


References


References


