

BNP EvaluatR™

Congestive Heart Failure Management

Overview

Heart failure is a clinical syndrome manifested from multiple etiologies resulting in compromised cardiac contraction and diminished output. Nearly 5 million people in the US suffer from Congestive Heart Failure (CHF) and approximately 550,000 new cases present each year.¹ However, the vast majority of patients with symptomless left ventricular (LV) dysfunction remain undiagnosed.² The total cost to health care of managing heart-failure patients exceeds \$38 billion annually.³

Brain natriuretic peptide (BNP) is a neurohormone predominately produced in the left ventricle in response to pressure overload and volume

expansion.^{4,5} BNP synthesis and secretion is a protective response that is up-regulated in patients with heart failure and/or renal failure, resulting in vasodilation and diuresis/natriuresis. Reduced vascular resistance is a result of antagonistic activity directed at the rennin-angiotensin-aldosterone system.⁶ Elevated BNP concentrations are also seen in hypertension, tachycardia, cardiomyopathy, myocardial infarction and mitral and aortic stenosis.⁷ BNP is cleared from the circulation by enzymatic degradation via neutral endopeptidase and by receptor-mediated endocytosis.⁸

Clinical Utility

- ?? Detect asymptomatic CHF for earlier treatment and better patient outcomes⁹
- ?? Objectively assess heart failure severity - correlating with New York Heart Association classification (NYHA)⁹
- ?? Rule-out CHF with high negative predictive value in high-risk patients⁹
- ?? Monitor therapy and disease progression of LV dysfunction^{9,10}
- ?? Screen cardiac abnormalities regardless of etiology and degree of LV systolic dysfunction¹¹
- ?? Predict 30-day and 10-month mortality after AMI and stratify risk across the spectrum of Acute Coronary Syndrome independent of troponin and EKG changes⁵

Ordering Information & Specimen Requirements

Test Code	Test Name	Specimen Requirements
7533	BNP EvaluatR™	0.5 ml EDTA Plasma Frozen or EDTA Plasma Frozen in a PET (plastic) tube. Separate plasma and freeze within 4 hours of collection. Ship on dry ice by overnight courier.
7530	Pro-BNP DetectR™ for Congestive Heart Failure	1 (0.5) mL Serum Frozen or EDTA Plasma Frozen. Split specimen into 2 plastic tubes and ship frozen on dry ice.

References

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4. Yoshimura M, Yasue H, Morita E, et al. Hemodynamic, renal, and hormonal responses to brain natriuretic peptide infusion in patients with congestive heart failure. *Circulation* 1991;84:1581-8.
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8. Davidson NC, Naas AA, Hanson JK, et al. Comparison of atrial natriuretic peptide, b-type natriuretic peptide and N-terminal proatrial natriuretic peptide as indicators of left ventricular systolic dysfunction. *Am J Cardiol* 1996;77:828-31.
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11. Nakamura M, Endo H, Nasu M, et al. Value of plasma B type natriuretic peptide measurement for heart disease screening in a Japanese population. *Heart* 2002;87:131-5.

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