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EDITORIAL COMMENT

Claudication

Pay for Structured Exercise or Go Take a Hike*

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Intermittent claudication is the most common symptomatic manifestation of lower extremity peripheral artery disease. It is a withering symptom that impairs walking function and decreases quality of life. Although many successful therapies lower atherosclerosis risk factors to prevent the high risk for cardiovascular events, there are few medical therapies to improve walking impairment and physical independence in patients with claudication.

Cilostazol is the only medication that improves the claudication distance (the distance before onset of claudication) and maximal walking distance (the distance before stopping because of symptoms), common measures of walking impairment. However, the effect is modest and variable, with meta-analyses estimating a 25% increase in claudication distance (1). In contrast, several randomized trials have shown that supervised exercise training increases claudication distance by 30% to 100% (2–4).

Supervised exercise training is rarely used in clinical practice in the United States, for 2 reasons. First, it is not covered by medical insurers, and second, it is sometimes difficult for patients to attend 3 supervised classes a week for several months. As a result, those of us who treat claudication can only advise patients to pay for supervised exercise out of their own pocket or keep walking, a prescription that is sometimes misinterpreted as "go take a hike [out of my office]." In contrast, revascularization, particularly by endovascular techniques, provides a relatively immediate "fix" for both the patient (improved walking) and the institution and provider (handsome insurance reimbursement).

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In this issue of *JACC: Cardiovascular Interventions*, Pandey et al. (5) report on a meta-analysis in patients with peripheral artery disease designed to compare the benefit of revascularization, primarily by endovascular techniques, over the well-proven effects of supervised exercise training. Their analysis is divided into 2 comparisons: first, supervised exercise training alone versus revascularization alone, and second, supervised exercise training after revascularization versus supervised exercise training alone.

The key findings of the first comparison are that compared with supervised exercise alone, revascularization in 5 comparison groups improves the ankle-brachial index but does not improve walking impairment, repeat revascularization, or amputation. One of the studies in this comparison was a meta-analysis of studies that did not directly compare revascularization with supervised exercise training (6), but ignoring that study does not affect the overall conclusion from the forest plots that supervised exercise is equivalent to the widely reimbursed therapy of revascularization alone.

In the second analysis, the combination of supervised exercise after revascularization improved ankle-brachial index and maximal walking distance,

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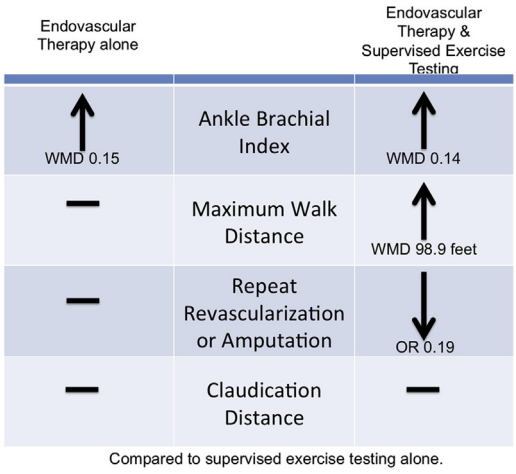
FIGURE 1 Summary of Meta-Analysis



Compared with supervised exercise testing alone, patients with intermittent claudication who undergo both endovascular therapy and supervised exercise testing achieve greater maximal walk distance and less repeat revascularization or amputation (5). OR = odds ratio; WMD = weighted mean difference.

with less repeat revascularization or amputation but no difference in the claudication distance (distance to onset of claudication) compared with supervised exercise alone (**Figure 1**). To be fair, there were only 2 minor amputations in the 454 subjects in the second comparison, so this effect largely reflects crossover to revascularization by subjects initially treated by supervised exercise training alone, at a respectable 37 patients (16%).

Overall, the study is a stunning reaffirmation of supervised exercise training, both compared with the well-reimbursed therapy of revascularization alone and, by implication, as an important adjunct to endovascular revascularization when this is deemed necessary. The investigators should be congratulated for adding this revascularization perspective and supporting the conclusions of the recent intersociety guidelines for the management of peripheral artery disease (7,8). For patients who find it difficult to attend supervised exercise programs, structured home-based exercise programs may offer a solution to initial therapy or adjunctive therapy with revascularization. Structured home-based exercise programs start with a supervised training visit and an exercise prescription and other behavioral interventions. A provider reinforces this program through follow-up by telephone or other means to progressively increase exercise. Several randomized trials show that these programs improve walking impairment and may have similar effects to supervised exercise (9–12).

This report is very timely, as currently, representatives of several cardiovascular societies are lobbying the Centers for Medicare and Medicaid Services to reimburse supervised exercise training for patients with claudication. These include the American College of Cardiology, the American Heart Association, the Society for Vascular Medicine, the Society for Vascular Surgery, and others. We who treat patients with claudication have long recognized that the lack of insurance coverage for supervised exercise programs is a denial of the scientific evidence. Maybe the advice we should give insurers about supervised exercise therapy is the only message we currently appear to give our patients, namely, pay for structured exercise programs, or "go take a hike."

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