

Clinical Update on the Use of Natriuretic Peptides in the Treatment of Heart Failure

Gregg C. Fonarow, MD

Ahmanson-UCLA Cardiomyopathy Center, Division of Cardiology, The David Geffen School of Medicine at UCLA, Los Angeles, CA

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There have been a number of major advances in the understanding of the pathophysiology and management of chronic heart failure. This research has led to the recommended use of ACE inhibitors, beta-blockers, and aldosterone antagonists, which significantly reduce the risk of morbidity and mortality in chronic heart failure. Despite these advances, approximately 1 million patients with acute decompensated heart failure (ADHF) will be hospitalized this year, most of whom have had deteriorating hemodynamics and volume overload. The major expenditure for heart failure care is hospitalizations, with approximately \$25 billion spent annually on the inpatient management of acute ADHF. Any measure that will improve the diagnosis and treatment in these cases and shift care to the outpatient setting by shortening length of stay and decreasing readmission rates would be expected to have a favorable impact on the massive economic costs associated with this disease.

Tools to diagnose acute heart failure beyond the history and physical examination have been limited, and there has not been a reliable blood test to facilitate diagnosis. The B-type natriuretic peptide (BNP) blood test represents a significant advance in the evaluation of patients presenting with symptoms that may or may not represent heart failure, reducing diagnostic uncertainty compared to routine clinical assessment alone. BNP also has significant prognostic value. Elevations in BNP are associated with an independently increased mortality in

a variety of studies. Elevations in BNP are also associated with worsened clinical outcomes. BNP has all of the characteristics of an ideal biomarker for heart failure.

Through a better understanding of hemodynamic mechanisms and heart failure pathophysiology, new agents for ADHF have been developed and tested in clinical trials. Nesiritide (B-type natriuretic peptide) has been shown to be highly efficacious in patients with ADHF. A number of recent clinical trials have

demonstrated the safety, efficacy, and clinical role in providing cost-effective care of this FDA-approved agent for ADHF. The Acute Decompensated Heart Failure National Registry (ADHERE™) has provided important insights into the characteristics, current treatment, and outcomes of patients hospitalized with ADHF.

The goal of this supplement is to highlight diagnostic strategies for heart failure from the emergency department to the outpatient setting.

Treatment strategies to improve emergency department and hospital care of acute heart failure will be presented, as well as the diagnostic and therapeutic role of BNP in patients with renal insufficiency. Exciting new data for the management of acute decompensated heart failure will be presented. It is our hope that this information will prove useful in improving heart failure patient care, prompt discussion among physicians, and stimulate further research in this important area. ■