IN BRIEF

VALVULAR DISEASE

TriClip system reduces tricuspid regurgitation

The TriClip system, a first-in-class transcatheter edge-to-edge repair system, is safe and effective in reducing tricuspid regurgitation by at least one grade, according to findings from the TRILUMINATE study. The investigators in this prospective, multicentre, single-group study enrolled 85 patients with moderate or greater tricuspid regurgitation. The severity of tricuspid regurgitation was graded according to a five-class grading scheme. At 30 days after the procedure, 86% of 83 patients with echocardiogram data had a reduction in severity of tricuspid regurgitation by at least one grade (primary efficacy end point). At 6 months, the reduction in tricuspid regurgitation was associated with an improvement in right ventricular function. No cases of stroke, myocardial infarction or device embolization were observed during the study period. Randomized controlled trials are needed to assess the long-term outcomes associated with the TriClip system.

ORIGINAL ARTICLE Nickenig, G. et al. Transcatheter edge-to-edge repair for reduction of tricuspid regurgitation: 6-month outcomes of the TRILUMINATE single-arm study. *Lancet* https://doi.org/10.1016/S0140-6736(19)32600-5 (2019)

CEREBROVASCULAR DISEASE

A lower LDL-C target is better after stroke

In patients with atherosclerotic disease who have experienced an episode of ischaemic stroke or transient ischaemic attack, a target LDL-cholesterol (LDL-C) level of <70 mg/dl, compared with a target of 90–110 mg/dl, is associated with a reduced risk of subsequent cardiovascular events. These findings come from a parallel-group trial that involved 2,860 patients who were randomly assigned to one of the LDL-C target groups and followed up for a median of 3.5 years. At follow-up, the mean LDL-C levels of the lower-target and higher-target groups were 65 mg/dl and 96 mg/dl, respectively. The composite primary end point of major cardiovascular events occurred in 8.5% of the lower-target group and 10.9% of the higher-target group (adjusted HR 0.78, 95% CI 0.61–0.98, $P = 0.04$). "The results of our trial suggest that a target LDL-C level of <70 mg/dl could provide a further risk reduction," conclude the investigators.

ORIGINAL ARTICLE Amarenco, P. et al. A comparison of two LDL cholesterol targets after ischemic stroke. *N. Engl. J. Med.* https://doi.org/10.1056/NEJMoa1910355 (2019)

PHARMACOTHERAPY

Neurohormonal blockade in patients with LVADs

The use of neurohormonal blockade (NHB) therapy is associated with increased survival and improved quality of life in patients with left ventricular assist devices (LVADs). The INTERMACS study was a retrospective cohort analysis that included 12,144 patients with continuous-flow LVADs, 85.8% of whom were treated with NHB, which included single, double or triple therapy using angiotensin-converting enzyme inhibitors or angiotensin-receptor blockers, β-blockers or mineralocorticoid-receptor antagonists. Patients receiving any NHB therapy had a significant increase in survival compared with those not receiving NHB therapy. Furthermore, patients receiving triple therapy had the lowest risk of death in unadjusted and adjusted models. These findings suggest that the optimal treatment regimen for heart failure after LVAD implantation is similar to guideline-directed therapy for heart failure with reduced ejection fraction.

ORIGINAL ARTICLE McCullough, M. et al. Neurohormonal blockade and clinical outcomes in patients with heart failure supported by left ventricular assist devices. *JAMA Cardiol.* https://doi.org/10.1001/jamacardio.2019.4965 (2019)

ACUTE CORONARY SYNDROMES

Anti-inflammatory therapy for secondary prevention after MI

In patients with a recent myocardial infarction (MI), anti-inflammatory therapy with low-dose colchicine reduces the risk of ischaemic cardiovascular events compared with placebo. This finding from the COLCOT trial was presented at the AHA Scientific Sessions 2019.

Chronic, low-grade inflammation drives the development and progression of atherosclerosis, and the inflammation is exacerbated after an acute coronary syndrome, such as an MI. Trials have been conducted to investigate anti-inflammatory therapies in patients with coronary artery disease, including canakinumab in the CANTOS trial, with positive results, and methotrexate in the CIRT trial, with neutral results.

In the COLCOT trial, investigators used the potent, oral anti-inflammatory agent colchicine, which was originally extracted from the autumn crocus and is indicated for use in patients with gout or pericarditis. A total of 4,745 patients who had had an MI in the past 30 days (mean 13.5 days) were randomly assigned to receive low-dose colchicine (0.5 mg once daily) or placebo. Patients also received guideline-directed medical treatment involving dual antiplatelet therapy and a statin.

After follow-up (median 22.6 months), the rate of the primary end point (a composite of death from cardiovascular causes, resuscitated cardiac arrest, MI, stroke or urgent hospitalization for angina leading to coronary revascularization) was lower in the colchicine group than in the placebo group (5.5% versus 7.1%; HR 0.77, 95% CI 0.61–0.96, $P = 0.02$). This difference was driven by significant reductions in the rates of stroke and angina. Of note, pneumonia was more common in the

HEART FAILURE

Dapagliflozin for HFrEF — improved outcomes across all ages

The DAPA-HF trial demonstrated the efficacy of dapagliflozin in reducing major adverse outcomes in patients with heart failure with reduced ejection fraction (HFrEF). Two post-hoc analyses of DAPA-HF now show that the benefits of dapagliflozin are consistent across all ages or baseline symptom statuses.

In the placebo-controlled DAPA-HF trial, dapagliflozin (a sodium–glucose cotransporter 2 inhibitor) was shown to reduce the primary outcome of hospitalization for heart failure (HF) and cardiovascular death compared with placebo in patients with HFrEF with or without diabetes mellitus. In light of these favourable findings, Martinez and colleagues sought to determine whether the cardioprotective benefits of dapagliflozin were consistent across all age groups in a post-hoc analysis of DAPA-HF. The mean age of the 4,744 trial participants was 66.3 years (range 22–94 years). In total, 13.4% of patients were aged <55 years, 26.2% were aged 55–64 years, 36.2% were aged 65–74 years and 24.2% were aged ≥75 years. The effect of dapagliflozin compared with placebo in reducing all-cause mortality and the primary outcome was consistent across all age categories. The rate of drug discontinuation and the incidence of adverse events increased with age but were not significantly different between the two treatment groups.

In a separate post-hoc analysis, Kosiborod and colleagues examined the effects of dapagliflozin on numerous health status outcomes using the Kansas City Cardiomyopathy Questionnaire (KCCQ). KCCQ data were available for 4,443 patients