

JACC

June 10, 2014 Volume 63, No. 22

JOURNAL of the American College of Cardiology

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STATE-OF-THE-ART PAPERS

Atrial Remodeling and Atrial Fibrillation

2335

Stanley Nattel, Masahide Harada

Atrial fibrillation (AF), a major cause of cardiovascular morbidity and mortality, is the final common endpoint of atrial remodeling and is caused by a variety of cardiac diseases and conditions. In this paper, the authors provide a detailed review on atrial remodeling, including its mechanism and its role in the AF disease process.

STATE-OF-THE-ART PAPERS

Myocardial Bridging

2346

Michel T. Corban, Olivia Y. Hung, Parham Eshtehardi, Emad Rasoul-Arzrumly, Michael McDaniel, Girum Mekonnen, Lucas H. Timmins, Jerre Lutz, Robert A. Guyton, Habib Samady

Patients with myocardial bridging, although often asymptomatic, may present with a variety of cardiac symptoms including acute coronary syndromes and sudden cardiac death. In this state-of-the-art paper, the authors review the pathophysiology of myocardial bridging. Diagnostic modalities and therapeutic options available for managing this anomaly are also discussed.



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CLINICAL RESEARCH

ACUTE CORONARY SYNDROME

Long-Term Effect of Early Metoprolol in STEMI

2356

Gonzalo Pizarro, Leticia Fernández-Friera, Valentin Fuster, Rodrigo Fernández-Jiménez,
José M. García-Ruiz, Ana García-Álvarez, Alonso Mateos, María V. Barreiro, Noemí Escalera,
Maite D. Rodriguez, Antonio de Miguel, Inés García-Lunar, Juan J. Parra-Fuertes,
Javier Sánchez-González, Luis Pardillos, Beatriz Nieto, Adriana Jiménez, Raquel Abejón,
Teresa Bastante, Vicente Martínez de Vega, José A. Cabrera, Beatriz López-Melgar, Gabriela Guzman,
Jaime García-Prieto, Jesús G. Mirelis, José Luis Zamorano, Agustín Albarrán, Javier Goicolea,
Javier Escaned, Stuart Pocock, Andrés Iñiguez, Antonio Fernández-Ortiz, Vicente Sánchez-Brunete,
Carlos Macaya, Borja Ibanez

The objective of the METOCARD-CNIC (Effect of Metoprolol in Cardioprotection During an Acute Myocardial Infarction) trial was to evaluate the long-term effects of intravenous (IV) metoprolol administration before reperfusion on left ventricular (LV) function and clinical events. A total of 270 patients with Killip class ≤II anterior ST-segment elevation myocardial infarction (STEMI) were randomized to either pre-reperfusion IV metoprolol or a control. In patients with anterior Killip class ≤II STEMI undergoing primary percutaneous coronary intervention, early IV metoprolol before reperfusion resulted in higher long-term LVEF, a reduced incidence of severe LV systolic dysfunction and implantable cardioverter-defibrillator indications, and fewer admissions due to heart failure.

Editorial Comment: David Antoniucci, p. 2363

CARDIOMETABOLIC RISK

PCSK9 in Familial and Nonfamilial Hypercholesterolemia

2365

Gilles Lambert, Francine Petrides, Mathias Chatelais, Dirk J. Blom, Benjamin Choque, Fatiha Tabet, Gida Wong, Kerry-Anne Rye, Amanda J. Hooper, John R. Burnett, Philip J. Barter, A. David Marais

The objective of this study was to assess whether elevated PCSK9 levels constitute a greater risk for individuals with heterozygous familial hypercholesterolemia (HeFH) and already reduced low-density lipoprotein receptor (LDLR) levels. Circulating PCSK9 was measured in nontreated HeFH patients carrying LDLR missense mutations and in normolipidemic control subjects. PCSK9 dose-dependently reduced LDLR expression in control and familial hypercholesterolemia (FH) fibroblasts as well as reduced LDLR abundance in lymphocytes to similar extents. The results reveal that elevated PCSK9 levels are equally detrimental for HeFH and non-FH patients, and also explain why both types of patients respond to monoclonal antibodies targeting PCSK9.

Editorial Comment: Godfrey S. Getz, p. 2374

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