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Letter to the Editor

"Syndromes" of mobility limitations in older adults

I read with interest the article on "Locomotive syndrome presents a risk for falls and fractures in the elderly Japanese population" by Matsumoto et al. [1]. The concept of a locomotive syndrome has been proposed to denote orthopedic conditions affecting "the organs that move the body, and therefore includes bones, joints, ligaments, muscles, the spinal cord, and peripheral nerves" [2]. It may be a useful definition to adopt in clinical practice as limitations in locomotive ability are known to increase the risk of falls and fractures, leading to disability and institutionalizations. Studies have demonstrated that mobility problems, such as slow gait speed, predicts disability and mortality [3,4]. Addressing multiple organ systems involved in locomotive syndromes may help in the early detection and management of mobility limitations, preventing deterioration in function and reducing the need for long-term care.

However, for a locomotive syndrome to stand as a distinct clinical entity the current definition needs further clarification. The authors limit its scope to physical frailty, excluding neurological or psychiatric disorders. This may be problematic, especially in older adults, since cognitive and mental disorders often present as impaired mobility. Further, problems with locomotion may manifest even in non-frail elderly individuals who have yet to display overt signs of physical frailty. What makes it more complicating is that musculoskeletal diseases, such as sarcopenia, are often accompanied by dementia and depression, making it difficult to distinguish which conditions contribute to, and to what extent, functional limitations.

Screening tools for individuals with locomotive syndrome would also need further refinement. The 25-item Geriatric Locomotive Function Scale (GLFS-25) [6] includes items on restriction of social contacts and social activities that are arguably components of social frailty. Items pertaining to activities of daily living (ADL) disability are also included in the scale. This seems especially problematic, because locomotive syndromes are considered to predict incident disability.

Further specification of clustering of risk factors, shared pathogenesis, and adverse outcomes may contribute to the clinical utility of the concept. Patterns of clustering of diseases thought to comprise the syndrome are largely unknown. Much work is desired on the identification of risk factors and underlying mechanisms that contribute to the co-occurrence of multiple conditions. There is still limited evidence on the predictive value of locomotive syndrome on adverse outcomes. Moreover, there are no specific approaches for the prevention and treatment of the syndrome other than targeting individual conditions.

Various terms and definitions proposed by different researchers over the years have added to the complexity in our understanding of the syndrome. "Dysmobility syndrome" was introduced by Binkley et al. [5] who defined it as an impaired mobility due to osteoporosis, sarcopenia, and obesity that increases the risk of adverse musculoskeletal outcomes, such as falls and fractures. Ormsbee et al. [6] have used the term "osteosarcopenic obesity" to describe abnormalities in body composition, with low bone and muscle mass accompanied by high body fat. Harmonizing these similar but varying concepts might prove to be a challenge.

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