

## Modified ankle-brachial index increases the reliability of cardiovascular risk prediction

Peripheral artery disease is a good predictor of cardiovascular events. Ankle-brachial index (ABI) is a simple, noninvasive screening tool that can be used to identify both symptomatic and asymptomatic, lower-extremity peripheral artery disease; an ABI value of  $<0.9$  indicates the presence of disease. Current guidelines suggest ABI should be measured as the ratio of the highest systolic blood pressure (BP) of the two ankle arteries to the highest systolic BP of the arms; however, many published studies suggest that the use of the average, or even the lowest, systolic BP measurements might improve risk prediction.

Espinola-Klein and colleagues assessed patients admitted to hospital with chest pain to determine whether ABI underestimates the risk of cardiovascular events when the highest BP values are used for calculation. Follow-up information was collected for 812 patients for a median of 6.6 years. Patients who had an ABI  $<0.9$  calculated using the highest BP measurements had increased mortality, but not an increased rate of total cardiovascular events, compared with patients who had an ABI  $\geq 0.9$  with the highest measurements but  $<0.9$  when calculated using the lowest BP measurements. Patients with ABI  $\geq 0.9$  regardless of which BP measurements were used had the best event-free survival.

The authors conclude that clinicians should use the lowest (rather than the highest) ankle and arm systolic BP measurements in their ABI calculations to increase the reliability of cardiovascular risk prediction.

**Original article** Espinola-Klein C *et al.* (2008) Different calculations of ankle-brachial index and their impact on cardiovascular risk prediction. *Circulation* **118**:961–967

## Late gadolinium enhancement predicts cardiovascular risk in patients with diabetes

Unrecognized or 'silent' myocardial infarction is common in patients with diabetes and is associated with increased morbidity and mortality. Late gadolinium enhancement (LGE) on cardiac MRI can detect myocardial scarring missed by other standard techniques. Kwong

*et al.* conducted an observational study to determine whether this imaging technique should be used to predict major adverse cardiovascular events (MACEs) in patients with diabetes.

Cardiac MRI showed LGE in 30 of 107 patients with diabetes who had no clinical evidence of myocardial infarction by history, medical record and/or substantial Q waves on electrocardiography. The patients with LGE had significantly increased MACE rate and all-cause mortality. Indeed, the event-free survival of patients with myocardial scarring detectable by LGE was similar to that of 74 control patients with clinically apparent myocardial infarction. Furthermore, LGE, particularly in the right coronary artery territory, had a stronger association with MACEs and all-cause mortality than percutaneous coronary intervention, resting wall-motion abnormality, left ventricular end-systolic and end-diastolic volume index, and left ventricular ejection fraction.

LGE on cardiac MRI is, therefore, a useful, noninvasive marker that can identify silent myocardial infarction and predict risk of cardiovascular events in patients with diabetes. The authors of this study recommend that diabetic patients without LGE on cardiac MRI should be reassessed every 2 years, to confirm the continued absence of myocardial scarring.

**Original article** Kwong RY *et al.* (2008) Incidence and prognostic implication of unrecognized myocardial scar characterized by cardiac magnetic resonance in diabetic patients without clinical evidence of myocardial infarction. *Circulation* **118**:1011–1020

## Omega-3 fatty acids reduce mortality among patients with chronic heart failure

The positive effects of supplementation with n-3 polyunsaturated fatty acids (omega-3 fatty acids) among patients with coronary heart disease or acute coronary syndromes have been widely reported in the literature. The GISSI-HF investigators have now shown that the benefits of omega-3 fatty acids extend to patients with NYHA class II–IV chronic heart failure.

This randomized, double-blind trial was conducted over a 31-month period at 356 medical centers in Italy. Patients were randomly assigned to receive 1 g daily omega-3