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Inside This Issue

STATE-OF-THE-ART PAPER

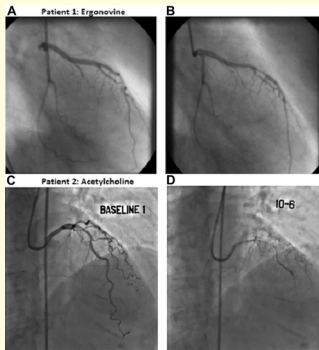
STATE-OF-THE-ART PAPER

Provocative Testing for Coronary Reactivity and Spasm

103

Melody Zaya, Pujia K. Mehta, C. Noel Bairey Merz

Coronary spasm is an important etiology of chest pain, and it can lead to significant adverse outcomes for patients. Diagnosis is often difficult due to the transient nature of the symptoms. In this state-of-the-art paper, Zaya and colleagues review the role of and the agents used for provocative testing in the diagnosis of coronary spasm.



CLINICAL RESEARCH

CLINICAL TRIALS

Final 1-Year Results of the CADUCEUS Trial

110

Konstantinos Malliaras, Raj R. Makkar, Rachel R. Smith, Ke Cheng, Edwin Wu, Robert O. Bonow, Linda Marbán, Adam Mendizabal, Eugenio Cingolani, Peter V. Johnston, Gary Gerstenblith, Karl H. Schuleri, Albert C. Lardo, Eduardo Marbán

Cardiosphere-derived cells (CDCs) were shown to exert regenerative effects at 6 months in the CADUCEUS (CARDiosphere-Derived aUtologous Stem CELls to Reverse ventricUlar dysfunction) trial. This paper reports on the 1-year results of that trial. Autologous CDCs (12.5 to 25×10^6) grown from endomyocardial biopsies were intracoronarily infused in 17 patients with left ventricular dysfunction, 1.5 to 3 months after myocardial infarction. A total of 8 patients were followed as routine-care controls. At 1 year, magnetic resonance imaging revealed that the scar mass decreased and viable mass increased in CDC-treated subjects but not in control patients. Scar shrinkage correlated with an increase in viability and with an improvement in regional function. Safety endpoints were equivalent between groups. The study concludes that intracoronary administration of autologous CDCs did not raise statistically significant safety concerns. Analysis of exploratory efficacy endpoints revealed a decrease in scar size, an increase in viable myocardium, and improved regional function of infarcted myocardium 1-year post-treatment.

(continued on page A-32)

HEART FAILURE**Quality of Care for Heart Failure Patients Hospitalized for Any Cause****123**

Saul Blecker, Sunil K. Agarwal, Patricia P. Chang, Wayne D. Rosamond, Donald E. Casey, Anna Kucharska-Newton, Martha J. Radford, Josef Coresh, Stuart Katz

This study compares the rates of compliance with care measures for hospitalized heart failure patients with a principal discharge diagnosis of heart failure and those with another principal discharge diagnosis. Patients with acute or chronic heart failure in the ARIC (Atherosclerosis Risk in Communities) study surveillance areas were included. Of 4,345 hospitalizations of heart failure patients, 39.6% carried a principal diagnosis of heart failure. Patients with principal heart failure diagnosis had higher rates of left ventricular (LV) function assessment (89.1% vs. 82.5%) and discharge angiotensin-converting enzyme (ACE) inhibition/angiotensin receptor blockers (ARBs) in LV dysfunction (64.1% vs. 56.3%) as compared with patients hospitalized for another cause. LV assessment and ACE inhibitor/ARB use was associated with reductions in 1-year post-discharge mortality (adjusted odds ratios: 0.66 and 0.72, respectively), which did not differ for patients with versus without a principal heart failure diagnosis. Blecker and colleagues conclude that, compared with individuals hospitalized with a principal diagnosis of heart failure, heart failure patients hospitalized for other causes were less likely to receive guideline-recommended care.

Editorial Comment: Robert O. Bonow, Mihai Gheorghiade, p. 131

HEART RHYTHM DISORDERS**ICD Lead Failure in Children and Young Adults****133**

Christopher M. Janson, Akash R. Patel, William J. Bonney, Karen Smoots, Maully J. Shah

This study aimed to investigate the impact of lead diameter and design on implantable cardioverter-defibrillator (ICD) lead survival in children and young adults. Lead performance was reviewed in consecutive subjects age ≤ 30 years with transvenous right ventricular ICD leads implanted. A total of 120 ICD leads were implanted in 101 patients at a median age of 15.5 ± 21.9 years. There were 47 small-diameter (≤ 8 F) and 73 standard-diameter (> 8 F) leads. During a median follow-up of 28.7 months, there were 25 lead failures (21% prevalence), with an incidence of 5.6% per year. The Sprint Fidelis (SF) leads (Medtronic, Inc., Minneapolis, Minnesota) had lower 3-year (69% vs. 92%) and 5-year (44% vs. 86%) survival probability than standard-diameter leads. Multivariate analysis revealed that the SF design conferred the greatest hazard ratio (HR) for lead failure (HR: 4.42). In this single-center pediatric study that evaluated lead diameter, lead design, and patient factors, the SF design conferred the highest risk of lead failure; this suggests that design, rather than diameter, is the critical issue in ICD lead performance.

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