Nutrition and Kidney Disease: A New Era
Contributions to Nephrology

Vol. 155

Series Editor

Claudio Ronco  Vicenza
Nutrition and Kidney Disease: A New Era

Volume Editors

Hiromichi Suzuki  Saitama
Paul L. Kimmel  Washington, D.C.

26 figures, 4 in color, and 24 tables, 2007
Contributions to Nephrology
(Founded 1975 by Geoffrey M. Berlyne)

Hiromichi Suzuki
Department of Nephrology, School of Medicine
Faculty of Medicine, Saitama Medical University
38 Morohongo, Moroyama, Iruma
Saitama 350-0495 (Japan)

Paul L. Kimmel
Professor of Medicine
George Washington University
School of Medicine
Washington, DC 20037 (USA)

Library of Congress Cataloging-in-Publication Data
Nutrition and kidney disease : a new era / volume editors, Hiromichi Suzuki,
Paul L. Kimmel.
p. ; cm. – (Contributions to nephrology, ISSN 0302-5144 ; v. 155)
Includes bibliographical references and index.
CO778UN v.155 2007 / WJ 300 N9753 2007]
616.6'10654–dc22
2006100119

Bibliographic Indices. This publication is listed in bibliographic services, including Current Contents® and
Index Medicus.

Disclaimer. The statements, options and data contained in this publication are solely those of the individual
authors and contributors and not of the publisher and the editor(s). The appearance of advertisements in the
book is not a warranty, endorsement, or approval of the products or services advertised or of their effectiveness,
quality or safety. The publisher and the editor(s) disclaim responsibility for any injury to persons or property
resulting from any ideas, methods, instructions or products referred to in the content or advertisements.

Drug Dosage. The authors and the publisher have exerted every effort to ensure that drug selection and
dosage set forth in this text are in accord with current recommendations and practice at the time of publication.
However, in view of ongoing research, changes in government regulations, and the constant flow of information
relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for
any change in indications and dosage and for added warnings and precautions. This is particularly important when
the recommended agent is a new and/or infrequently employed drug.

All rights reserved. No part of this publication may be translated into other languages, reproduced or
utilized in any form or by any means electronic or mechanical, including photocopying, recording, microcopying,
or by any information storage and retrieval system, without permission in writing from the publisher.

© Copyright 2007 by S. Karger AG, P.O. Box, CH–4009 Basel (Switzerland)
www.karger.com
Printed in Switzerland on acid-free paper by Reinhardt Druck, Basel
ISSN 0302–5144
Contents

VII Preface

1 Nutritional Status, Psychological Issues and Survival in Hemodialysis Patients

18 Body Protein Index Based on Bioelectrical Impedance Analysis Is a Useful New Marker Assessing Nutritional Status: Applications to Patients with Chronic Renal Failure on Maintenance Dialysis

29 Nutritional Assessment by a New Method for Patients with Renal Disease
Kanno, Y. (Saitama); Sasaki, S. (Tokyo); Suzuki, H. (Saitama)

40 Protein Intake of More than 0.5g/kg BW/Day Is not Effective in Suppressing the Progression of Chronic Renal Failure
Ideura, T.; Shimazui, M.; Morita, H.; Yoshimura, A. (Yokohama City)

50 Diet Therapy in Diabetic Nephropathy
Maeda, Y.; Shiigai, T. (Ibaraki)

59 Nutritional Therapy for Patients Undergoing Hemodialysis
Kumagai, H. (Shizuoka)
72  **Diet Therapy in Patients Receiving Peritoneal Dialysis**  
Kanno, Y. (Saitama)

82  **Diet Therapy after Kidney Transplantation**  
A Comparative Debate between Japan and Western Countries  
Nishi, S.; Gejyo, F.; Saito, K.; Nakagawa, Y.; Takahashi, K. (Niigata City)

90  **Sodium and Kidney Disease**  
Suzuki, H.; Takenaka, T.; Kanno, Y.; Ohno, Y. (Saitama); Saruta, T. (Tokyo)

102  **Dietary Protein Intake and Kidney Disease in Western Diet**  
Pecoits-Filho, R. (Curitiba)

113  **Phosphate Restriction in Diet Therapy**  
Taketani, Y. (Tokushima)

125  **Salt and Excess Food Intake Produced Diabetic Nephropathy in Japan**  
Takane, H.; Kanno, Y.; Ohno, Y.; Sugahara, S.; Suzuki, H. (Saitama)

136  **Author Index**

137  **Subject Index**
Over the last decade, it has become clear that lowering blood pressure with renin-angiotensin inhibitors has become one of the sophisticated maneuvers for preventing progression of renal dysfunction in patients with chronic kidney disease (CKD). It is also however well-known that the daily diet plays an important role in the preservation and integrity of renal function in patients with CKD. However, there is currently controversy and confusion regarding the correct dietary prescription for individual CKD patients, in part because the Modification of Diet in Renal Disease (MDRD) study may be interpreted as showing that a low-protein diet does not have a major effect on the course of renal dysfunction. In addition, there is limited information regarding optimal diets for patients with different kidney diseases at different stages of disease.

To resolve this dilemma, researchers are developing frameworks for an appropriate dietary program which will significantly alter the understanding of the role of diet and, eventually, have important implications for the practice of nephrology. This publication provides an update on both laboratory and clinical research, including nutritional status and its assessment, and nutritional therapy in various CKD settings. It is the result of work by an international group of authors from three continents. The individual chapters examine the role of sodium, protein and phosphate in the diet, and concern patients with diabetic nephropathy, patients with CKD at early stages as well as those treated with hemodialysis, peritoneal dialysis and transplantation. Formats range from traditional reviews to up-to-the-minute research reports.

Part of a long-standing and continuing effort to improve patient outcomes, this book provides both a fundamental understanding of dietary therapies as
well as practical and up-to-date summaries of current knowledge and technology. It will therefore be a helpful tool for clinicians working with patients with CKD.

We deeply appreciate the contributions of all the authors. We acknowledge that the wisdom is theirs and the mistakes are our own. Obviously, much work still needs to be done, and one of the goals of this book is to stimulate further research in this area, in which so many sub-disciplines of medical science are involved.

We wish to express our appreciation to our many associates and colleagues, who, in their particular fields, have helped us with constructive criticism and helpful suggestions. This book could not have been produced without the dedicated help of our co-workers in the editorial offices of all the contributors. Finally, we continue to be indebted to the staff of Karger Publishers.

We dedicate this book to our patients and the clinicians who care for them.

Hiromichi Suzuki
Paul L. Kimmel