The Evolving Role of Neurohormonal Antagonists in the Post-Myocardial Infarction Patient with Left Ventricular Dysfunction

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Despite the advances made in the prevention of cardiovascular disease, over 1.1 million Americans will sustain an acute myocardial infarction (AMI) this year. Patients face substantial risk after they have had a myocardial infarction (MI). Within 6 years of a heart attack, 18% of men and 35% of women will have another MI, 7% of men and 6% of women will experience sudden death, and 22% of men and 46% of women will be disabled with heart failure. As many as 30%–40% of patients with AMI have symptomatic or asymptomatic left ventricular (LV) dysfunction. Therefore, effective management of the post-MI patient in the hospital and after discharge is a very important health care priority.

The papers comprising this supplement explore the importance of neurohormonal activation in post-MI patients with LV dysfunction. Dr. James Udelson and colleagues focus on post-MI ventricular remodeling. Their review summarizes the evidence supporting key roles for both the renin-angiotensin-aldosterone and sympathetic nervous systems in the pathophysiology of ventricular remodeling and progression to heart failure. Dr. Mihai Gheorghiade and colleagues review the safety and effectiveness of the early use of intravenous ß-blockers followed by the oral administration of these drugs in post-MI patients. These authors

highlight questions that have remained unanswered until the most recent clinical trials.

Dr. Jonathan Sackner-Bernstein's paper provides a critical review of the Carvedilol Post-Infarct Survival Control in Left Ventricular Dysfunction (CAPRICORN) trial, which showed that carvedilol significantly reduced the risk of death in post-MI patients with LV dysfunction. His review of another pivotal clinical trial, Carvedilol or Metoprolol European trial (COMET), in which carvedilol, compared with metoprolol, significantly reduced the risk of death in patients with chronic heart failure, indicates that all ß-blockers may not be equally effective in this patient population, thus reinforcing the important point that ß-blockers are not simply interchangeable agents. Dr. William T. Abraham focuses on the cardiovascular risk in patients with metabolic syndrome, diabetes, and hypertension. Additional findings summarized in his review indicate that the benefits of a $ß_1$, $ß_2$, and α_1-adrenoceptor blockade with carvedilol extend to patients with either diabetes or hypertension.

Dr. Gregg Fonarow reviews evidence that supports the early, in-hospital initiation of antiplatelet therapy, ß-blockers, angiotensin-converting enzyme (ACE) inhibitors, and lipid-lowering drugs to improve outcomes in patients with AMI. Initiating the use of protective cardiovascular medications while patients with AMI are in the hospital has been shown to improve treatment rates, long-term compliance, and clinical outcomes; it is now recommended as the standard of care for individuals with coronary heart disease. Dr. Christopher Cannon reviews critical treatment pathways for patients with AMI. These standardized protocols have the potential to optimize and streamline patient care.

The supplement also includes consensus guidelines on the role of ß-blocker therapy in the post-MI patient with and without LV dysfunction and a post-MI treatment algorithm developed by the faculty. By providing important and up-to-date information about the pathophysiology of ventricular remodeling after an MI, as well as the results of recent clinical trials with neurohumoral antagonists, and the optimal approaches to improving clinical outcomes in the post-MI setting, this supplement will hopefully enable health care providers to improve the care of their post-MI patients with LV dysfunction.