

Therapy of Lower Extremity Peripheral Arterial Disease

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Peripheral arterial disease (PAD) is chronic arterial occlusive disease of the lower extremities caused by atherosclerosis. An ankle-brachial index of less than 0.90 or 1.4 or higher is diagnostic of PAD. Duplex ultrasonography, computed tomographic angiography, and magnetic resonance angiography are useful in assessing the anatomic location and severity of PAD and in selecting suitable candidates for endovascular or surgical revascularization [1].

Risk factors that predispose to PAD include age, cigarette smoking, diabetes mellitus, hypertension, dyslipidemia, increased plasma homocysteine levels, and hypothyroidism [1-4]. PAD coexists with other atherosclerotic disorders [5]. Persons with PAD are at increased risk for all-cause mortality, cardiovascular mortality, and cardiovascular events [6,7].

Smoking cessation reduces progression of PAD to critical leg ischemia and reduces the risk of myocardial infarction and death from cardiovascular causes. Smokers should be referred to a smoking cessation program [1]. Hypertension should be adequately controlled to reduce cardiovascular mortality and morbidity in persons with PAD [1,8]. The blood pressure should be reduced to less than 140/90 mm Hg [8]. The higher the hemoglobin A_{1c} levels in patients with diabetes mellitus and PAD, the higher the prevalence of severe PAD [9]. Diabetes mellitus should be treated with the hemoglobin A_{1c} level decreased to less than 7.0% [1].

Treatment of dyslipidemia with statins has been demonstrated to reduce the incidence of mortality, cardiovascular events, and stroke in persons with PAD with and without coronary artery disease [10,11]. Double-blind, randomized, placebo-controlled studies have also demonstrated that statins improve exercise time until intermittent claudication [12,13]. Persons with PAD should have their serum low-density lipoprotein cholesterol reduced to less than 70 mg/dl [1].

Antiplatelet drugs have been shown to reduce the incidence of vascular death, nonfatal myocardial infarction, and nonfatal stroke in persons with PAD [14]. Persons with PAD should be treated with aspirin or clopidogrel [1]. Persons with PAD should also be treated with angiotensin-converting enzyme inhibitors to reduce cardiovascular events [1,15]. Beta blockers should be used to reduce coronary events in persons with PAD and coronary artery disease in the absence of contraindications to these drugs [16].

Cilostazol should be given to patients with PAD to increase walking distance [1,17]. Contraindications to the use of cilostazol include heart failure, a creatinine clearance less than 25 ml/min, a known predisposition for bleeding, or co-administration of CYP3A4 or CYP2C19 inhibitors such as cimetidine, diltiazem, erythromycin, ketoconazole, lansoprazole, omeprazole, and HIV-1 protease inhibitors.

The optimal exercise program for improving claudication pain distance in persons with PAD uses intermittent walking to near-maximal pain during a program of at least 6 months [18]. The American College of Cardiology/American Heart Association guidelines recommends a supervised exercise program for patients with intermittent claudication [1]. These guidelines also state that persons with PAD must have proper foot care [1].

Indications for lower extremity percutaneous transluminal angioplasty or bypass surgery are 1) incapacitating claudication in persons interfering with work or lifestyle; 2) limb salvage in persons with limb-threatening ischemia as manifested by rest pain, nonhealing ulcers, and/or infection or gangrene; and 3) vasculogenic impotence [1,19]. Amputation of lower extremities should be performed if tissue loss has progressed beyond the point of salvage, if surgery is too risky, if life expectancy is very low, or if functional limitations diminish the benefit of limb salvage [20].

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