REVIEW ARTICLE

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Frailty in older women

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INTRODUCTION

An 85-year-old female patient has been suffering from loss of recent memory. She has received no previous medical support. Her daughter sought geriatricians as soon as she realized that her mother usually forgets the cooker on, keeps her money in biscuit jars, and she feels nervous due to apathy. She lives on her own and experiences significant tiredness. She has been operated on bilateral facetectomy alone and has no comorbidities. Her two children live nearby, and she has four grandchildren. She is a non-religious, widow, and retired private college professor who has sedentary behavior and no siblings. Her parents had Systemic Arterial Hypertension and Diabetes Mellitus. She has had some significant weight loss in the past 6 months without an apparent cause. She used to enjoy reading and watching films. She has always lived on the third floor of the same building without an elevator for the past 20 years. She will not allow her apartment to have modifications for elders; she has a fortnightly cleaner; and she neither smokes, drinks, has pets nor is allergic. She is fully vaccinated.

Geriatric data:

Normal physical examination: height 1.65 m; weight 50 kg and Body Mass Index: 18

Short Mental Test: 23/28 – Verbal Fluency Test: 9 words per minute

Get and Go Test: 20 – Rockwood Frailty Test: 4

Palliative Performance Scale: 60 – preserved hearing and vision

Densitometry – Osteopenia (-) 2.0 Femur and lumbar

Hand grip strength – unperformed

Complementary Tests:

Hemoglobin 10.5; albumin 2.1; vitamin B12 - 200; TSH 5.0; sodium 131.

CONCEPT AND FRAILTY PHYSIOPATHOLOGY

Frailty was a condition mentioned in the 1950s and 1960s and its notions were related to incapacity, comorbidity and advanced age[1]. It was first called Frailty Syndrome or Frailty in 2001[2]. Since then, healthcare workers have kept within objective parameters to diagnose frailty in the elderly. This is a multidimensional syndrome that impacts physical, nutritional, cognitive and psychosocial aspects. It has been widely studied with the elderly in the past decade[3]. There are five criteria as follows: (1) non-intentional loss of weight; (2) tiredness; (3) strength loss; (4) sedentary behavior and (5) slow walking speed. As far as our case study is concerned, this fragile elderly female suffers from fatigue and weight loss and has a slow walking speed.

There is no consensus on when her physiopathology started since there are many interlinked processes leading to the frailty phenotype. Aging and its physiological dysregulation (senescence), chronic malnutrition (caloric, protein and micronutrient restrictions), loss of muscle mass and strength (sarcopenia),

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reduction of resting metabolic rates, and reduction of energy expenditure all play important roles in the frailty spiral[4]. Other factors such as sedentary behavior, inflammaging (age-related chronic inflammation), endocrine dysregulation[5,6], cognitive deficit, alterations in the intestinal microbiota, anorexia, genetics, and epigenetics are also considered[3,7].

EPIDEMIOLOGY: FRAILTY AND VERY ELDERLY INDIVIDUALS

In 2022, the World Health Organization's (WHO) prospective figures confirmed that the very elderly (individuals over 80 years of age) are the fastest growing group both in Brazil and worldwide[8]. Such an exponential increase in this population in absolute and relative figures has an impact not only on social, economic and political aspects, but also on the treatment of the elderly by healthcare workers[9,10]. According to the platform DRG Brazil (Plataforma de Valor em Saúde), seniors are estimated to be 14% of Brazil's population and 23% of whom are hospital-care admitted. DRG Brazil has recently noted that 47% of adverse events or acquired conditions affected the elderly[11]. Hospital stays were significantly more prolonged, and death rates soared to 1.08% in under 60-year-olds and to 13.73% in over 80-year-olds[12,13].

Frailty syndrome is associated with advanced age, female gender, lower education and socioeconomic status, chronic diseases, cognitive and functional impairment, and depression. In the study "Health, Well-Being and Ageing", conducted between 2006 and 2010[14], frailty was predominant in 4.1% among 60-year-olds, 8.4% among 70-year-olds, 28% among 80-year-olds, and 55.9% among 90-year-olds and centenarians. The Fibra study has assessed 3,478 elderly individuals in their age of 60s, and frailty prevalence has reached about 9% among the whole population as it has increased among older individuals: 11.8% among 75- and 79-year-olds, and 19.7% among 80-year-olds[15-17].

One study was conducted with 33 Ribeirão Preto centenarian residents[18], representing 56% of this local super-elderly population. These were home-assessed and, according to the Fried criteria, 97% of them showed frailty syndrome.

Various diagnostic tools, stemming from developing physiopathological concepts, different cohort values and heterogeneous samples may explain such a substantial difference among frailty prevalence rates in different population studies. Population aging and the increase of frailty syndrome are significantly associated, which impacts negatively on elderly individuals' health.

DIAGNOSIS AND FUNCTIONAL CAPACITY

Frailty may be recognized as a syndrome through phenotype criteria and their respective diagnostic tools which are as follows[19]:
Weakness assessed through hand grip strength (dynamometer):

- Women with BMI<23.8: <14;
- Women with BMI 23.9–27.1: <17;
- Women with BMI 27.2–30.8: <20;
- Women with BMI>30.8: <23.

Retardation: assessed through a walking speed in a 4.6-m distance:

- Women <153 cm tall: >6 s;
- Women >153 cm tall: >5 s.

Physical Inactivity

Question: *Do you feel that you now exercise less than you did 12 months ago?*

Exhaustion

Question: *How many times did you feel this way last week?* (one point is scored if at least "2" is the answer for both questions):

"It felt like a great effort."

"I could not keep on going."

- 0: rarely or none
- 1: 1–2 days.
- 2: 3–4 days.
- 3: most of the time.

Malnutrition: assessed through unintentional body weight loss of 5% or 4.5 kg in 1 year[20-21].

An elderly individual is considered frail if they have three of these features or more, pre-frail if they have one or two, and robust if they have none of these features. There is, however, one diagnostic approach to frailty that sees it as a range of multidimensional aspects, leading to the concept of "deficit accumulation" or Frailty Index, identified through comprehensive geriatric assessment.

In clinical practice, frailty syndrome is suggested to be tracked down in 65-year-olds. FRAIL mnemonic questionnaire is a fast and simple tool that correlates Fried's physical criteria with the deficit accumulation concept:

- F — Fatigue (*Do you feel tired?)*;
- R — Resistance (*Can you not go up a flight of stairs without someone's help?)*;
- A — Aerobics *(Can you not walk one block without someone's help?);*

- I — Illness (*Do you have five or more of the following diseases: systemic arterial hypertension, diabetes mellitus, cancer (skin cancer excepted), chronic obstructive lung disease, coronary artery disease or myocardial infarction, congestive heart failure, asthma, arthritis, encephalic vascular accident, and chronic kidney disease)?;*
- L — Loss of weight (*Have you lost more than 5% of weight in the past 6 months?)*

If no points are scored, they are classified as robust; if one or two points are scored, they are classified as pre-frail; and if three or more points are scored, they are classified as frail.

FRAILTY CLINICAL OUTCOMES

Frailty matters since it poses a problem for the elderly as far as clinical and functional outcomes are concerned. It may increase the risk of falls and hospitalization rates, and lower quality of life as it may cause delirium, functional loss and higher morbimortality[22]. As chronic diseases and higher incapacity are also associated with frailty, all areas of geriatrics consider it an issue to be addressed[23-25].

FRAILTY AND HEALTHCARE

Since the elderly are faced with increased incapacities and a wide range of chronic diseases, looking after them is challenging, especially when they are socially vulnerable. Interprofessional teamwork is essential, for the frailer seniors become, the more vulnerable they are to diagnostic and therapeutic procedures.

Identifying frailty is crucial to design an individual therapeutic treatment for patients and organize state and private healthcare assistance networks. Therefore, those who are the most susceptible to health issues and medical complications can be eligible for treatment. A number of preventive, protective and therapeutic measures benefiting the elderly in every aspect of healthcare assistance will be taken[17].

As far as public health issues are concerned, both politicians and private managers must be aware of elderly affairs. Upgrading current initiatives, devising and planning new, effective, and interlinked ones would allow the frailest and most vulnerable of the elderly to have access to proper health services meeting and suiting their needs[9].

Ambulatory care initiatives must be taken by means of interprofessional approaches to promote health. In private healthcare systems, especially in oncology care, frail elderly patients are looked after by nurse navigators. Continuing education may help multi-professional teams offer proper care, and senior patients will experience better assistance. Consequently, patients are less likely to visit emergency care units or be hospitalized, as they are also less likely to have falls, fractures and, infections.

Ideal forms of elderly care are discussed in order to avoid unnecessary and futile hospitalizations. Since we are faced with the aforementioned demographic and epidemiologic scenarios, hospital assistance planning must be drawn up in order to offer the elderly friendly and quality assistance models. These would reduce hospitalization expenses, early re-hospitalizations, post-discharge hospitalizations, and mortality. It would provide the elderly and all those involved in the treatment with an extremely beneficial experience[13].

It is worth clarifying the concept of transitional care. It promotes patients' recovery or adequacy for a new certain health condition, and it can be delivered in patients' homes or at any specialized transitional care units. This is a current alternative method of providing frail seniors with quality care and services throughout their lives or until their passing.

PALLIATIVE CARE AND FRAILTY

Frailty Syndrome and PC are interlinked with functional loss, therapy limits, and the need for advance directives. According to WHO, PC should be required for patients with life-threatening, progressive, incurable, severe illnesses since their early identification. It focuses on chronic, degenerative, and frailty-associated diseases and patient-centered treatments. The female patient aforementioned will face clinical and functional decay, which may raise questions about appropriate PC.

This PC approach is due to the patient's gradual functional impairment. She has been diagnosed with mild hyponatremia, which may cause adynamia, fatigue, and delirium. If precipitating factors for the condition are properly treated, patients may make a full functional recovery. Although the patient in question is classified as frail and is receiving PC, her condition will not demand end-of-life care.

Some patients may be faced with bed confinement, severe cognitive decline, recurrent infections, and pressure ulcers due to gradual functional decline. Based on PC standards, the frailty syndrome criteria, and conversations with the patient's children and/or relatives (if any), end-of-life care might be delivered. Therapy limits might also be set out as long as advance directives are considered accordingly.

FINAL COMMENTS

Aging is just as real as stating it as a woman-related process alone. Lifestyle, genetics, and some other related factors make

us face frailty. Not only does it have a huge impact on patients' physical condition, but it also influences their lives as a whole. As far as assistance models are concerned (irrespective of healthcare financing models), discussing frailty in older women is essential, especially when healthcare workers do not seem to be prepared for increasing demands in this area. Therefore, we firmly believe that PC must be delivered as soon as seniors need it in order to avoid burdening families and overloading healthcare systems.

AUTHORS' CONTRIBUTIONS

CBNEOB: Conceptualization, Data curation, Formal Analysis. **IB:** Conceptualization, Data curation, Formal Analysis. **JED:** Conceptualization, Data curation, Formal Analysis. **KRSM:** Conceptualization, Data curation, Formal Analysis. **MAAML:** Conceptualization, Data curation, Formal Analysis. **POD:** Conceptualization, Data curation, Formal Analysis. **RCC:** Conceptualization, Data curation, Formal Analysis. **AF:** Conceptualization, Data curation, Formal Analysis, Writing – review & editing.

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