Hypertension
New and Future Challenges

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KEYWORDS

• Hypertension • Cardiac failure • Systolic function • Cardiovascular

KEY POINTS

- This article provides a preview to the articles in this issue, which are written by well-known and authoritative authors for the readers' pleasure and reference.
- This article hopes to provide a general overview that stimulate interests, better understanding, and continued joint commitment to the important subject of hypertension.

Most general textbooks of medicine generally lack any discussion of cardiac failure dealing with preserved systolic function (ie, diastolic dysfunction). This subject, however, is among the most frequent causes of hospitalization of patients in the United States and other industrialized nations. It is frequently encountered among women, more frequently in the elderly of both genders, is common among patients with hypertension, and is currently included in most cardiovascular teaching programs. It is especially included in this hypertension issue, specifically to emphasize for hypertensionologists that impaired diastolic function occurs commonly in patients with hypertension, in particular those with left ventricular hypertrophy, frequently those with left bundle branch block, and those with a left ventricular ejection rate of less than 30 mL/s to 40 mL/s (see Wilson Nadruz Junior and colleagues' article, "Diastolic Dysfunction and Hypertension," in this issue). These patients have been shown to merit particular attention for ventricular pacing and careful follow-up.

This article presents an introduction to each article in this issue of the *Medical Clinics of North America* (*MCNA*), providing reflections and overview of the present and an inkling of the newer developments for the field of hypertension. To begin, "Diastolic Dysfunction and Hypertension" is discussed by Wilson Nadruz Junior and Amil M. Shah of the Cardiovascular Division, Brigham and Women's Hospital (Boston), and Dr Scott D. Solomon, Professor of Medicine and honoree of The Edward D. Frohlich Cardiovascular Pathophysiology Chair. It emphasizes that exceedingly common cardiac problem that is not usually included in discussions concerning impaired cardiac function, predisposing hypertensive patients to subsequent left ventricular failure.

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Dr Marc A. Pfeffer of Brigham and Women's Hospital begins with his overview of old and new challenges involving therapeutic trials dealing with cardiac failure. It was his large survival and vascular enlargement (SAVE) multicenter trial in which he and his colleagues first identified those patients who, after myocardial infarction, were treated with the first renin-angiotensin inhibiting agent in that classic study (see Marc A. Pfeffer's article, "Heart Failure and Hypertension: Importance of Prevention," in this issue). Of special interest, this class of antihypertensive agents was initially considered for patients with left ventricular failure. Fortunately, modern cardiovascular medicine considers these drugs among those generally considered to be included among the major agents for use in the treatment of left ventricular failure.

In his article, dealing with heart failure from hypertension and its prevention with his supporting selected references, Dr Pfeffer details the exciting history of the tremendous number of well-designed clinical studies that carefully document the efficacy of antihypertensive therapy in preventing morbidity and mortality from cardiac failure (see Marc A. Pfeffer's article, "Heart Failure and Hypertension: Importance of Prevention," in this issue). I believe that no one would doubt that the Veterans Administration (VA) Cooperative Study Group reported the first controlled, double-blinded, multicenter series of studies conceived, conducted, and directed by Dr Edward D. Freis. This series of VA studies first demonstrated the efficacy of antihypertensive therapy and its significant reduction in mortality from cardiac failure. Thereafter, as outlined by Dr Pfeffer, over the remainder of the twentieth century and into the twenty-first century, the many well-conceived and well-conducted studies confirmed and extended the necessary details (see Marc A. Pfeffer's article, "Heart Failure and Hypertension: Importance of Prevention," in this issue). Their key features should be credited to Dr Freis, his colleagues, the initial centers, the volunteer patients, and the VA Cooperative Study.

Dr Francis G. Dunn (Honorary Professor in Cardiovascular Sciences at the University of Glasgow) and his colleague Dr Tony Stanton (Consultant Cardiologist at the School of Medicine, Nambour Hospital, Nambour, Australia) discuss the frequent coexistence of ischemic coronary vascular disease and hypertension (see Tony Stanton and Francis G. Dunn's article, "Hypertension, Left Ventricular Hypertrophy, and Myocardial Ischemia," in this issue). This cardiac problem frequently affects the coronary circulation in patients with arteriolar constriction throughout resistance vessels of both ventricles and is also commonly associated with occlusive atherosclerosis of the larger coronary arteries. Drs Dunn and Stanton, in their lucid presentation, also include a clear discussion of ischemic cardiac changes that are complexly related to both hemodynamic and nonhemodynamic complications of myocardial fibrosis, arterial stiffness, endothelial dysfunction, and extracellular inflammation. These considerations are discussed carefully with respect to the wide variety of diagnostic procedures that are available for the clinical assessment and management of the hypertensive patient (see Tony Stanton and Francis G. Dunn's article, "Hypertension, Left Ventricular Hypertrophy, and Myocardial Ischemia," in this issue). This scholarly work from Glasgow has been recognized by the medical community provides evidence of Dr Dunn's recent leadership and his appointment as President of the Royal College of Physicians and Surgeons of Glasgow.

María U. Moreno and colleagues' article, "The Hypertensive Myocardium: from Microscopic Lesions to Clinical Complications and Outcomes," in this issue focuses on the microscopic myocardial lesions in hypertensive heart disease and its clinical outcomes. For far too long, clinicians have considered that coronary vascular disease complicating hypertension is the major complication of atherosclerotic coronary arterial occlusive disease. In recent years, however, the cardiac changes that involve the