Multi-Society Message on Peripheral Artery Disease: A Significant Public Health Issue that Remains Underrecognized, Undertreated, and Underserved

Endorsing Organizations:
American College of Cardiology
American Heart Association
Association of Black Cardiologists
Society for Cardiovascular Angiography & Interventions
Society for Vascular Medicine
Society for Vascular Surgery
Society of Interventional Radiology

Peripheral artery disease (also known as peripheral arterial disease or PAD) is a form of peripheral vascular disease that leads to blockages and poor circulation (usually in the lower extremities). PAD afflicts 8-10 million Americans each year and causes 150,000 nontraumatic amputations annually.[1] With an aging population, this disease will only become more common over time; an estimated 19 million Americans will have PAD by 2050.[2] Patients with PAD may be asymptomatic or symptomatic with claudication (typically pain in the legs when walking) and/or the most advanced form of PAD known as chronic limb-threatening ischemia (also known as critical limb ischemia or CLTI). CLTI poses a major threat to patients, with nearly 1 in 3 patients dying within three years.

Stark racial and socioeconomic disparities exist in the prevalence of PAD and associated amputation rates. In a Medicare claims analysis spanning 2003-2012, PAD prevalence was significantly higher in Black women and men in the United States (16.9% and 13.2%, respectively) compared to White women and men (10.9% and 12.1%, respectively).[3] Higher prevalence of PAD and amputations also exist in Hispanic and Native American communities. Given PAD's disproportionate impact on Black, Hispanic, and Native American people and people in under-resourced areas, we must seek to break down the barriers to effective diagnosis and treatment, particularly in these groups.

The Importance of PAD Awareness, Treatment Guidelines, and Multidisciplinary Care

Many patients with PAD are unaware of their diagnosis and do not experience symptoms before presenting with advanced disease. The two strongest risk factors for PAD are diabetes mellitus and smoking, however, elevated cholesterol, hypertension, and older age (over 60 years) also play a role. Patients with diabetes mellitus and active smoking are at the highest risk for PAD morbidity and

[1] *PAD National Action Plan, 2022*
[2] *Id.*
[3] *Id.*

mortality, including limb loss. Roughly one-third of patients over age 65 with diabetes or a history of smoking have PAD. Given the increased risk of death and other cardiovascular complications, including heart attack and stroke, it is imperative to diagnose and treat PAD as early as possible. Working with patients, healthcare providers can address the modifiable risk factors associated with both peripheral and cardiovascular disease. Possible interventions include smoking cessation programs, diet, lifestyle modification, and pharmacotherapy.

As a multidisciplinary, multi-societal consortium, we aim to directly address PAD and support best practices. The complex, diverse, and multifactorial issues that plague PAD patients often necessitate the use of multidisciplinary teams.[4] A multidisciplinary team-based approach facilitates the appropriate level of expertise often required for patients and has been shown to improve patient-related outcomes across several aspects of cardiovascular medicine.[5] The team may include a primary care provider, vascular medicine specialist, endocrinologist, podiatrist, wound care specialist, and an interventionalist (interventional cardiologist, interventional radiologist, vascular surgeon, and/or other endovascular specialist). When appropriate, revascularization procedures, including surgical bypass and/or endovascular therapy (angioplasty, atherectomy, or stenting) may help ameliorate symptoms, facilitate wound healing, and prevent amputation.

Most surgical revascularization procedures are performed in hospitals, but there is a growing demand for endovascular revascularization procedures to be done in outpatient office-based labs (OBLs) or ambulatory surgical centers (ASCs), due to their increased efficiency, lower costs, and patient preference. The Centers for Medicare and Medicaid Services (CMS) has shown that revascularization procedures in office-based labs (OBL) and ambulatory surgical centers (ASC) are cost-effective and often easier on patients.[6] In addition, ASCs and OBLs are more likely to be located outside major urban areas which may afford easier access for patients lacking the means to travel for care. When used responsibly, these outpatient labs may be effective and have the potential to address PAD treatment gaps seen in underserved minorities and those living in rural regions of the country.[7] [8]

The foundation of PAD care is medical; all patients should be on guideline-directed medical therapy regardless of symptomatic status. For those patients who have claudication, a dedicated PAD exercise program has been shown to improve walking distance and relieve claudication. For PAD patients that require revascularization, there is no single device, technique, or procedure that is solely effective, and

[4] *Kolte, 2019 #1099*
[5] *Batchelor, 2023 #1100*
[6] *84 FR 61142, 2019*
[7] *Raja, 2023 #1102*
[8] *Batchelor, 2023 #1101*

these decisions often require shared decision-making between patients and their treatment team. When PAD patients are treated with a healthy diet, exercise, guideline-directed medical therapy

(including an antiplatelet agent – most commonly aspirin), smoking cessation, cholesterol-lowering medications, and a class of medications used to treat hypertension/diabetes named ACE-inhibitors and/or angiotensin receptor blockers, both mortality and amputation rates are reduced.

Given the tremendous physical, psycho-social, and economic impact of amputations, this complication of PAD should be aggressively prevented whenever possible. To aid clinicians in this complex space of medical therapy, endovascular procedures, and surgery, several societies have released "appropriate use criteria" for peripheral artery disease.[9] [10] [11] [12] We recommend that all providers treating PAD patients be familiar with these treatment guidelines and incorporate them into practice.

Together, We Can Improve Outcomes for PAD Patients

To better diagnose and treat PAD, several medical societies have developed the PAD National Action Plan.[13] This multidisciplinary plan aims to raise both patient and physician PAD awareness, increase the screening and detection of PAD, and reduce associated mortality and amputation rates. As a multidisciplinary and multi-society consortium, we must place emphasis on patient-specific outcomes rather than the patency of a vessel alone, which is a tenet of the National PAD Action Plan. In developing the most appropriate treatment plan, multidisciplinary collaboration and informed shared decision-making between provider and patient are essential.

As more revascularizations are performed in ASCs and OBLs, we propose that all OBLs/ASCs enter data into a national registry for quality assessment and improvement. More data on the appropriateness, quality, and patient-specific outcomes are needed for all patients undergoing procedures, regardless of lab location. As we move forward, we must also actively address the racial, ethnic, and socioeconomic disparities in PAD diagnosis, treatment, and outcomes. We remain committed to the goal of decreasing the overall burden of PAD and are confident that a collaborative approach will best propel us forward.

---

[9] *Gerhard-Herman Marie, 2017 #1107*
[10] *Klein, 2017 #1103*
[11] *Feldman, 2018 #1105*
[12] *Bailey, 2019 #1106*
[13] *PAD National Action Plan, 2022*