

Non-pharmacological management of claudication - A brief communication to the editor

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Peripheral arterial disease (PAD) resulting from atherosclerotic disease affecting the arteries in the legs is an important manifestation of systemic atherosclerosis. The age-adjusted prevalence is about 12% in the general population, affecting men and women equally [1,2]. Approximately one-third of patients with PAD have typical claudication, which is pain in one or both the legs that does not resolve on continued walking and is relieved by rest. Among the patients with intermittent claudication, 30% progress to ischemic ulceration and 23% to ischemic rest pain over a period of 10 years [3]. This still leaves a vast majority of patients who can be successfully managed medically. The goals of treatment of claudication will be to relieve symptoms, increase walking distance and improve quality of life. The management of patients with PAD can be divided into i) Risk factor modification, ii) Antiplatelet therapies and iii) therapy for claudication symptoms (non-pharmacological and pharmacological). In my last communication, I discussed the anti-platelet therapies and in this letter, I intend to discuss the non-pharmacological management of claudication.

Supervised Exercise Program: The ESC, AHA/ACC, and Trans-Atlantic Inter-Society Consensus Document on Management of Peripheral Arterial Disease (TASC II) have all declared that the evidence supporting exercise therapy in the treatment of claudication is sufficiently robust to merit a Level I recommendation. The two level I recommendations are described below:

- (1) As first-line therapy a supervised exercise program consisting of walking a minimum of three times per week (30-60 min/session) for at least 12 weeks to all suitable patients with intermittent claudication (1A).
- (2) Home-based exercise, with a goal of at least 30 minutes of walking three to five times per week when a supervised exercise program is unavailable or for long-term benefit after a supervised exercise program is completed (1B).

The fundamental component of training is treadmill exercise. The program consists of starting on a treadmill at a speed and grade to induce one's claudication in 3-5 minutes. The patient is instructed to stop walking and rest when the claudication pain reaches a moderate level. When the symptom has abated, the patient resumes walking until moderate claudication discomfort recurs. This cycle of exercise and rest is repeated for at least 30 minutes in the first few sessions of the program. In subsequent visits, the speed or grade of the treadmill is increased if the patient is able to walk for 10 minutes or longer at a lower workload without reaching moderate claudication pain [4]. Exercise training is not associated with improvement in the blood flow in the legs. The biomechanical or biochemical mechanisms underlying the benefits of exercise therapy are exercise-induced angiogenesis, enhanced nitric oxide-dependent vasodilatation of the microcirculation, improved hemorheology, reduced vascular inflammation, improved glucose and fatty acid metabolism in skeletal muscle, improved muscle bioenergetics and oxidative stress, improved peripheral nerve function, and so on [4].

References

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