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Definitions of Cognitive Frailty: The Vulnerable Brain

Opinion
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Outline

A worldwide ageing population has brought to the fore the concept of frailty and the need to understand, characterise and importantly to slow the process. Within this is the concept of cognitive frailty which is as yet most commonly understood to be memory loss- a spectrum of the forgetfulness which is thought to come with age through to dementia. Here I discuss this and explain why this needs to expanded in order to allow further exploration and thought about cognitive frailty, the ways in which it can manifest and how it can be managed.

Introduction

The world's population is ageing and with this we see that the number deaths associated with dementia are also increasing. This increase in longevity coupled with improved awareness and better diagnostics resulted in dementia rising from the14th cause of mortality worldwide to number 5 by 2016[1]. This puts our focus on how to achieve not just more years of life but more years of healthy life and understanding frailty. The overarching concept of frailty is one of a reducing physiological reserve and ability to combat or recover from external stressors [2,3]. Fried al. [4] used a biological syndrome model to add a phenotype to this in 2001 which added an alternative to the earlier work of Rockwood et al. [5] who added a clinical classification based on a model of accumulated deficits. Increasing frailty is known to increase risk of dependence, disability and death [6]. Both models look at the system as a whole whereas here I will narrow this to consider cognitive frailty in its own right.

Current Opinion

Age is the biggest risk factor for developing dementia so it seems probable that frailty and dementia are linked. We know that the brain loses reserve as we age or accumulate deficits through recurrent illness or environmental and psychosocial stressors. There is discord however about whether cognition should be used as a part of the frailty definition. Almost a quarter of Alzheimer's patients have no other features of frailty [7] and Fried's phenotype did not include cognition as a measure of frailty. It seems we need to look more broadly at dementia and cognitive dysfunction to consider causality. Subsequent systematic reviews and metanalyses have identified cognitive impairment to be associated with frailty. Gait speed seems to be a key link between cognition and frailty specifically, it is used as a measure of physical ability and cardiorespiratory function [8,9,10]. They conclude that there needs to be an established definition of cognitive frailty which encompasses all aspects of this as a syndrome or phenotype to allow for recognition, measuring and most importantly devising optimum management and prevention strategies.

Linked to cognitive frailty is also delirium and decreased cognitive reserve is strongly associated as a risk factor [11]. This causes confusional states and can be frequent in those who are prone causing longer lasting hospital stays, increased mortality and an accumulation of cognitive dysfunction. Incidence of epilepsy increases with age over 65 with multifactorial causes of stroke, dementia, cognitive impairment and tumours [12]. Frustratingly, anti epileptic medications can make cognitive impairment and psychiatric associations of older onset epilepsy even worse [13]. Recurrent seizures increase both mortality and morbidity and if we follow the model of accumulated deficits are contributors to cognitive frailty.

By taking some time to think more widely about what cognitive frailty is and isn't it is clear it is not disease specific and linking it to poor cognitive assessment scores leads to this becoming a redundant concept. If we however allow it to have complexity and evolution it becomes visible as linked to delirium, cognitive impairment, delirium and epilepsy. In trying to comprehend what is happening with the pa-

tient who has recurrent bouts of delirium, cognitive impairment and develops epilepsy at an older age cognitive frailty then becomes a useful concept allowing for management and prevention strategies as a part of a holistic approach towards care.

Acknowledgment

I have no conflicts of interest to declare.

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