

Exercise Therapy in Patients with Intermittent Claudication

Konstantinos Filis, Fragiska Sigala and George Galyfos*

Vascular Division, First Department of Propaedeutic Surgery, University of Athens Medical School, Hippocraton Hospital, Athens, Greece

*Corresponding author: Galyfos G, Vascular Division, First Department of Propaedeutic Surgery, University of Athens Medical School, Hippocraton Hospital, Athens, Greece, Tel: 30-213-2086243; E-mail: georgegalyfos@hotmail.com

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Editorial

Peripheral artery disease (PAD) has been associated with specific risk factors such as smoking, diabetes mellitus (DM) as well as previous coronary and cerebrovascular disease [1]. Furthermore, PAD has been correlated to an increased risk for cardiovascular morbidity and mortality [2,3]. Although the most common symptom of PAD is intermittent claudication, recent data reveal that asymptomatic PAD is several times more common in the general population [1]. Therefore, modification of atherosclerosis risk factors as well as exercise therapy are strongly recommended as first-line treatment by recent guidelines [4].

Patients with history of PAD experience significant limitation in everyday physical activities and walking, in particular [5,6]. In a recent study of more than 2,000 patients with suspected or known PAD, de Liefde et al have highlighted the prognostic value of impaired walking distance on long-term major cardiovascular events [7]. In such patients, measurement of ankle brachial index (ABI) remains a valuable diagnostic and prognostic tool. ABI is an independent risk factor for cardiovascular diseases and mortality, even in asymptomatic patients [8,9]. Finally, there is recent evidence correlating abnormal measurements of ABI (< 0.9 or > 1.4) with silent cerebral small vessel disease [10] and a higher risk for presenting stroke in general population [11].

Regarding the effect of physical activity on reducing symptoms and cardiovascular risk in PAD patients, several studies have shown that exercise has a known positive influence on vascular risk factors such as hypertension, hypercholesterolemia, and diabetes mellitus [12]. Furthermore, reports show that patients with PAD (or more specifically, intermittent claudication) who are physically active are less likely to die compared with a group of sedentary patients with PAD [13]. After adjustments for age, ABI, and body mass index, these results are similar in patients with intermittent claudication [13]. Research data clearly indicate that exercise treatment can improve walking distance and therefore, it is recommended in recent guidelines [4]. However, type and duration of exercise remains still under investigation.

The most common exercise therapy prescription consists of one-time oral advice to walk more, usually without supervision or follow-up. However, there is no evidence to support the efficacy of this advice, and compliance is known to be low [14]. Several factors such as fear against pain, inadequate knowledge of the underlying disease, and poor general condition, contribute to the difficulty of starting, sustaining, and maintaining exercise therapy as indicated. Therefore, the importance of supervised exercise therapy (SET) is increasingly recognized. SET includes adequate coaching to increase the maximal walking distance as well as coaching in the necessary lifestyle changes, such as smoking cessation, weight control, and increase in overall

exercise. A recent Cochrane Review has identified a significant improvement in walking distance in patients undergoing a SET program compared with those involved in a nonsupervised program, with an increased difference in maximal walking distance of approximately 180 m as well as pain-free walking distance at 12 months [15]. Even in patients undergoing percutaneous interventions (PI) for PAD, SET programmes have been shown to improve walking distance compared to PI alone [16]. However, a recent meta-analysis did not show any difference between SET and unsupervised exercise concerning general quality of life [17].

However, many trials provided SET programs at a department of physiotherapy or revalidation in a hospital. While this approach is appropriate in trials, there are some limitations in routine clinical practice. The capacity of a single hospital department is usually limited and not sufficient to provide SET to all claudication patients within a community. Furthermore, attending at the hospital for two or three times a week is time consuming and expensive for the patient. These disadvantages can be overcome using a community-based approach, consisting of a selected group of community-based physiotherapists especially trained in applying exercise therapy.

Several studies have highlighted the equal effectiveness of community-based SET programmes compared to the traditional health care unit-based SET approach [18,19]. Additionally, this approach has no restrictions of limited unit capacity, no transportation difficulties whereas recorded drop-out rates from the traditional SET programs reach almost 43% in literature [19]. However, a possible disadvantage of community-based SET could be the large number of participating physiotherapists, leading to a lower volume of patients and less experience per physiotherapist. Thus, by referring patients only to specifically trained physiotherapists, this problem could be addressed.

Finally, a major issue is the indicated mode of exercise. Currently, the indicated mode consists of treadmill walking to near maximal pain although recent studies have concluded that pain-free exercise leads to an increase of walking distance as well [20]. The same authors underline that possible advantages of pain-free training could be better compliance and lower drop-out rates [20]. Regarding the frequency of exercise, there is no consensus regarding the minimum duration of SET programs, although a recent meta-analysis concludes that the optimal frequency should be a minimum of three times per week and the optimal duration a minimum of 45 minutes per session [21].

In conclusion, SET represents a safe treatment with minimal disadvantages for patients with PAD, preventing an invasive vascular intervention in a number of patients. Although many patients discontinue SET prematurely, its noninvasive nature and satisfactory results in the majority of patients justify its promotion as an initial treatment in patients with intermittent claudication. In case of

unsatisfactory results, the option for PTA or surgical revascularization is still open if clinically indicated.

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