

## Preface

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This book is a comprehensive overview of heart failure and the only curative therapy for this disease, heart transplantation. Since heart failure is so prevalent in our society and has such a profound impact in our healthcare system, we have targeted a diverse audience ranging from the student to the clinical trainee as well as the research investigator and the practicing clinical expert. As the title and table of contents outline, a unique feature of this book is its breadth. The intent is to produce a single book that comprehensively examines the field of heart failure and the therapeutic strategies, including cardiac transplantation, that would be of interest to the molecular biologist, the pathologist, the practicing clinician, the radiologist, and the surgeon.

Introductory chapters are provided as a platform for the depth of the subsequent chapters. Chapter 1, which presents an extensive historical perspective, provides a unique beginning to the book. Subsequent chapters in Part I explore the basic concepts in the physiology, molecular biology, pathology, and epidemiology of the normal and failing heart and also highlight emerging research discoveries that are having a significant impact on the field. Part II addresses the known causes of heart failure, such as right heart failure, valvular cardiomyopathy, molecular mechanisms of sarcomeric cardiomyopathies, and neuromuscular cardiomyopathy. These chapters serve as an outstanding resource for the practicing clinician and the research investigator. In Part III, the progression of heart failure is outlined, with chapters devoted to cardiorenal syndrome, neurohormonal activation, remodeling, and arrhythmias in cardiomyopathy. Advanced therapies for the heart failure patient are discussed in Part IV, including cardiac resynchronization, ventricular assist devices, and cellular strategies for structural and hemodynamic improvement of the failing heart. An area of intense interest is the field of regenerative medicine and

Chap. 23 highlights the state-of-the-art research strategies and their potential clinical impact for this field. Part V addresses the field of cardiac transplantation. These chapters detail the rich history of surgical, immunobiological, and therapeutic discoveries that are the signature for this field and target the clinical management of the heart transplant recipient. Topics include the cardiac transplant procedure, the early and late management of the post-transplant patient, allograft rejection, heart-lung transplantation, and xenotransplantation.

A unique feature of this compendium is the authors' expertise and national and international reputations. Many of the authors direct research programs focused on heart failure and cardiac transplantation and these initiatives complement their outstanding clinical expertise in the field. They have further distinguished themselves as founders or leaders of institutes, cardiovascular programs, pulmonary hypertension programs, neuromuscular programs, physiology departments, robotic surgical and transplant programs, adult congenital heart programs, structural heart disease programs, regenerative medicine programs, and start-up cardiovascular companies. The expertise of the authors and the comprehensive nature of this book serve as an important resource both for the practicing clinician in her/his daily practice and for trainees and research investigators. Importantly, it is the editors' hope that this scholarly effort inspires the next generation to pursue innovations and discoveries that will bend the path of heart failure and cardiac transplantation and lead to cures for these diseases.

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