Biochemical and Neuroendocrine Aspects of Hypertension

The Annual Meeting of the Council for High Blood Pressure Research provides a forum for the presentation of current basic research in the field of hypertension. The search for mechanisms that control arterial blood pressure has been ever-widening, and this year’s presentations reflect the broad multidisciplinary efforts being brought to bear on this complex medical problem. The nonuniform spectrum of disorders that are apparent in so-called “essential” hypertension make it necessary to focus on only a few selected areas of research at each meeting. This year’s meeting held in Cleveland, Ohio, on October 21-22, 1982, focused principally on the biochemical and endocrine aspects of hypertension.

The contributions of molecular biology to the field of hypertension are reflected in the Arthur C. Corcoran Lecture by Dr. Pierre Corvol. Dr. Corvol presented elegant new studies summarized herein, describing the molecular cloning of mouse submaxillary renin cDNA, which allowed the determination of the amino acid sequence of the renin precursor. The complete amino acid sequence of mouse submaxillary gland preprorenin and a model for its maturation into prorenin and the active form of renin were presented. Two invited State-of-the-Art lectures are also published in this special issue of Hypertension, which focus on two areas of research under intense investigation. Dr. Benjamin Zweifach reviewed the state of the microcirculation in hypertension, while Dr. Sami Said reviewed the influence of vasoactive peptides on cardiovascular function and arterial blood pressure.

A number of original studies dealing with various biochemical and hormonal aspects of arterial pressure regulation were also presented. One group of studies deals with various aspects of mineralocorticoid alterations in hypertension, ranging from mechanisms controlling their secretion to the relevance of various metabolites on arterial pressure regulation. A second group of studies reflects the current interest in the role of calcium in the control of vascular smooth muscle tone. A third group of studies focuses on various factors that can influence the sodium-potassium pump in vascular smooth muscle. The remaining studies deal with various neural and humoral factors that are thought to be of importance in hypertension. In addition to the renin-angiotensin-aldosterone system, these include the areas of vasopressin, the kallikrein-kinin system, and renal medullary lipids.

This Supplement to Hypertension is designed to communicate rapidly the new, significant developments presented at the Annual Scientific Sessions of the Council. We are indebted to the efforts of the Publications Committee for the expeditious handling of the manuscripts reviewed for this monograph. By utilizing rapid mailing and telephone communications between the Publications Committee members and the individual reviewers and authors, evaluation and revision of the manuscripts were completed within 45 days of the Council meeting. This was accomplished without
compromising the usual peer review process employed in the regular issues of Hypertension, with two reviewers for every manuscript and a third opinion when necessary. This rapid publication was only possible through the cooperation of the many reviewers who responded with exceptional speed to provide us with thoughtful, thorough evaluations of the manuscripts that were submitted. Because of the time schedule, those manuscripts requiring major revisions or additional experiments prior to publication could not be included.

The effective communication between authors, reviewers, and editorial staff was possible only by the special effort given to this task by Jerre Myers, Assistant Editor of Hypertension, working closely with Mary Jane Kerig of my office and Elaine Babcock, Technical Editor, of Babcock Communications. A special acknowledgement goes to Dr. Harriet Dustan who raised the funds for the publication of this issue of Hypertension through educational grants from a variety of pharmaceutical corporations. These grants are acknowledged on the Title Page.

It has been my privilege to again serve as a Guest Editor of Hypertension. I wish to thank my colleagues on the Publications Committee: Drs. Edward Biglieri, Stevo Julius, Myron Weinberger, and Jean Sealey for their editorial assistance. I also wish to acknowledge Dr. Suzanne Oparil for her assistance with this publication.

Allen W. Cowley, Jr., Ph.D.
Guest Editor

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