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Narrative Review

Recognising older frail patients near the end of life: What next?

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ABSTRACT

Frailty is a state of vulnerability resulting from cumulative decline in many physiological systems during a lifetime. It is progressive and considered largely irreversible, but its progression may be controlled and can be slowed down and its precursor –pre-frailty- can be treated with multidisciplinary intervention. The aim of this narrative review is to provide an overview of the different ways of measuring frailty in community settings, hospital, emergency, general practice and residential aged care; suggest occupational groups who can assess frailty in various services; discuss the feasibility of comprehensive geriatric assessments; and summarise current evidence of its management guidelines. We also suggest practical recommendations to recognise frail patients near the end of life, so discussions on goals of care, advance care directives, and shared decision-making including early referrals to palliative and supportive care can take place before an emergency arises. We acknowledge the barriers to systematically assess frailty and the absence of consensus on best instruments for different settings. Nevertheless, given its potential consequences including prolonged suffering, disability and death, we recommend identification of frailty levels should be universally attempted in older people at any health service, to facilitate care coordination, and honest discussions on preferences for advance care with patients and their caregivers.

1. Introduction

As the population survives longer thanks to technological advances and improvements in public health infrastructure, it is projected that by 2050 one in five people will be aged 60 and over [1]. Frailty is an age-related syndrome associated with multiple organ failure and declines in physiological reserve that makes older people susceptible to adverse health outcomes [2] such as falls [3], functional dependency [4–6], institutionalisation [3] and death [3,5,6]. Frailty has already become a global public health priority [7] and specialised geriatric services worldwide are under pressure to meet the complex management needs of frail adults with chronic illness [8].

Recognising frail patients who are approaching the end of life is complex and often delayed due to clinical uncertainty [9] and public perception that the end of life is a point in time rather than a process that can take days, weeks, or years [10]. In fact, the end of life journey can commence years earlier with frailty being one of its salient features. The coexistence of frailty and cognitive impairment and dementia indicates that the dying trajectory has commenced [11]. Delays in diagnosing worsening frailty as a terminal process (i.e. end of life) [9] often lead to aggressive and non-beneficial treatments [12] that can impair quality of remaining life and increase suffering, foster false hope [13] and preclude healthy grieving for both patients and their families.

According to guidelines, a comprehensive frailty assessment in all older adults is recommended across the continuum of care because it is known that frailty status has a strong association with poor outcomes [14]. However, it is not routinely measured in some settings, for

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example in the emergency department (ED), perhaps due to the perceived duration of the assessment in an already busy environment [15]. Reasons for overlooking frailty in the clinical setting is the slowly progressing clinical presentation or attribution of frailty to normal ageing process rather than a disease [16]. Other factors are: the clinicians focus on a specific organ system based model [17] to which frailty–being a multisystem disease–does not conform; lack of geriatric training by non-geriatric clinicians [18]; or lack of awareness of frailty tools available to examine older adults [19]. All of this leads to a delay in recognising frailty especially in the early stages where targeted interventions to delay or slow-down the progression would be of benefit [20].

This review aims to present an overview of the importance and feasibility of timely recognition of frailty, and discuss the how, where and *so what* of identifying older frail people. Recommendations for practice across all settings are also presented.

2. Why identify frail people near the end of life

Frailty is progressive and the transition from pre-frailty to frailty is far more common than the reverse [21]. Inexorable decline in function despite treatment of the underlying medical conditions, is a marker of impending mortality [22]. Preventing prolonged suffering and facilitating the transition from active treatment to comfort care are the goals of identification of serious life-threatening illness [23] i.e. people nearing the end of life. Identifying seniors at risk in emergency departments has been attempted with mixed results and modest predictive accuracy [24]. Frailty is understood to be the best predictor of mortality in community dwelling older people, surpassing the predictive ability of co-morbidity and biological age [25]. Regardless of how frailty is measured, the rates of functional decline and mortality are higher among the frail than in non-frail persons [26].

For frail older adults the dying journey is often prolonged into years and it is at the point when there is a significant decline or a significant stressful event -such as a hip fracture or a pneumonia episode- that recognising a person has commenced the dying trajectory is essential to guide the transition from active curative treatment to palliation and holistic supportive care [27].

3. How to identify frailty and how accurate assessments really are

Despite a 'call for action' [28] and the availability of instruments, there is still no consensus on an operational definition [29] of frailty and how to measure it [30]. However, it is well accepted that a comprehensive geriatric assessment (CGA) is the gold standard to identify frailty in community settings, and when conducted on the ward after an emergency admission and followed by a care plan is associated with higher likelihood of patient discharge to their own home and longer survival [31]. However, it is time-consuming (takes at least 1 h) and resource-intensive; requires specialist skill and physical measurement of anthropometric components which may be impractical to undertake in the ED setting where space is scarce and patients are immobilised, or limited by cardiac monitoring technology. As an added complicating factor frailty scales rely on comprehensive documentation which may be burdensome for non-specialist staff [32] or are not feasible in general practice due to time constraints, nor in residential aged care facilities which do not have access to electronic health records [33].

A wide variety of frailty and functional decline indices have been used on different patient sub-populations over the past two decades and they include clinician-measured, observed, and self-reported functional status assessments. Frailty can be identified using either the Frailty Index (FI) [34] and its electronic version (eFI) [35], Fried's frailty phenotype [36], the Clinical Frailty Scale (CFS) [37], the Fatigue Resistance Ambulation Illness Loss of weight (FRAIL) scale [38], PRISMA-7 [39], and the Groningen Frailty Indicator (GFI) [40]. The SHARE75 + is a combination of observed and self-reported parameters and has acceptable predictive validity of 2-year mortality and 4-year disability [41]. The evaluation of a brief questionnaire EASYcare-TOS found that it is feasible to identify frailty in a time-pressured, non-specialist environment of a general practice setting [42]. However this instrument has not been prospectively validated in terms of the ability of the scores to predict disability or mortality. The constructs of the instruments above vary as some are limited to physical performance domains and others also incorporate associated comorbidities (some examples are shown in Table 1). Their validity and reliability also vary as some are objectively measured and others are self-reported or observed [43]. The strength of their associations with adverse outcomes also differ, as does the instrument requirements for equipment and expertise of the assessor which can be a limitation for clinical settings. Others such as the Edmonton Frailty Scale (EFS) do not require a geriatrics-trained staff for administration [44] but involve demonstration of functional status not always possible to undertake in acute settings.

The most widely used approach to measure frailty is the phenotypic approach which is strongly based around or the sarcopenia hypothesis of frailty, i.e. physical markers [3], and the cumulative deficit approach which encompasses not only the physical aspect but cognition and functional decline, falls, comorbidities, continence, etc. [34]. Many of these instruments have been applied to the community setting [45]. Others such as the Identification of Seniors at Risk (ISAR) tool are used in older emergency department patients and have a poor-to-fair ability to predict adverse follow-up composite outcomes (AUROC 60–70%) [46]. In residential aged care facilities where there may be more time to exhaustively assess patients, the FRAIL-NH scale has been viewed as a simple and practical method to screen for frailty [47]. Studies focusing on ward patients have yielded better predictive results for poor hospital outcomes: using the Clinical Frailty scale (CFS), in-patient mortality was statistically significantly associated with frailty and CFS had a predictive ability > 70%. Both the CFS [32,48] and Fried scale [49] have been associated with longer length of stay and admission to aged–care wards [48]. Frailty is also associated with increased mortality at several time points (one month, three months and one year) in older surgical patients post-operatively [50]; in older medical patients one-month mortality using the SUHB scale [51]; and six month mortality using the Fried scale [52]. Evidence from a systematic review indicates that when comparing several frailty scales to predict composite outcomes (either death, nursing home admission or a change in low to high level care) only the Frailty Index of Accumulative Deficits had adequate predictive power (AUROC > 70%) at both time points [53].

In sum, the frailty concept is generally associated with adverse outcomes but the choice of instrument depends on the setting to be used, the time available for assessment, the skill level required for administration and the environment where the patient can demonstrate functional ability.

4. Who should identify frailty and a person approaching end of life

The CGA covering medical, nutritional, functional and psychological domains needs to be conducted by a multidisciplinary team, whether in hospitals or the community. But many occupations can contribute to identification and management of older people at risk. Nurses and allied health professionals such as occupational therapists can play a key role in the identification and management of frailty [54] in healthcare facilities and in the community, and in supporting informal caregivers to reduce their burden [55]. Physiotherapists can assist in the many objective measures current frailty items require such as mobility and walking speed and dietetics can help inform nutritional status, weight loss and management [56].

Instruments to identify the dying trajectory earlier than at crisis point can be based on combinations of objective parameters and subjective clinical judgment such as RADboud indicators for PAlliative Care needs (RADPAC) for general practitioners [57]; or combinations

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