

Frailty

Frailty is common among older persons in residential aged care. It is estimated that 1 in 5 Australian adults aged 65 years and older are frail, with a further 48% identified as pre-frail. Frailty is significantly higher among women compared to men.

Frailty is trigger for Residential Medication Management Reviews (RMMRs). It has been suggested that frailty status should outweigh the number of medications (polypharmacy) as a criterion as frailty has a greater impact on adverse health outcomes.

Definition

The World Health Organisation (WHO) defines frailty as *'a clinically recognizable state in older people who have increased vulnerability, resulting from age-associated declines in physiological reserve and function across multiple organ systems, such that the ability to cope with everyday or acute stressors is compromised.'*

More simply, frailty is a syndrome of diminished physiological reserve in the face of external stressors. There is a strong relationship between polypharmacy and frailty. Frailty may influence factors such as drug pharmacokinetics and pharmacodynamics, toxicity, and therapeutic efficacy.

Frailty is associated with functional decline, disability, falls, hospitalisation, admission to residential aged care, poor quality of life and death in older people. Frailty is a dynamic process, whereby development of frailty can lead to a spiral of decline and increasing frailty. This decline can lead to prescribing of more medications, which may further contribute to frailty.

Frailty phenotype

The frailty phenotype consists of five items:

- weight loss
- low physical activity
- exhaustion
- slowness
- weakness

These components may be inter-related, as reduced muscle strength leads to exhaustion, which in turn decreases walking speed and physical activity, which may further reduce muscle strength. Reduced physical activity may lead to loss of muscle mass (sarcopenia), resulting lower weight.

People categorized as frail (three or more variables present) have higher rates of falls, impaired function, and death compared with people categorized as robust (0 variables) or pre-frail (one to two variables).

FRAIL-NH scale

The FRAIL-NH scale is a 7-item screening tool designed specifically for residential aged care. It includes domains related to potentially reversible variables including fatigue, resistance, ambulation, incontinence or illness, loss of weight, nutritional approach, and help with dressing. Each item is assigned a score of up to 2 points, generating a total score of 0 (non-frail) to 14 (most frail). A score higher than 7 indicates frailty.

Residents complaining of fatigue should be assessed for hypothyroidism, vitamin B12 deficiency, sleep apnoea, overtreatment with medications and depression.

Residents with problems with ambulation and transfer may benefit from vitamin D supplementation for sarcopenia. Illness is used as a proxy for polypharmacy. Multiple conditions are associated with an increasing number of medications prescribed. Alternatively, incontinence is often a cause for falls and fractures, as well as a marker for mobility disability or cognitive impairment.

Weight loss often results in amelioration of hypertension, providing opportunities for deprescribing antihypertensives. Weight loss and poor nutrition are highly predictive of poor outcomes for residents in nursing homes. Many medications contribute to weight loss and anorexia.

Polypharmacy

Polypharmacy and use of potentially inappropriate medicines are major contributors to the development of frailty. Use of five or more medications is associated with an increased risk of frailty, mortality and falls. Thus, reducing polypharmacy can be seen as a measure for both prevention and management of frailty.

Exposure to anticholinergic and sedative medications is associated with onset of frailty. An Australian study showed that each additional medication is associated with a 22% greater risk of transitioning from a robust state to frailty and death. The study used the Drug Burden Index (DBI) to measure exposure to anticholinergic and sedative medications.

Deprescribing

Frail older people in residential aged care are more susceptible to adverse drug events and therefore have a different benefit-to-risk ratio for long-term preventive care. In frail older people with limited life expectancy, treatment choices should be focused on symptom management and quality of life rather than disease-specific guidelines or longer-term preventive strategies. For instance, should statin use be reduced in frail older people due to the risk of rhabdomyolysis, muscle weakness and kidney failure, or should statins be used to reduce cardiovascular risk?

Deprescribing is usually well tolerated and in trials most medications stopped are not restarted. Some evidence suggests improvements in function, frailty status, mental health and depression scores.

STOPPFrail

The Screening tool of Older Persons' Prescriptions in Frail adults (STOPPFrail) is a list of potentially inappropriate prescribing indicators designed to assist with stopping medications in frail older people with limited life expectancy. It is applicable to frail people with a life expectancy of less than a year and those with cognitive or physical impairment. The goal is to reduce medication-related harm and drug burden without compromising health or quality of life.

When the STOPPFrail tool has been used in trials, 1 in 4 medications were stopped, with substantial reduction in costs. No significant differences in mortality, hospital admission and quality of life were observed between intervention and control arms.

Three criteria are suggested to identify residents for STOPPFrail-guided deprescribing:

1. Activities of daily living dependency, severe chronic illness and/or terminal illness
2. Severe irreversible frailty
3. "Surprise question" - would not be surprised if the patient died in the next 12 months

Any medication that the resident persistently fails to take or tolerate despite adequate education and consideration of all appropriate formulations should be considered for discontinuation. Other reasons include any medication without a clear clinical indication and any medication for symptoms that have now resolved (e.g., pain, nausea, vertigo, pruritus).

Some examples of medications included in the STOPPFrail tool include:

- **Cardiology:** cholesterol-lowering therapy (statins), antihypertensives, anti-anginal therapy (nitrates)
- **Coagulation:** antiplatelets for primary prevention, aspirin for stroke prevention in atrial fibrillation
- **Central nervous system:** antipsychotics in people with dementia, memantine in patients with moderate to severe dementia
- **Gastrointestinal:** proton pump inhibitors (PPIs), H2 receptor antagonists
- **Respiratory:** theophylline, leukotriene antagonists (montelukast) for COPD
- **Musculoskeletal:** calcium and vitamin D, drugs for osteoporosis, long-term anti-inflammatory drugs (NSAIDs), long-term corticosteroids (prednisolone)
- **Urogenital:** drugs for benign prostatic hyperplasia in men with catheters, drugs for overactive bladder (anticholinergics, mirabegron)
- **Endocrine:** anti-diabetes drugs – de-intensify treatment to avoid hypoglycaemia
- **Miscellaneous:** multivitamin combination supplements, folic acid (unless with methotrexate use), nutritional supplements for prophylaxis rather than treatment of malnutrition

References

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