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IN BRIEF

DEVICE THERAPY

Superiority of a centrifugal-flow cardiac pump

The HeartMate 3 Left Ventricular Assist System (Abbott) was designed with a fully magnetically levitated centrifugal continuous-flow pump to address concerns about thrombosis with the mechanical-bearing axial continuous-flow HeartMate II device. In the randomized MOMENTUM 3 trial, the two pumps were compared in 366 patients with advanced heart failure (either as bridge to transplantation or destination therapy). The composite primary end point (survival at 2 years free from disabling stroke or reoperation because of a malfunctioning device) occurred in 79.5% of patients in the HeartMate 3 group compared with 60.2% of patients in the HeartMate II group (HR 0.46, 95% CI 0.31–0.69, $P < 0.001$ for superiority). Of note, the overall rate of stroke was lower with the centrifugal-flow pump than with the axial-flow pump (10.1% versus 19.2%; HR 0.47, 95% CI 0.27–0.84, $P = 0.02$).

ORIGINAL ARTICLE Mehra, M. R. *et al.* Two-year outcomes with a magnetically levitated cardiac pump in heart failure. *N. Engl. J. Med.* https://doi.org/10.1056/NEJMoa1800866 (2018)

DIABETES

No benefit of canakinumab in diabetes prevention

Given that subclinical inflammation is involved in the pathology of peripheral insulin resistance and impaired pancreatic insulin secretion, the CANTOS trial investigators analysed whether canakinumab (an IL-1β inhibitor) reduced the rate of incident diabetes mellitus. Of the 10,061 patients with previous myocardial infarction and a high-sensitivity C-reactive protein level ≥2 mg/l enrolled in the trial, 40.3% had diabetes at baseline, 49.3% had prediabetes, and 10.4% were normoglycaemic. Over 3.7 years of follow-up in those without diabetes at baseline, canakinumab did not reduce the incidence of new-onset diabetes compared with placebo (HR 1.02, 95% CI 0.87–1.19). Nevertheless, IL-1β inhibition was similarly effective in reducing the rate of major adverse cardiovascular events in patients with or without diabetes.

ORIGINAL ARTICLE Everett, B. M. *et al.* Anti-inflammatory therapy with canakinumab for the prevention and management of diabetes. *J. Am. Coll. Cardiol.* https://doi.org/10.1016/j.jacc.2018.03.002 (2018)

ANTIPLATELET THERAPY

Pharmacogenomic approach to tailor drug therapy

Variation in patient response to antiplatelet therapy with clopidogrel occurs because of genetic polymorphisms that affect drug metabolism. In the randomized PHARMCLO trial, a pharmacogenomic approach to tailoring antiplatelet therapy (clopidogrel, prasugrel, or ticagrelor) on the basis of *ABCB1*, *CYP2C19*2*, and *CYP2C19*17* genotype was compared with standard care. A total of 888 patients with acute coronary syndrome were enrolled before the trial was prematurely stopped. Clopidogrel was used more in the standard-care group, ticagrelor was used more in the pharmacogenomic group, and prasugrel was used equally in each group. During 12 months of follow-up, the rate of the primary composite end point (cardiovascular death or the first occurrence of nonfatal myocardial infarction, nonfatal stroke, or major bleeding) was lower in the pharmacogenomic group than in the standard-care group (15.9% versus 25.9%; HR 0.58, 95% CI 0.43–0.78, $P < 0.001$), indicating that personalized therapy might reduce the rate of ischaemic and bleeding events.

ORIGINAL ARTICLE Notarangelo, F. M. *et al.* Pharmacogenomic approach to selecting antiplatelet therapy in acute coronary syndromes: PHARMCLO trial. *J. Am. Coll. Cardiol.* https://doi.org/10.1016/j.jacc.2018.02.029 (2018)