Editorial

Screening for Peripheral Artery Disease : Putting Prevention into Practice

Atherosclerotic disease involves coronary, cerebral, and often peripheral arteries. Lower extremity Peripheral Artery Disease (PAD) is the third leading cause of atherosclerotic cardiovascular morbidity, followed by coronary artery disease and stroke. In the 21st century, PAD has become a global problem and a larger burden is to be expected in the foreseeable future[1]. Overall, the global prevalence of PAD is 5·56%, which increases consistently with age. A total of 236·62 million people globally, are living with PAD, among whom 72·91% are in low-income and middle-income countries[2].

Diabetes is a strong risk factor for atherosclerotic diseases and is second only to cigarette smoking in contributing to the magnitude of increased risk for PAD[1]. Hence, PAD is more prevalent among patients with diabetes mellitus than in the general population. The current publication by aaaaa *et al* has estimated the prevalence of PAD 31% among diabetics, using a ABPI (Ankle Brachial Pressure Index) value of $\leq$0.9 which is consistent with many other prevalence studies from India.

PAD can lead to acute or chronic symptoms,but manyare asymptomatic. Underlying atherosclerotic disease may be present in the absence of symptoms and there are three times as many asymptomatic patients with lower extremity PAD as symptomatic patients. The clinical manifestations of PAD, which include claudication, rest pain, ulceration, and gangrene, are predominantly due to progressive luminal narrowing from thrombosis or due to embolism from unstable atherosclerotic plaque.Patients of PAD with diabetes tend to present with more advanced disease and have a worse prognosis with higher rates of foot ulcers, lower extremity amputations and lower extremity function compared to those who do not have diabetes[3]. As atherosclerosis is a systemic disease that also involves coronary and cerebral vessels, patients with PAD are at increased risk for coronary and cerebrovascular events.The most important implication of PAD is that it serves as a strong surrogate marker for the severity of atherosclerotic disease in other vascular territories. Thus, the patient with diabetesand PAD is a high-risk clinical phenotype who should further be evaluated for other concomitant comorbidities, specially, coronary heart disease and cerebrovascular disease.

The current publication by aaaaa *et al* had concluded that PAD is common among diabetics and early detection is possible with a simple, non-invasive, and cost-effective method (ABPI). Hence, screening,and early detection with ABPI may help in implementing prompt treatment to prevent further complications. However, it is to be kept in mind that the sensitivity of ABPI varies greatly in diabetic subjects, ranging from as high as 100% to as low as 35%[4]. This low

sensitivity is attributable to arterial wall calcification and atherosclerotic changes that make the artery poorly compressible making ABPI measurement of limited value in advanced states of PAD in patients of diabetes.Management of patients with lower extremity PAD is similar to patients with or without diabetes and is focused on relieving symptoms and lowering the risk of cardiovascular disease progression. The medical therapyis aimed ataggressive risk factor modification (healthy diets, smoking cessation, antithrombotic therapy, lipid-lowering therapy,glycemic control, and antihypertensive therapy). Medical therapy reducesthe risk for future cardiovascular (myocardial infarction, stroke) and limb events (claudication, amputation) related to atherothrombosis. Revascularization, surgical or endovascular, is mostly reserved for treatment of symptomatic PAD[5].

US Preventive Services Task Force has recently reviewed the evidence of whether screening for PAD with the ABI in generally asymptomatic adults reduces morbidity or mortality from PAD or cardiovascular disease. However, the benefits of early detection and intervention must be balanced against the harms of early detection and intervention. Direct harms of screening, beyond the time needed for testing, are minimal but the current evidence is insufficient to assess the balance of benefits and harms of screening for PAD in asymptomatic adults[6]. As per American College of Cardiology and the American Heart Association (ACC/AHA) guideline, clinical assessment for PAD, which includes clinical history, pulse palpation, auscultation for femoral bruits, and ABPI, are reserved for patient at increased risk of PAD (Table 1).

Table 1 — *Patients at Increased Risk of PAD*

A	Age ≥65 years
B	Age 50-64 years, with risk factors for atherosclerosis (eg, diabetes mellitus, history of smoking, hyperlipidemia, hypertension) or family history of PAD
C	Age <50 years, with diabetes mellitus and 1 additional risk factor for atherosclerosis
D	Individuals with known atherosclerotic disease in another vascular bed (eg, coronary, carotid, subclavian, renal, mesenteric artery stenosis, or abdominal aortic aneurysm)

In contrast to commonly held belief, PAD appears to afflict Indian diabetics at similar to higher rates as those found in Western populations in the same age groups. Diabetes has some unique characteristics in Indians, as Asian Indian phenotype has a high prevalence of young onset diabetes occurring before age 40. Hence, PAD, whose prevalence increases with age, appear to increase their susceptibility at a much earlier age among Indian diabetics. So, the clinical assessment for PAD should start at an earlier age among Indian diabeticscompared to Western populations.

*Randomized control trials*in Indian population are needed to determine the value of using the ABPI to identify asymptomatic patients with PAD for therapies to reduce cardiovascular risk. Additional research in Indian population is also necessary to develop and validate an improved clinical classification system for PAD that include symptoms, anatomic factors, and patient-specific risk factors which can be used to predict more meaningful prognosis and optimize treatment approach.

References

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