New Insights into Glomerulonephritis

Pathogenesis and Treatment.

Bearbeitet von
N. Chen, C. Ronco

ISBN 978 3 318 02389 3
Gewicht: 700 g
New Insights into Glomerulonephritis
New Insights into Glomerulonephritis
Pathogenesis and Treatment

Volume Editor

Nan Chen  Shanghai

29 figures, 13 in color, and 26 tables, 2013
Contributions to Nephrology
(Founded 1975 by Geoffrey M. Berlyne)

Prof. Nan Chen, MD
Department of Nephrology,
Ruijin Hospital, School of Medicine
Shanghai Jiao Tong University
No. 197 Ruijin Er Road
Shanghai 200025
PR China

Library of Congress Cataloging-in-Publication Data

New insights into glomerulonephritis : pathogenesis and treatment / volume editor, Nan Chen.
   p. ; cm. -- (Contributions to nephrology, ISSN 0302-5144 ; v. 181)
   Includes bibliographical references and index.
   (e-ISBN)
   I. Chen, Nan, 1948- II. Series: Contributions to nephrology ; v. 181.
   0302-5144
   W1 CO778UN v. 181 2013 / WJ 353]
   RC918.G55
   616.6'12--dc23
   2013008448

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

Disclaimer. The statements, opinions 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 2013 by S. Karger AG, P.O. Box, CH–4009 Basel (Switzerland)
www.karger.com
Printed in Germany on acid-free and non-aging paper (ISO 9706) by Bosch Druck, Ergolding
ISSN 0302–5144
e-ISSN 1662–2782
e-ISSN 978–3–318–02390–9
Contents

IX Preface
Chen, N. (Shanghai)

Overview

1 Primary Glomerulonephritis in Mainland China: An Overview
Xie, J.; Chen, N. (Shanghai)

12 Advances in the Pathology of Glomerular Diseases
Weening, J.J. (Hilversum); Ronco, P. (Paris); Remuzzi, G. (Bergamo)

22 Changing Spectrum of Biopsy-Proven Primary Glomerular Diseases over the Past 15 Years: A Single-Center Study in China

31 Evaluation of Anemia and Serum iPTH, Calcium, and Phosphorus in Patients with Primary Glomerulonephritis
Li, Y.; Zhang, W.; Ren, H.; Wang, W.; Shi, H.; Li, X.; Chen, X.; Shen, P.; Wu, X.; Xie, J.; Chen, N. (Shanghai)

IgA Nephropathy

41 Role of Podocyte Injury in IgA Nephropathy
Menon, M.C.; Chuang, P.Y.; He, J.C. (New York, N.Y.)

52 Genetic Studies of IgA Nephropathy: What Have We Learned from Genome-Wide Association Studies
Xie, J. (Shanghai); Shapiro, S.; Gharavi, A. (New York, N.Y.)

65 Immunopathological Predictors of Prognosis in IgA Nephropathy
Tomino, Y. (Tokyo)

75 Treatment of Progressive IgA Nephropathy: An Update
Wang, W.; Chen, N. (Shanghai)
Focal Segmental Glomerulosclerosis/Minimal Change Disease

84 Different Targets for Treating Focal Segmental Glomerular Sclerosis
Coppo, R. (Turin)

91 Screening of ACTN4 and TRPC6 Mutations in a Chinese Cohort of Patients with Adult-Onset Familial Focal Segmental Glomerulosclerosis
Zhang, Q.; Ma, J.; Xie, J.; Wang, Z.; Zhu, B.; Hao, X.; Yang, L.; Ren, H.; Chen, N. (Shanghai)

101 Increased Risk of Treatment Failure and End-Stage Renal Disease in Familial Focal Segmental Glomerular Sclerosis
Hao, X.; Xie, J.; Ma, J.; Wang, Z.; Zhou, Q.; Yang, L.; Pan, X.; Ren, H.; Chen, N. (Shanghai)

109 Treatment and Prognosis of Primary Focal Segmental Glomerulosclerosis
Ren, H.; Shen, P.; Li, X.; Pan, X.; Zhang, Q.; Feng, X.; Zhang, W.; Chen, N. (Shanghai)

119 New Insights into Treatment of Nephrotic Syndrome in Children
Wang, X.; Xu, H. (Shanghai)

Membranous Nephropathy

131 Pathogenesis of Membranous Nephropathy: A New Paradigm in Evolution
Glassock, R.J. (Laguna Niguel, Calif.)

143 Short-Term Complications of Membranous Nephropathy
Barbour, S. (Vancouver, B.C.); Reich, H.; Cattran, D. (Toronto, Ont.)

152 Tacrolimus Combined with Corticosteroids in Idiopathic Membranous Nephropathy: A Randomized, Prospective, Controlled Trial
Xu, J.; Zhang, W.; Xu, Y.; Shen, P.; Ren, H.; Wang, W.; Li, X.; Pan, X.; Chen, N. (Shanghai)

Membranoproliferative Glomerulonephritis

163 Membranoproliferative Glomerulonephritis – Mechanisms and Treatment
Appel, G.B. (New York, N.Y.)

175 Re-Evaluation of the Classification System for Membranoproliferative Glomerulonephritis
Lu, Y.; Shen, P.; Li, X.; Xu, Y.; Pan, X.; Wang, W.; Chen, X.; Zhang, W.; Ren, H.; Chen, N. (Shanghai)

185 C3 Glomerulopathy

194 Hepatitis C Virus-Associated Glomerulonephritis
Tang, S.C.W.; Lai, K.N. (Hong Kong SAR)
207 Pathogenesis of Rapidly Progressive Glomerulonephritis: What Do We Learn?
Chen, Y.-X.; Chen, N. (Shanghai)

216 ANCA-Associated Renal Vasculitis — An Update
Tesar, V.; Hruskova, Z. (Prague)

229 Management of Crescentic Glomerulonephritis: What Are the Recent Advances?
Li, X.; Chen, N. (Shanghai)

240 Plasma Exchange in the Treatment of Rapidly Progressive Glomerulonephritis
Chen, X.; Chen, N. (Shanghai)

248 Author Index
249 Subject Index
Preface

Chronic kidney disease (CKD) is a major health issue not only in China but also in other parts of the world. Approximately 10% of the global population has CKD and the progression of the disease will lead to end-stage renal disease (ESRD) – a devastating condition requiring costly renal replacement therapy. Given this background, extensive understanding of the pathogenesis of the disease and exploring novel therapeutical targets will help us to alleviate the disease progression, improve prognosis and reduce its impact on the global economic burden.

Currently, primary glomerulonephritis is the leading cause of CKD and ESRD in China whilst in Western countries it is diabetic nephropathy and hypertensive nephropathy. Much progress regarding pathogenesis as well as treatment of primary glomerulonephritis has been achieved recently. As a result of active involvement in global nephrology, clinical data from Chinese studies on primary glomerulonephritis have significantly contributed to the making of international guidelines and histological classifications on glomerulonephritis such as the recently published *Kidney Disease: Improving Global Outcomes (KDIGO) Guidelines on Glomerulonephritis* and *Oxford Classification of IgA Nephropathy*. As not many books have been specifically published on primary glomerulonephritis, we decided to further research this topic.

As readers approach this book they will immediately find it is different from the classic textbooks which contain comprehensive information on every aspect of nephrology. It focuses on the cutting-edge knowledge and delivers up-to-date information on primary glomerulonephritis: in the **Overview** chapter, the epidemiological data of primary glomerulonephritis, changing spectrum of biopsy-proven primary glomerulonephritis in China and pathological advances of glomerulonephritis are reviewed and discussed; in the chapter on **IgA Nephropathy**, state-of-the-art renal science regarding the update of the genetic basis of the disease, role of podocytes injury, treatment advances and prognosis predictors are well presented; in the chapters on **Focal Segmental Glomerulosclerosis/...**
Minimal Change Disease and Membranous Nephropathy, recent clinical evidence of treatment as well as new insights of pathogenesis are introduced; in the chapter on Crescentic Glomerulonephritis, evidence from recent clinical trials as well as promising data from animal models are revisited and bench-to-bedside knowledge is shared; in the chapter on Membranoproliferative Glomerulonephritis, two types of membranoproliferative glomerulonephritis are introduced and its classification is re-evaluated, and there are many others from which I am confident readers will find the intellectual and practical value of this book.

Being the editor of this edition of Contributions to Nephrology, there are so many people that I want to thank for their efforts in producing this project. I am particularly indebted to our renowned and devoted authors whose contributions constitute the essence of this project. All the authors have done a superb job by utilizing vast amounts of data and ensuring the accuracy of the information they provide. This book could not have been accomplished without the extraordinary efforts by the staff of S. Karger AG.

‘The road ahead is afar, and I will search long and hard’ – this is an ancient Chinese proverb that addresses the difficulty and persistency in our pursuing the knowledge to understand our world and improve human health. However, I do believe a useful book will help us to keep pace with this ever-changing and rapidly growing world of science. I hope the perspective from a team of well-respected global contributors as well as our local prominent nephrologists will keep readers at the forefront of nephrology. May this book serve as a bridge to connect Chinese nephrology to the world and may the knowledge introduced contribute to improve the outcome of patients with primary glomerulonephritis to the maximum extent possible.

Nan Chen, MD
Department of Nephrology, Ruijin Hospital
School of Medicine, Shanghai Jiao Tong University
Shanghai, PR China