

Diagnostic and Therapeutic Uses of Natriuretic Peptides

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Admission to the hospital for congestive heart failure is a sentinel event. Nearly one-third of these patients will die within 1 year and one-half will be readmitted to the hospital. Large databases from the United States and the European Union provide clues as to why this may be so; the typical patient hospitalized for heart failure is elderly and often has normal left ventricular function, yet renal dysfunction is common and significant in these patients. Unfortunately, the scientific basis for the inpatient management of heart failure does not equal the remarkable progress that has been made in the past 2 decades in the outpatient treatment of left ventricular systolic dysfunction. Many large, randomized trials for therapies of acute decompensated heart failure have failed to show benefit in this exceedingly complex and deadly disease.

One bright spot in this field has been the discovery of the natriuretic peptides (NPs). For the first time these agents provide a mechanism to help diagnose or rule out decompensated heart failure. Moreover, they provide important prognostic information and may even be able to guide therapy. However, they are no panacea and, as with all blood tests, must be used in the context of the patient being evaluated with a realistic understanding of their limitations.

One particular natriuretic molecule, B-type natriuretic peptide (BNP), has been synthesized and is available as a therapeutic agent. It is

effective in improving hemodynamics and improving symptoms, yet its use has been curtailed by concerns that it may cause short-term renal dysfunction and increase 30-day mortality. Recent studies have alleviated some of these concerns but the debate over the use of BNP therapeutics underscores the complexity of the decompensated patient and our limited armamentarium. In particular, intravenous vasoactive therapy for heart failure has been available for decades and can be life saving, yet when used indiscriminately its drawbacks outweigh the benefits.

This supplement focuses on the role of NPs in the management of

the patients with decompensated heart failure and kidney disease. Much has been learned in the past decade about the diagnostic and therapeutic use of this 32-amino acid peptide. The NPs are an important tool for managing these complex patients; however, they must be integrated with careful patient evaluation, selection, and the use of existing therapies to provide the best outcome. ■

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