



Letter to the editor concerning "Handgrip strength correlates with walking in lumbar spinal stenosis" by Inoue H, et al. (Eur Spine J 2020; 29: 2198–204)

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Dear Editor,

We would like to congratulate Inoue H, et al. [1] for their article “Handgrip strength correlates with walking in lumbar spinal stenosis” which was recently published in your journal. They have nicely drawn attention to the relationship among grip strength, leg extension power, habitual gait/walking speed, and intermittent claudication in lumbar spinal stenosis. Herein, we need to note a few remarks/disagreements concerning some of the interpretations in their study.

First and foremost, the authors mention that grip strength correlates with “walking” in lumbar spinal stenosis, but it would be better to clarify that it is actually the “walking speed.” Second, grip strength has been shown to correlate with many factors including gender, age, height, weight, leg extension power, total area of skeletal muscle at L3 vertebral level, area of the psoas muscle, gait speed, and intermittent claudication. In addition, since comorbid diseases (e.g., anemia and hypertension) are also affected by age and gender; correlation analyses should be performed separately for each gender, in order not to influence all the results.

Third, grip strength is associated with gait speed in the normal population as well [2]. Of note, gait speed is also a common denominator for the relationship between sarcopenia and functional dependence; [3] therefore, the weak correlation between grip strength and gait speed in lumbar spinal stenosis would not be that much interesting. Moreover, both grip strength and gait speed are related with aging [2] as well as cognitive functions [4]. Disorders resulting from the renin angiotensin system overactivity (e.g.,

hypertension) have deleterious multi-system effects not only on the cardiovascular system but also on cognition and the musculoskeletal system—causing muscle atrophy and decline of muscle power/strength, endurance, and physical performance (i.e., sarcopenia) [5].

In conclusion, grip strength is related with multiple confounding factors including age, gender, body status, and comorbid diseases. Accordingly, further statistical analyses such as multiple linear regression analyses should be performed in each gender separately for detecting the accurate/independent factor related with the grip strength.

Compliance with ethical standards

Conflict of interest The author declare that they have no conflict of interest.

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