Peripheral arterial disease remains an afterthought among many clinicians, including specialists in cardiovascular diseases. In this issue, Sim et al. illuminate the prevalence of peripheral arterial disease (PAD) among Malaysian patients with known coronary or cerebrovascular disease. There have been few reports on the prevalence of PAD in Asian countries, and no large-scale, multi-center reports among Malaysians. There are several important points to take home from this report. But most importantly, we should focus on how this report on PAD in a different population strengthens the same lessons about PAD that we have already learned.

The investigators evaluated almost 400 consecutive patients, nearly all of whom had a history of coronary artery disease. Six percent of these patients had a history of prior cerebrovascular disease. Ankle-brachial index (ABI) was performed in these patients, revealing that more than one in five of these patients with coronary or cerebrovascular atherosclerotic disease had PAD as defined by an ABI < 0.9. The authors applied a simple and systematic method in order to identify these patients with PAD, the uniform performance of ABI in patients with coronary and/or cerebrovascular disease. ABI is a well-established test, the performance of which is well described by the authors. A small, handheld Doppler probe was used to perform the ABI, which makes the ABI a test that can be readily performed in the physician’s office without referring the patient to a vascular lab or imaging center. As easy to use as a hand held Doppler probe can be, a potentially easier method has been confirmed by Beckman et al. Using oscillometric automated blood pressure cuff system, blood pressure measurements were taken in all four extremities, and the ABI calculated. The authors demonstrated excellent correlation with ABIs derived by Doppler measurements.2

That ABI predicts the likelihood of wound healing and limb survival is not surprising. More importantly, as the authors discuss, the ABI predicts mortality. McKenna et al. followed a cohort of 744 patients, and found that an ABI < 0.85 had a relative risk of death of 2.36, while an ABI < 0.4 implies a relative risk of death of 4.49.3 Among a cohort of 1537 men and women with hypertension, Newman et al. found that the relative risk of total mortality for an ABI < 0.9 was 4.1, and the relative risk of morbidity and mortality from cardiovascular disease was 2.4 compared to those with a normal ABI.4

As the authors note, the presence of PAD impacts patient outcomes. The GRACE registry is a worldwide multi-center registry of patients treated with acute coronary syndromes (ACS) in 245 centers in 30 countries and has enrolled nearly 100,000 patients. The presence of preexisting PAD was a determinant of outcomes in patients presenting with ACS. Over 30,000 patients were examined by Mukherjee et al. to determine the ability of the presence of peripheral arterial disease to predict patient outcomes. Among patients presenting with ACS, 7.2% of patients with a history of PAD suffered in-hospital mortality, compared to 4.5% of those without PAD. And patients with a history of PAD and stroke died 9.4% of the time. At six months patients with PAD had an odds ratio of death, myocardial infarction (MI) or combined endpoint of death/MI/stroke of 1.49, 1.47 and 1.46 compared to those with no history of PAD or stroke. Patients with a history of PAD and stroke who presented with ACS had an odds ratio of death, MI or combined endpoint of death/MI/stroke of 1.79, 1.8 and 1.95.5 It seems intuitive that more extensive disease should imply worse outcomes, and Mukherjee et al. have demonstrated the validity of our intuition.

Patients with coronary disease, and those with cerebrovascular disease have reason to be treated with all the appropriate therapies for plaque stabilization and the prevention of atherothrombosis. Atherosclerosis is a systemic disease, and the authors are justified in recommending an aggressive approach to the treatment of atherosclerosis in patients with PAD, as they outline in their discussion, and as the GRACE investigators demonstrated. It is not yet clearly demonstrated that those patients with PAD and coronary or cerebrovascular disease require more aggressive goals for lipid control for example. The patients in this study should already be on antiplatelet agents, statins, ace-inhibitors, beta-blockers. They should also be counselled regarding life-style changes, specifically smoking cessation.
and regular exercise.

Perhaps a potentially more important use of the ABI is to identify PAD among patients who have not yet been diagnosed with atherosclerosis in a vascular bed. Criqui et al. evaluated 613 patients aged 38 to 82 in southern California and found that 11.7% had PAD. Selvin et al. analyzed data from the National Health and Nutrition Examination Survey; ABIs were available for 2174 participants over 40 years old. The prevalence of PAD in this unselected population was 14.5% among those > 70 years old. The PAD Awareness, Risk and Treatment; New Resources for Survival (PARTNERS) program was a primary care based study based in 350 sites in 25 states. Nearly 70 participants were enrolled who were either over 70 years old, or > 50 years old with a history of diabetes mellitus or tobacco use. Twenty-nine percent of these participants had PAD as defined by an abnormal ABI.

Sim et al. report a prevalence of PAD of about 20% among Malaysian patients with atherosclerotic disease of the coronary and/or the cerebrovascular arteries. Identifying PAD was readily and reliably accomplished with the simple application of the ABI. These patients presumably are being treated for their known atherosclerosis. As an important public health measure, the use of ABI in primary care offices in order to identify patients with PAD, i.e. atherosclerosis, in patients at risk but without a previous diagnosis would identify those who should be more aggressively treated. As described above, patients with PAD are at increased risk for coronary and cardiovascular mortality so we must let their PAD lead us back to taking care of their hearts.

References