

## **Preface and Perspective**

Cardiovascular disease, including stroke, is the leading cause of illness and death in Japan. In the past couple decades, considerable effort has been made to prolong survival and improve the quality of life of patients with cardiovascular diseases, and epidemiologic studies and randomized clinical trials have provided compelling evidence that coronary heart disease is largely preventable. However, despite innovations in technology and pharmacology, cures are basically not available, partly because of poor understanding of the basic mechanisms responsible for these diseases.

Information about the pathophysiology underlying cardiovascular diseases had not been available until the recent advances in molecular genetics revealing the genetic defects in some monogenic diseases, such as cardiomyopathy and congenital arrhythmias. With regard to complex traits in more common cardiovascular diseases, current research is focusing on the pathogenesis by integrating many technological advances from basic cardiology including molecular biology and genetics to clinical cardiology. These approaches are expected to provide tools to elucidate the fundamental mechanisms of cardiovascular diseases, opening new possibilities not only for improved therapeutic and diagnostic measures but also for prevention.

In this book, I will review the recent progress in research works in our department in many aspects of cardiovascular diseases partly based on publications from our department. I would like to thank all the authors and the collaborators. I am also grateful to Hokkaido University Graduate School of Medicine for providing me with the opportunity to publish this review.

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