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RAISING AWARENESS ON THE URGENT NEED TO IMPLEMENT FRAILITY INTO CLINICAL PRACTICE

THE ORLANDO FRAILITY CONFERENCE GROUP

Abstract

Frailty has been linked to longer hospital stays and increased mortality in hospitalized patients. Frailty was found at the most common condition leading to death, followed by organ failure, cancer, other causes, advanced dementia, and sudden death. Yet despite evidence linking frailty to poor outcomes, frailty is not implemented clinically in most countries. Since many people are not identified as frail, they frequently are treated inappropriately in health care settings. Participants in the international conference on frailty emphasized the importance of raising awareness about frailty among geriatricians, general practitioners, and other primary care providers in order to implement frailty in clinical practice. The following recommendations were agreed upon: 1. Prioritize the identification of frail older persons in community settings, hospitals, and specialty clinics in order to ensure that people with frailty are treated appropriately and have access to interventional studies; 2. Build frailty clinics as a means of providing optimal management of frail elders; 3. Develop intervention programs incorporating physical and cognitive exercise, social support, and nutrition for people in the earliest stages of frailty in order to slow or reverse frailty; 4. Build stronger basic and clinical research programs in order to better understand the underlying causes of frailty, identify therapeutic targets, and develop new treatment strategies.

Keywords

Frailty; prevention; primary care; public health; disability

Introduction

According to the United Nations, by 2050 there will be 2 billion people worldwide over the age of 60, more than three times as many as in 2000 (1). While this reflects improvements in the health of people worldwide and increased longevity, it also presents challenges for individuals, families, and societies as the numbers of people with frailty, chronic diseases and disabilities also increases (2).

Frailty has been conceptualized as a physiological syndrome reflecting decreased reserve and resilience, which may lead to progressive functional decline, vulnerability to stressors, and an elevated risk of adverse outcomes, including death. It is a major cause of dependency, yet research suggests that it may be possible to prevent disability and

dependency by targeting frail and pre-frail older adults with simple screening tools and effective and sustained interventions (3).

Frailty has been recognized as an important condition by the Institute of Medicine (IOM) (4) and the European Union (EU), although a consensus conference held in 2011 concluded that while frailty has a clear conceptual framework and is useful in clinical settings, there is no single operational definition of frailty that can satisfy all experts and more research is needed (5). Thus, another consensus conference was convened in October, 2012, in Orlando Florida. At this conference, frailty experts met to develop a consensus statement along with delegates from the International Association of Geriatrics and Gerontology (IAGG), the American Medical Directors Association (AMDA), the American Federation of Aging Research (AFAR), European Union Geriatric Medicine Society (EUGMS), International Academy of Nutrition and Aging (IANA), Society on Sarcopenia, Cachexia, and Wasting Disorders (SSCWD), the EU, and the Gateway Geriatric Education Center (GEC) (6).

Strong evidence supports the definition of frailty as a syndrome with a distinct etiology and consisting of a constellation of signs and symptoms that increase vulnerability to stressors and that, taken together, are better at predicting an adverse outcome than any individual characteristic. Fried and colleagues have proposed that the signs and symptoms of frailty result from dysregulated energetics involving multiple molecular and physiological pathways, which lead to sarcopenia, inflammation, decreased heart rate variability, altered clotting processes, altered insulin resistance, anemia, altered hormone levels, and micronutrient deficiencies (7). These physiological impairments result in the five clinical characteristics of frailty: weakness, low energy, slow walking speed, low physical activity, and weight loss (8). The presence of any three of these phenotypes indicates that a person is “frail”; one or two phenotypes indicates “pre-frail”; and none of these characteristics indicates the person is “robust”. Fried and colleagues went on to validate this concept in two large datasets from the Cardiovascular Health Study (CHS) (8) and the Women’s Health and Aging Studies (WHAS) (9). In both data sets, among women between the ages of 70 and 79, the prevalence of frailty was approximately 11% and the presence of frailty was associated with an increased risk of mortality as well as with a dose-dependent (based on the number of frailty criteria) increased risk of developing dependence in activities of daily living (10).

While the Fried and colleagues’ quantifies frailty using five measures, Rockwood and colleagues have developed a frailty index (FI) based on the Comprehensive Geriatric Assessment (CGA), which counts up to 70 items. The FI-CGA thus characterizes frailty across multiple dimensions by including measures of mood, cognition, and social vulnerability (11). In a study of community-dwelling older adults in Canada, the FI-CGA estimated a frailty prevalence of 22.7%, with higher scores predicting an increased risk of death (12).

From frailty to disability

Frailty develops progressively, with the early phase likely most responsive to intervention and the later, non-reversible stages most costly. In a study of 754 community-dwelling, non-disabled older adults, Gill and colleagues showed that frailty is a dynamic process with

frequent transitions. While the overall trend was towards worsening of frailty status, and the likelihood of transitioning from being frail to non-frail was very low, about 10% of prefrail subjects transitioned to non-frail during each 18 month follow-up period (13). Frailty is not synonymous with disability, although frailty is a strong predictor of disability. Both conditions are characterized by functional impairment, however, many disabled people are not frail and the underlying biology of frailty distinguishes it from disability (14). Nor is frailty synonymous with sarcopenia, although sarcopenia is clearly a major contributing factor to frailty (15).

Frailty has been linked to longer hospital stays and increased mortality in hospitalized patients (16). Moreover, in their study of disability trajectories of community-dwelling older persons during the last year of life, Gill and colleagues found that frailty was the most common condition leading to death, followed by organ failure, cancer, other causes, advanced dementia, and sudden death (17). Yet despite evidence linking frailty to poor outcomes, frailty is not implemented clinically in most countries. Since many people are not identified as frail, they frequently are treated inappropriately in health care settings. For example, regardless of age, a frail person may be unable to withstand aggressive medical treatment that could benefit a non-frail person.

Implementing frailty into clinical practice

The identification of frailty in its early stages, i.e., the “pre-frail” stage, is important because of the potential to address treatable conditions such as fatigue and weakness, and slow or reverse functional decline. Intervention studies have also demonstrated the potential for improving frailty status, particularly with exercise-based interventions (18). Nutritional supplementation to address weight loss and muscle dysfunction (19–21), and drugs for conditions such as sarcopenia (22, 23), may also represent feasible approaches to treating the underlying conditions of frailty. Multidomain interventions are also under investigation (24).

Polypharmacy is also thought to be a major risk factor for frailty (25). Thus, identifying frailty in an older person may motivate physicians to reevaluate the drugs they are prescribing. Another possible risk factor is vitamin D deficiency (26), although the evidence is contradictory.

In order for frailty to be incorporated into the routine practice of primary care physicians, a simple screening test is needed. Several different methods of screening for frailty have been developed and validated. The Fried criteria were operationalized into a screening algorithm for use in the Cardiovascular Healthy Study (CHS). The FI-CGA was validated in the Canadian Study of Health and Aging (27). Other frailty measures have also been proposed, including the Study of Osteoporotic Fractures (SOF) Index (28). All of these measures count deficits, and all of them quantify the degree of frailty and thus, the degree of vulnerability to adverse outcomes. Moreover, all of them reflect an aging-associated failure of physiological systems.

The IANA FRAIL scale, based on both the Fried (CHS) and Rockwood (FI-CGA) scales, is a six-question self-report measure that takes less than 30 seconds to administer and has been

shown to predict mortality and disability in older Australians (29) and correlates IADLs and strength and mobility outcomes in middle-aged African-Americans (29, 30).

Informant interviews, for example, the Canadian Study of Health and Aging (CSHA) Clinical Frailty Scale, can also be used as a rapid and reliable screen for frailty. This scale asks the physician to assign a score ranging from 1 (very fit) to 7 (severely frail) based on clinical impression of co-morbidity, cognitive impairment, and disability. It has been shown to correlate with the CGA-FI (31).

Another frailty screening tool that relies on the clinical opinion of the general practitioner has been developed in France. In response to the French government's policy for preventing disability in older persons, a day hospital was established in 2011 at the G erontop ole of Toulouse (i.e., the geriatric center of Toulouse) for the evaluation of frailty and prevention of disability (32). Geriatric patients are referred to the center by general practitioners who detect signs of symptoms of frailty and are screened using a simple, quick frailty questionnaire as well as an assessment of gait speed. The G erontop ole Frailty Screening Tool asks six questions regarding living alone, weight loss, fatigue, mobility, memory, and slow gait speed. If the physician identifies one of these areas as an area of concern, he/she is asked, "In your own clinical opinion, do you feel that your patient is frail and at an increased risk for further disabilities?" It is this last question that is used to identify patients who are frail.

The goal of the G erontop ole Center is to identify frailty in the early stages through a multidisciplinary evaluation, attempt to identify the cause or causes (i.e., underlying diseases or risk factors), and implement multidisciplinary interventions adapted to each patient's individual needs. These interventions may include nutrition, physical exercise and/or physical therapy, social support, and education. Patients are followed up principally by their general practitioner as well as through phone contact and a structured interview with a nurse from the center to assess the efficacy of the interventional plan.

Psychosocial and cognitive contributions to frailty

Research from the CSHA has also shown that social vulnerability, distinct but related to frailty, is also associated with higher mortality in the elderly, and that social factors such as socio-economic status, social support, and social engagement can be quantified using a social vulnerability index (11). Using this tool, they found that even among healthy and fit elders, social vulnerability was associated with a 22% increased risk of mortality (33). Other frailty models incorporate psychosocial and cognitive components to varying degrees (34), acknowledging that these factors play important roles in the development of frailty.

Recommendations

Participants in the Consensus Conference used a modified Delphi process to reach consensus on major points related to frailty (6). In addition, through their discussions, participants emphasized the importance of raising awareness about frailty among geriatricians, general practitioners, and other primary care providers in order to implement frailty in clinical practice. The following recommendations were agreed upon:

- Prioritize the identification of frail older persons in community settings, hospitals, and specialty clinics in order to ensure that people with frailty are treated appropriately and have access to interventional studies.
- Build frailty clinics such as the one built at the G erontop ole of Toulouse as a means of providing optimal management of frail elders.
- Develop intervention programs incorporating physical and cognitive exercise, social support, and nutrition for people in the earliest stages of frailty in order to slow or reverse frailty.
- Build stronger basic and clinical research programs in order to better understand the underlying causes of frailty, identify therapeutic targets, and develop new treatment strategies.

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Appendix

The Orlando frailty conference group include six major International (International Association of Gerontology and Geriatrics, Society of Sarcopenia, Cachexia and Wasting Diseases, and the International Association of Nutrition and Aging), European (European Union Geriatric Medical Society) and United States of America societies (American Medical Directors Association and American Federation of Aging Research) were asked to provide delegates to attend the consensus meeting.

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