INTRODUCTION

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Chronic heart failure (left ventricular systolic dysfunction) affects many individuals and is associated with significant morbidity and mortality. Approximately 5 million Americans suffer from heart failure, with over 400,000 newly diagnosed each year.[1] Average mortality is 50% 5 years after diagnosis.[1] Due to high mortality and morbidity, vast resources are directed toward understanding and treating this syndrome. Our understanding has undergone an evolution, from a purely mechanical model to one in which a cascade of neurohormones, including norepinephrine and angiotensin II (ATII), play a significant role. And treatment has undergone a revolution. This symposium discusses our knowledge of the pathophysiology and treatment of chronic systolic heart failure and how they have changed over the years.

As with most symposia, this one begins with a brief overview of pathophysiology. Knowledge in this area has grown dramatically over the last 50–60 years. In the 1980s norepinephrine and ATII were realized to be significant contributors to the syndrome. Today, our understanding goes beyond these two neurohormones and includes not only other neurohormones such as aldosterone and endothelin, but also cytokines.

The neurohormones at which drug therapy has been directed are produced by the sympathetic nervous system (norepinephrine) and the renin-angiotensin-aldosterone system (ATII, aldosterone). Two articles discuss the role of antagonists to both these systems. Mark A. Munger addresses the role of β-adrenergic receptor antagonists, and Jo Ellen Rodgers and J. Herbert Patterson evaluate the role of angiotensin-converting enzyme (ACE) inhibitors, ATII receptor antagonists, and aldosterone antagonists.

Not long ago standard therapy of heart failure consisted of an ACE-inhibitor, diuretic, and/or digoxin. Today it consists of not only these three agents but also β-adrenergic receptor antagonists and aldosterone antagonists (Table 1).[2] In addition, the role of ATII receptor antagonists has been established. These new therapies reduce mortality in patients already receiving an ACE inhibitor and even may begin to reverse the pathophysiologic consequences of the disease. Reversing heart failure was barely considered a possibility a few years ago, but as Dr. Munger elaborates, it may be a reality.

Drug therapy for this syndrome has undergone many changes, due mostly to a number of randomized, placebo-controlled trials; in other words, evidenced-based medicine. The Heart Failure Society of America published guidelines to synthesize these numerous trials and help incorporate their data.[2] To put these guidelines into perspective, Kirkwood F. Adams, Jr., reviews their background and rationale. In addition he highlights recommendations for therapy with drugs that antagonize the sympathetic and renin-angiotensin-aldosterone systems. We are fortunate to have Dr. Adams participate in this symposium, as he was chair of the committee that developed the guidelines.

The final article deals with a topic that is not usually discussed in these types of symposia: how to manage multiple-drug therapy in patients with chronic heart failure who often have comorbidities such as diabetes mellitus, arthritis, and coronary artery disease. Wendy A. Gattis presents practical issues with regard to starting and managing several drugs in these complicated patients.

It is our hope that this symposium will provide useful information that will allow the practitioner to put into practice current treatment guidelines for chronic systolic heart failure. This includes understanding the rationale and evidence for the guidelines and how to prescribe drug therapy in a

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Table 1. The Revolution in Drug Therapy for Chronic Heart Failure

Disease Severity	~1997	Today
Asymptomatic (NYHA I)	ACE	ACE + BB
Symptomatic (NYHA II)	Diuretic + ACE ± digoxin	ACE + diuretic + BB ± digoxin
Symptomatic, history of dyspnea at rest (NYHA III)	Diuretic + ACE + digoxin	Diuretic + ACE + BB + digoxin + spiro
Symptomatic, dyspnea at rest (NYHA IV)	Diuretic + ACE + digoxin	Diuretic + ACE + spiro + digoxin

NYHA = New York Heart Association; ACE = angiotensin-converting enzyme inhibitor; BB = β-adrenergic receptor antagonist; spiro = spironolactone (aldosterone antagonist).

very difficult patient population. Appropriate drug therapy for all patients with asymptomatic, mild to moderate, and severely symptomatic left ventricular systolic dysfunction is essential if we hope to reduce the mortality and morbidity associated with the syndrome.

References

1. American Heart Association. 2000 heart and stroke statistical update. Available from: http://americanheart.org.
2. Heart Failure Society of America. Guidelines for management of patients with heart failure caused by left ventricular systolic dysfunction—pharmacological approaches. J Cardiac Failure 1999;5:357–82.