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## IN BRIEF

### CARDIAC RESUSCITATION

#### AEDs improve out-of-hospital cardiac arrest survival

The increased use of automated external defibrillators (AEDs) has led to improved survival from out-of-hospital cardiac arrests (OHCA), according to a study conducted in the Netherlands. In total, 6,133 OHCA were identified over the 7-year study period. An increase in survival rate following OHCA was observed in patients who presented with a shockable initial rhythm (from 29.1% to 41.4%;  $P$  for trend  $<0.0001$ ). Rates of survival increased at each stage (to emergency department, to admission, and to discharge) in these patients. During the study period, the rates of AED use almost tripled (21.4% to 59.3%;  $P$  for trend  $<0.0001$ ). Given the favourable outcomes associated with increased AED use on OHCA, continuous efforts to introduce or extend AED programs are recommended.

**Original article** Blom, M. T. *et al.* Improved survival after out-of-hospital cardiac arrest and use of automated external defibrillators. *Circulation* doi:10.1161/CIRCULATIONAHA.114.010905

### IMAGING

#### CFR is an independent marker of adverse cardiac outcomes in angiographically detected CAD

Coronary flow reserve (CFR) is an integrated marker of diffuse and small vessel coronary artery disease (CAD). Taqueti and colleagues assessed the contributions of CFR and luminal angiographically detected CAD on cardiovascular outcomes. The extent and severity of CAD was determined in 329 patients referred for invasive coronary angiography using the CAD prognostic index, and by CFR assessed by PET. CFR and the CAD prognostic index were independently associated with adverse cardiovascular events. Patients with low CFR exhibited rates of events similar to patients with high angiographic scores, and those with low CFR showed the greatest risk of events ( $P=0.001$ ). Diffuse atherosclerosis might, therefore, contribute to heart failure and cardiovascular mortality.

**Original article** Taqueti, V. R. *et al.* Global coronary flow reserve is associated with adverse cardiovascular events independently of luminal angiographic severity and modifies the effect of early revascularization. *Circulation* doi:10.1161/CIRCULATIONAHA.114.011939

### HEART FAILURE

#### Regional patient variability and outcomes in TOPCAT

In the TOPCAT study, spironolactone therapy did not reduce death from cardiovascular causes, aborted cardiac arrest, or hospitalization of patients with heart failure and preserved ejection fraction. In a *post hoc* analysis, the TOPCAT investigators examined the regional difference in clinical outcomes and responses to spironolactone within the study population. Compared with patients from Russia and Georgia, patients from the Americas had greater changes in potassium and creatinine levels in response to spironolactone treatment. Furthermore, the rates of the primary outcome were reduced by spironolactone in patients from the Americas, but not in patients from Russia and Georgia.

**Original article** Pfeffer, M. A. *et al.* Regional variation in patients and outcomes in the treatment of preserved cardiac function heart failure with an aldosterone antagonist (TOPCAT) trial. *Circulation* doi:10.1161/CIRCULATIONAHA.114.013255