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Is Weight Loss an Outcome of or a Contributory Factor for Vascular Dementia in Frail Elderly People?

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Dear Editor,

Due to an increase in life expectancy worldwide, the number of elderly individuals suffering from vascular dementia (VaD) is anticipated to increase, thereby leading to a serious public health problem that should be urgently addressed. VaD is accepted as the second most common form of dementia after Alzheimer's disease (AD). Advanced age is the most important unchangeable risk factor for both VaD and AD. However, it has been suggested that the incidence of AD decreases after 90 years of age and that of VaD increases [1, 2].

Frailty is a common geriatric syndrome, causing deterioration in health and functional status in advanced age [3]. Unintentional weight loss, self-reported exhaustion, weakness, slowly walking [3], and low physical activity are the characteristics of frailty syndrome [3]. The presence of three or more of these is defined as a frail state. The presence of one or two of these criteria is defined as a prefrail state. Recently, frailty syndrome has been thought to be a risk factor for VaD. In addition, there is reasonable evidence linking VaD with frailty in the elderly [4, 5]. In a prospective cohort study, being frail was associated with approximately a 3-fold increase in the risk of VaD [4]. A recent report showed that the risk of VaD is 5.6 times more likely in frail people than in healthy individuals among persons aged 76 years or older [5].

Weight loss is a clinical condition that increases the morbidity and mortality risk in elderly people [6]. The diagnosis of weight loss in an elderly population is important to prevent or treat the underlying causes because it may emerge at the beginning or during the course of any disease. Hence, is weight loss in frail elderly people related to VaD, a contributory factor for VaD or a consequence of VaD? Little is known about the relationship between weight loss-related brain structural changes and VaD. However,

the association between cerebral infarcts and weight loss is well established [7, 8]. Infarcts caused by atherosclerosis in some brain areas may be the underlying pathophysiology of the relationship between VaD and weight loss. Atherosclerosis is a common biological link between white matter lesions and weight loss [7]. These lesions are thought to impair fibers connecting the frontal cortex and subcortical structures that are considered to be important for executive functions. Reduced food intake correlates with some deficits in executive functioning, which can be related to weight loss in elderly persons with VaD [8].

Taken together, a detailed study of frailty state with weight loss may have a beneficial effect on the prevention and progression of VaD regarding an outcome and a contributory factor. If the person is in a prefrail state, intervention adds even greater benefit in decreasing falls, cognitive decline, institutionalization, resources of utilization, and death caused by VaD. Further research will be required to fully explore the underlying pathophysiological changes in the association between weight loss and VaD in prefrail and frail elderly people and to determine how useful clinical implications are in the prevention and progression of VaD.

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