Assessing Frailty

in the Office

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Not all seniors age successfully—whereas some remain active, others become increasingly dependent on others.[1] The term "frailty" is often used to describe seniors with overt disability and who require assistance with activities of daily living. Frailty also refers to seniors without overt disability but who are at increased risk of adverse health outcomes. For example, while some seemingly independent seniors may tolerate an acute illness relatively unscathed, others develop complications. The extent to which an individual is susceptible to poor outcomes is best captured by the concept of frailty.

Robert's case

An 83-year-old man is being considered for an elective ventral hernia repair. He has a history of hypertension treated with hydrochlorothiazide 12.5 mg q.d. He takes dimenhydrinate 50 mg most nights to help him get to sleep and occasional acetaminophen for mild osteoarthritis of the knees. He is otherwise independent in his basic and instrumental activities of daily living, but has been "slowing down" over the last 2 years, no longer walking around the block and restricting his outings. Physical examination demonstrates reduced quadriceps bulk and a sitting BP of 165/80 mmHg. Cognitive testing is normal except for an abnormal clock drawing test, where the hands are incorrectly placed at the "10" and "11" to indicate the time "10 after 11."

Is this man "frail?" If so, how would this affect his management?

What is frailty?

Frailty is a state of increased physiologic vulnerability that arises from decreased reserve across multiple physiological systems.[2,3] Common features include weakness, weight loss, reduced activity and an increased risk of falls, cognitive and mood disorders, loss of independence, hospitalization, institutionalization and death.[4] Frailty is more common among seniors, though considerable variability exists regarding age of onset.[4]

Frailty is associated with chronic disease.[4,5] Few frail seniors have no chronic conditions, whereas an increasing number of chronic conditions confers a greater frailty risk.[5] Frailty occurs in persons with subclinical disease, but is more common in those with symptomatic and advanced conditions.[4,5] However, most persons with chronic diseases are not frail and the exact

Table 1

Clinical Frailty Scale[8]

Frailty level	Description
1. Very fit	Robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the fittest group for their age
2. Well	Without active disease but less fit than people in category 1
3. Well, with treated comorbid disease	Disease symptoms are well controlled compared with those in category 4
4. Apparently vulnerable	Although not frankly dependent, these people commonly complain of being "slowed up" or having disease symptoms
5. Mildly frail	With limited dependence on others for instrumental activities of daily living
6. Moderately frail	Help is needed with both instrumental and basic activities of daily living
7. Severely frail	Completely dependent on others for activities of daily living, or terminally ill

mechanisms linking chronic disease to frailty remain unclear.[4]

How is frailty assessed?

A commonly used approach is to consider frailty as the result of accumulated deficits, including symptoms, signs, disabilities, abnormal clinical measures and illnesses.[2,6,7] Using this approach, frailty indices, consisting of up to 70 deficits, were developed in order to estimate a person's biological age, or overall degree of frailty. These indices are more powerful predictors of mortality than chronological age.[2,6,7]

While powerful, the clinical applicability of such indices is limited. A second approach for measuring frailty has been to describe it as a clinical phenotype. In the Cardiovascular Health Study (CHS), frailty was defined as the presence of three or more of the following five criteria: unintentional weight loss (10 lbs in past year), self-reported exhaustion, weak grip strength, slow walking speed and low physical activity.[5] The Clinical Frailty Scale was developed using data from the Canadian Study of Health and Aging (CSHA) (Table 1).[8] Both of these instruments correlate well with frailty indices, are predictive of frailty-related outcomes and are far simpler to utilize in a clinical setting.[5,8,9]

Frailty not only characterizes seniors with disability, but also seniors at risk of disability, as well as of other poor health outcomes.

Robert's case cont'd

Robert ranks 4 out of 7 on the CSHA Frailty scale (*i.e.*, apparently vulnerable). Robert is counselled against taking dimenhydrinate for sleep, after which his clock drawing normalizes. An ACE inhibitor is prescribed, as well as vitamin D 1,000 IU q.d. Following successful hernia repair, a brief delirium is managed without chemical or physical restraints and he returns home after a brief stay on a geriatric rehabilitation unit.

Take-home message

- Frailty not only characterizes seniors with disability, but also seniors at risk of disability, as well as of other poor health outcomes
- Frailty can easily be assessed in the office using simple, validated instruments
- Frailty can be managed and outcomes and quality of life for frail seniors can be improved

How should frailty be managed?

The literature on comprehensive geriatric assessment (CGA) demonstrates that frailty can be successfully managed. While not all frail seniors require a CGA, certain components are applicable to any setting, including:

- Medication review: frail seniors are at increased risk of adverse drug reactions. The "Beers list" is useful to identify potentially problematic prescriptions for seniors[10]
- Optimize chronic disease management: optimal chronic disease management can prevent complications. For example, use of ACE inhibitors in frail seniors with heart failure may improve function, cognition and mood.[11] ACE inhibitors have been shown to improve walking distance in frail seniors without heart failure, possibly by improving muscle strength and thus may be preferred antihypertensive agents[12]
- Assess cognition: cognitive impairment often complicates frailty and may prevent some seniors from successfully managing their other chronic diseases. The Montreal Cognitive Assessment is more sensitive than the Mini Mental State Examination and may be particularly valuable assessing patients with CVD
- Prescribe exercise: benefits of exercise have even been demonstrated in nursing home patients. Supervised programs specifically tailored to the needs of frail seniors may be preferable
- Screen for osteoporosis: hip and vertebral fractures in frail seniors have disastrous consequences
- Vitamin D: in addition to improved bone health, systematic reviews have shown that prescribing at least 800 IU of vitamin D daily reduces the risk of falls by 20%[13]
- Referrals: frailer seniors may require referrals to home care, falls clinics, day hospitals or to a geriatrician for a CGA

- Treatments: assessing frailty can assist in planning for potentially invasive treatments, identifying seniors who might benefit from tailored anaesthetic approaches, nutritional support, early physiotherapy, or senior friendly hospital programs to reduce the risk of complications and guide discussions about whether less invasive therapies might be preferable

Frailty is increasingly common. Practical instruments have been developed to assess frailty and identify seniors who might benefit from targeted interventions aimed at minimizing their vulnerability to adverse health outcomes and maintain or even improve quality of life. Dx

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