Falls and Their Prevention: A Geriatrics Imperative

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Definitions

- Unintentional event leading one to be on the ground, not caused by syncope, stroke or seizure (links)
- But the reality is that many falls are not observed, and often the faller cannot give adequate history to rule out 3 Ss
- Falls are most easily classified as environmental (extrinsic) or intrinsic
- Falling, unless easily explained by definite extrinsic phenomena, demands comprehensive evaluation
- If the faller is conscious, stroke usually apparent
- Although a causal factor can often be identified, most falls are multi-factorial; accordingly, interventions should be also
Epidemiology and Consequences

- Over age 65, 1/3 fall annually; ½ >80 – 50% multiple falls
- 6th leading cause for death in women, 4th in men 65-85
- 60% occur in the home
- <10% of falls lead to fracture, but all fear falling again, and quality of life deteriorates – depression, social isolation
- 25% of fallers sent to hospital ED; 40% admitted, cost is >$15 billion annually
Falling is the most common cause for ER visits for Americans >65.

Women who fall double their hip fx risk for each standard deviation decrease in hip bone density.

Lifetime hip fracture risk is 17% in women and 6% in men >60.

10% of hip fracture patients sustain a second one, and most do not regain pre-fracture mobility.
US Death Rates from Falls

Deaths/100,000

Year


Men

Women

NCHS, NCIPC, CDC
Risk Factors (univariate statistical significance)

- History of fall
- Cognitive or visual impairment
- Medications (sedatives, hypotensives, multiple)
- Multiple co-morbidities
- Lower extremity weakness
- Balance or gait abnormality
- ADL impairment
- Depression
- Age >80
- Use of assistive device
- Acute illness, in which falling is a geriatrics syndrome
Geriatrics Syndromes

- Physical or cognitive function loss as primary expression of disease
- Primary pathology not necessarily in organ system with symptoms
  - Falls, “Dysmobility”
  - Confusion (Delirium)
  - Dizziness
  - Syncope
  - Urinary incontinence
  - Weight or appetite loss
Homeostenosis

- A neologism - progressive restriction of physiologic reserve
- Reduced capacity to maintain homeostasis during even mild stress, with early decompensation
- Acute illness or drug toxicity plus the pure aging syndrome results in “homeostenotic” organ crises – the geriatric syndromes
- Falls, syncope, dizziness, confusion, urinary incontinence and loss of appetite or weight can be the sole manifestations of disease in an entirely different organ
  - Glucose intolerance occurs with age, though serum glucose remains in the normal range; stress - infection, injury, CHF, drug toxicity – can provoke severe hyperglycemia and hyperosmolarity with cognitive blunting and even loss of consciousness
Fall Rates by Number of Risk Factors

A

Number of Risk Factors

Percent falling

0 1 2 3 4+

8% 19% 32% 60% 78%

B

Percent falling ≥2 times

0-1 2 3 4+

10% 16% 39% 69%

Nevitt. JAMA. 1989;261:2663
Before the Fall - Prevention

- Identify those at risk – screen all for risk factors
  - Ask about falls
  - Observed up and go test (rise from chair, walk 8 feet, return to chair and sit): >8.5 seconds associated with fall risk
- If positive up and go, history of fall or risk factors detected, proceed with comprehensive geriatric assessment (CGA)
Comprehensive Geriatric Assessment

Systematic multidisciplinary evaluation of ability to perform tasks of independent living

- Measure physical, cognitive, psychological, social and environmental domains, (including geriatrics-tailored history and physical exam)
- Identify problems, resources, and strengths
- Need for clinical interventions and services
- Develop, implement and monitor a coordinated care plan, including multi-factorial interventions
Why Do Geriatric Assessment?

- Identify problems - symptom underreporting
  - Functional loss often first disease indication
- Risk identification - death, NH, falls, UI, MVA
- Risk stratification for interventions, Dx or Rx
- Monitor Rx response and disease progression
- Set clinical objectives for Rx or rehab
- Communication among multiple professionals
Principles of Geriatrics Gleaned from CGA Studies

- Loss of function should trigger assessment (don’t forget dementia)
- Depression increases morbidity and mortality, and predicts impaired physical function
- Impaired psychosocial function predicts morbidity, mortality, physical function decline
- Slow or difficult physical performance also risky
- Elders often recover from physical impairments
Assessment at Home

- Identifies problems not detected in office assessment; those needing immediate attention after hospital discharge
  - Environment – hazards, temp, assists
  - Behavior - self-assertive or passive
  - Others - caregiving, impediments
- Home assessment of healthy older people delays functional disability and NH need
After the Fall

- Rule out, treat injury
- Single fall – check gait and balance; if OK, reassure and encourage to resume all prior activities - monitor only
- If gait/balance or multiple falls, CGA to identify risks, especially:
  - History, meds, vision, postural BP, gait and balance, legs, heart, neurologic, environment
- Multi-factorial interventions to remedy impairments and risks