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IN BRIEF

INFLAMMATION

Targeting the NLRP3 inflammasome after MI

The intense inflammatory response that follows myocardial infarction is associated with increased infarct size and impaired cardiac function. IL-1β and IL-18 are important mediators of this response and are controlled by the NLRP3 inflammasome. Female pigs ($n = 30$) were subjected to 75 min of transluminal balloon occlusion of the left anterior descending coronary artery to mimic myocardial infarction, and were then randomly assigned to receive MCC950 (a novel, small-molecule inhibitor of the NLRP3 inflammasome) or placebo for 7 days. The infarct size and area at risk, assessed using 3D echocardiography and histological staining, were lower with MCC950 than with placebo. MCC950 treatment was associated with preserved left ventricular ejection fraction and reduced myocardial neutrophil influx. "Interference with NLRP3-inflammasome-mediated signalling therefore has become a promising target to reduce infarct size and preserve cardiac function in MI patients," conclude the investigators.

ORIGINAL ARTICLE van Hout, G. P. J. *et al.* The selective NLRP3-inflammasome inhibitor MCC950 reduces infarct size and preserves cardiac function in a pig model of myocardial infarction. *Eur. Heart J.* http://dx.doi.org/10.1093/eurheartj/ehw247 (2016)

IMAGING

Cost-effectiveness of FFR_{CT}-guided care

The PLATFORM trial showed that, in patients with stable chest pain, coronary CT angiography (CCTA) plus estimation of fractional flow reserve (FFR_{CT}) can be used safely and effectively to guide care over 90 days. Now, the PLATFORM investigators report that this strategy can reduce costs compared with usual care over 1-year follow-up. In total, 581 of the 584 patients with stable chest pain enrolled into the trial completed the 1-year follow-up. In patients with planned invasive coronary angiography, care guided by CCTA and selective FFR_{CT} was associated with 33% lower costs, and equivalent quality-of-life and clinical outcomes, compared with usual care.

ORIGINAL ARTICLE Douglas, P. S. *et al.* 1-year outcomes of FFR_{CT}-guided care in patients with suspected coronary disease: the PLATFORM study. *J. Am. Coll. Cardiol.* http://dx.doi.org/10.1016/j.jacc.2016.05.057 (2016)

CARDIOMYOPATHIES

In vitro genetic correction of familial dilated cardiomyopathy

Deletion of the arginine 14 codon (R14del) in the phospholamban gene (*PLN*), which encodes a protein that inhibits Ca^{2+} uptake by SERCA2a, is associated with inherited dilated cardiomyopathy. Heterozygous patients have ventricular dilatation, contractile dysfunction, ventricular arrhythmias, and heart failure. Stillitano *et al.* obtained induced pluripotent stem cells (iPSCs) from a patient with a *PLN* R14del mutation and differentiated them into cardiomyocytes. Gene editing to correct the *PLN* mutation was performed with transcriptor activator-like effector nucleases (TALENs). Using 3D human engineered cardiac tissue (hECT) technology, the researchers found that the mutant hECTs had a lower excitation threshold potential (suggesting susceptibility to arrhythmogenesis), a lower developed twitch force amplitude, and slower maximum rates of contraction and relaxation, compared with corrected hECTs. "This study," conclude the investigators, "lays the groundwork for targeted gene therapy for treating patients with hereditary forms of cardiomyopathy."

ORIGINAL ARTICLE Stillitano, F. *et al.* Genomic correction of familial cardiomyopathy in human engineered cardiac tissues. *Eur. Heart J.* http://dx.doi.org/10.1093/eurheartj/ehw307 (2016)