



Alzheimer's Disease and Frailty: A Complex Relationship

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Editorial

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Editorial

The world's population is ageing rapidly and in developing countries this is more evident. Cognitive decline and physical frailty are frequent situations in the ageing process, and so there is a progressive increase in neurodegenerative diseases, dementias, and new health conditions, such as frailty [1].

Dementias are clinical syndromes characterized by deterioration in cognitive functions such as memory, language, executive function, social cognition, praxis and others, associated with changes in behavior and impairment of activities of daily living [2].

Alzheimer's disease (AD) is the leading cause of dementia in the world. It is a neurovegetative disease that is progressive and, to date, incurable. According to estimates by Alzheimer's Disease International, in 2018 there were 50 million people in the world living with the disease and the projection for 2050 is that this number will triple [3].

The socio-economic impact of the disease is devastating and a public health concern for the foreseeable future. Currently around 1.3 billion dollars are spent on medical care and informal care and by 2030 this figure is expected to reach 2.8 billion dollars [4].

With the progression of dementia, there will inevitably be disabilities, increased dependence on formal or family caregivers, the need for support from multidisciplinary teams and, in many cases, hospital support. The family is usually strongly affected, because as well as dealing with accepting

the diagnosis, they have to dedicate themselves to the task of caring. Most family caregivers are wives or daughters who devote long periods of time to caring, which can lead to overload, a greater risk of developing physical illnesses, mental disorders and a worsening quality of life [5].

Dementia can be prevented by up to 40% of cases by controlling some risk factors throughout life, such as: less education, hearing loss, traumatic brain injury, hypertension, alcohol (>21 units per week), obesity, smoking, depression, social isolation, physical inactivity, air pollution and diabetes [6].

Frailty is a clinical condition of multisystemic and multidimensional origin that involves several domains, including physical activity, muscle strength, mobility, nutritional status, mood, cognition and social support. This condition makes individuals more vulnerable to unfavourable outcomes such as increased disability, hospitalizations, risk of falls, cognitive decline and death [7,8].

Fried LP, et al. [9] proposed the physical frailty phenotype which assesses the following criteria: involuntary weight loss, self-reported exhaustion, weakness, reduced walking speed and reduced physical activity. People who meet up to 2 criteria are considered pre-frail and above 3, frail [9].

However, other criteria such as social and cognitive aspects, the presence of diseases, signs and symptoms, changes in laboratory tests and previous disability have been taken into account [7].

The prevalence of frailty in elderly people in the community is already known to be high. The adverse consequences of this condition generate a greater demand for health services, both by elderly women and men, compared to robust elderly people, and consequently there is a financial burden on these services [10,11]. This high financial cost could be reduced with greater encouragement for physical

activity, improved nutritional intake, social assistance, good control of chronic-degenerative diseases and mental health care.

Frailty is more commonly studied in the elderly population in isolation, but the prevalence of the association between AD and frailty is estimated to be high. Both conditions have several aspects in common: multifactorial etiology; risk factors such as advanced age, inflammation, sedentary lifestyle, depression, low schooling, poverty and diabetes mellitus; greater risk of unfavorable health outcomes [12].

There seems to be an intimate relationship between these two conditions, and frailty could be considered a risk factor for the development of AD and, when present in demented patients, can aggravate unfavorable events in the evolution of dementia.

In a systematic review and meta-analysis, Kojima G, et al. [12] observed that the association between AD and frailty is frequent and significantly increases healthcare costs [12].

Borges MK, et al. [1], also in a systematic review and meta-analysis, identified that frail elderly people had a higher risk of cognitive decline [1]. Ward DD, et al. [13] found similar results in their cohort study and, in addition, demonstrated that frailty was associated with an increased risk of dementia, regardless of genetics [13].

Knowing that frailty can be potentially reversible, multiple strategies for screening, addressing and treating of this condition could reduce the risk of AD and contribute to a more favorable outcome for people with dementia.

Furthermore, the growing prevalence of frailty and AD calls for more attention to be paid to early diagnosis and the implementation of preventive measures to tackle this public health problem.

In conclusion, new studies on the relationship between frailty and Alzheimer's disease should be encouraged and articles published, since both conditions have a high prevalence in the ageing process. Advancing knowledge of the processes involved in this relationship could improve the multidimensional approach and quality of life of the elderly, as well as reducing the socioeconomic impact on society.

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