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(Eds.)

Regulation of Coronary Blood Flow

With 149 Illustrations

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On the frontcover: Scanning electron micrographs of polycarbonate filters through which 1:5 diluted whole blood has been passed for 30s after the addition of 2 nM PAF. *See* p. 174.

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Preface

The importance of the physiology and pathophysiology of coronary circulation has been increasing over the last eighty years since Dr. James Herrick first described in 1912 the fact that acute myocardial infarction is attributed to the obstruction of the coronary arteries. Although extensive research has been done to prevent coronary arterial disease, the death rate due to heart disease is still high: 35% of total deaths in the United States, and 20% in Japan. In recent decades, cardiovascular researchers have mainly focused their efforts on the physiology of coronary circulation, and extensive and elegant physiological studies have been accomplished in animals. Recent progress in biochemistry is opening up new fields, with research focusing on the novel substances involved in the regulation of coronary circulation, the roles of endothelial cells and interactions between the circulating blood cells. In the last decade, cardiovascular researchers seem to have moved from the mechanical to humoral regulation of coronary blood flow. Another big impact is technical progress in clinical intervention for reperfusion and angioplasty in ischemic heart disease, including PTCR and PTCA.

We have had the timely opportunity to hold the Satellite Symposium of the 4th International Symposium on Adenosine and Adenine Nucleotides in Kobe in 1990, focusing on "Regulation of Coronary Blood Flow." R.M. Berne of Virginia University summarized the role of adenosine in regulation of coronary blood flow, and E.O. Feigl of Washington University overviewed neural control, in their special lectures. This book is based upon the fruitful outcome of this meeting, as the proceedings of the symposium. The volumes are divided into six parts. Part 1 focuses on methods of measuring coronary blood flow. Part 2 deals with basic neural control mechanisms of coronary blood flow. Recently, the contribution of endothelial cells in coronary flow regulation is found to be important. Part 3 emphasizes the roles of endothelial cellular functions. Part 4 centers on metabolic controls of coronary blood flow. Parts 5 and 6 consider the consequences due to abnormalities in coronary circulation. Although they do not cover the whole spectra of the physiological and pathophysiological states, I believe this volume provides readers with a unique aspect of the regulatory mechanisms of coronary blood flow.

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Michitoshi Inoue
for Editors

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