

for atrial fibrillation. They emphasize the importance of early diagnosis and triage of affected patients, as rapid surgical intervention might improve their outcome.

**Original article** Cummings JE *et al.* (2006) Brief communication: atrial–esophageal fistulas after radiofrequency ablation. *Ann Intern Med* **144**: 572–574

### Reduced neurohormone activation in patients with HF after aerobic physical training

Activation of neurohormones, such as brain natriuretic peptide (BNP), is associated with heart failure (HF). Although aerobic physical training can improve exercise tolerance in patients with HF, its influence on BNP secretion is unclear. In a prospective, randomized study of 95 patients with HF, Passino *et al.* assessed the effects of a progressive physical training program on neurohormonal activity.

Patients with impaired left ventricular systolic function (ejection fraction <45%) and exercise capacity (peak oxygen uptake <25 ml min<sup>-1</sup> kg<sup>-1</sup>) were included in the study. Forty-seven patients were assigned to a training program, which involved cycling for 30 min at least three times weekly, with monitoring of heart rate to maintain a value corresponding to 65% of peak oxygen uptake; the remainder continued with their normal lifestyle. Neurohormone assays and cardiopulmonary stress tests were done at enrollment, and at 3 months and 9 months of follow-up. Patients also underwent echocardiography examinations and rated their quality of life according to the Minnesota Living With Heart Failure Questionnaire.

Over 9 months, the training group showed improvements in peak oxygen uptake (+13%,  $P < 0.001$ ), systolic function (ejection fraction +9%,  $P < 0.01$ ), and quality of life, and reduced activation of BNP, amino-terminal proBNP and norepinephrine (–34%,  $P < 0.01$ ; –32%,  $P < 0.05$ ; and –26%,  $P < 0.01$ , respectively). The authors conclude that aerobic training can antagonize neurohormone activation in patients with HF and that it might be useful to assay for levels of BNP and amino-terminal proBNP in patients who undertake a physical training program.

**Original article** Passino C *et al.* (2006) Aerobic training decreases B-type natriuretic peptide expression and adrenergic activation in patients with heart failure. *J Am Coll Cardiol* **47**: 1835–1839

### Treatment of aortic hypoplasia by stent expansion

Residual hypoplasia of the aortic cross or isthmus is a common outcome of coarctectomy. Narrowing of the lumen can lead to hypertension, and associated morbidity and mortality are high in long-term follow-up. Although patients with mild residual hypoplasia have a raised risk of cardiovascular disease, these patients would not be considered for surgical intervention because the risks of surgical correction are felt to outweigh the potential benefits. Boshoff *et al.* evaluated the efficacy of stent expansion in treating hypoplasia of the aortic cross or isthmus in 20 patients with arterial hypertension and aortic hypoplasia, 17 of whom had previously undergone coarctectomy.

In total, 23 stents were implanted; three patients required stenting of both the cross and the isthmus. Following surgery, the median systolic gradient across the aortic arch decreased from 17 mmHg to 1 mmHg, and the mean diameter of the affected segment increased from 10 mm to 17 mm. At 1 month, mean systolic blood pressure had decreased from 141 mmHg to 128 mmHg. Arterial hypertension resolved in 12 patients, and those remaining on medication were either taking greatly reduced doses or had improved blood pressure control. The subclavian artery was crossed in four patients, who had no complications during follow-up of 0.6–3.3 years.

Stenting of the hypoplastic segment would therefore seem to be a safe and effective means of correcting aortic hypoplasia and of reducing or eliminating hypertension in patients with this condition.

**Original article** Boshoff D *et al.* (2006) Stenting of hypoplastic aortic segments with mild pressure gradients and arterial hypertension. *Heart* [doi: 10.1136/hrt.2005.084822]

### Microvolt T-wave alternans predicts mortality in patients with ischemic cardiomyopathy

Implantable cardioverter-defibrillators (ICDs) can reduce sudden cardiac death in patients with ischemic heart disease and left ventricular dysfunction, but cumulative costs could preclude their widespread use. Microvolt T-wave alternans (MTWA) detects alterations in T-wave amplitudes and can determine