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INVITED COMMENTARY

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The authors report a randomized trial comparing the benefits of strength training (ST) and walking training (WT) in patients with intermittent claudication. The study uses standard outcome measures to objectively quantify improvements in ambulation and physiological function, including walking distance, oxygen consumption, walking economy, ischemic window, and leg strength. It also raises questions about the underlying cause of exercise-induced discomfort and the value of potential new therapeutic alternatives.

The authors modified previously reported exercise therapy protocols, proposing another possible option for the treatment of claudication. It is becoming clear from basic science studies[1] and clinical trials[2] that significant abnormalities are present in the lower extremity musculature, leading to altered gait. The authors succinctly point to these abnormalities as a justification for the use of ST to improve ambulatory function. The exact nature of the abnormalities, and their effect on gait, is becoming more evident as information accumulates from recent large-scale studies documenting the presence of a lower extremity strength deficit in patients with peripheral arterial disease (PAD).[3] Advanced biomechanical analyses are also beginning to delineate the contribution of individual muscle groups to the gait abnormalities associated with PAD in a limited number of patients.[2,4]

In contrast to previous studies that have relied on a predetermined level of ambulatory effort, and to compare ST and WT, the current protocol uses perceived exertion measured by the validated Borg scale to determine therapeutic effort. This approach is new within the supervised exercise literature; however, perceived exertion in exercise provides a relatively stable measure of work unrelated to objective measurements, especially in elite athletes.[5] Interestingly, patients in the current study had a perceived exertion that resulted in significantly less claudication pain than in other studies, suggesting a potential need to standardize patient effort in future trials.

Although the current results demonstrate significant improvement in ambulation with both protocols, to conclude that ST is comparable to WT from these results and those of related studies would be inappropriate. Despite previously well-designed and executed trials comparing supervised WT with ST, very little can be concluded based on the significant variations in conduct and outcome measures. The current study, in the context of recent literature, clearly illustrates the need for standardization. For the field of PAD treatment to progress, common outcome measures need to be agreed upon and reported to allow for accurate comparisons among the myriad of medical, exercise, and operative treatments available.

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