Editorials

1624 Opening Pandora’s Box in the Tight Junction
Daniel F. Balkovetz
→ See related article by Feldman et al. on pages 1662–1671.

1626 Developmental Hypertension, Nephrogenesis, and Mother’s Milk: Programming the Neonate
Susan P. Bagby
→ See related article by Wlodek et al. on pages 1688–1696.

1630 More on Renal Disease Progression: Is Interstitial Inflammation Truly Protective?
Norberto Perico, Mauro Abbate, and Giuseppe Remuzzi

1633 Is Proteinuria Reduction by Angiotensin-Converting Enzyme Inhibition Enough to Prove Its Role in Renal Protection in IgA Nephropathy?
Daniel C. Cattran
→ See related article by Coppo et al. on pages 1880–1888.

1635 Renal Replacement Therapy in the Developing World: Are We on the Right Track, or Should There Be a New Paradigm?
Ricardo Correa-Rotter
→ See related article by Garcia-Garcia et al. on pages 1922–1927.

Review

1637 How Fibroblast Growth Factor 23 Works
Shiguang Liu and L. Darryl Quarles

Special Feature

1648 JASN Moves On
William G. Couser, Carol Hill, and Allison A. Eddy

Basic Science Articles

Cell and Transport Physiology

1652 Acute Regulation of the Epithelial Na⁺ Channel by Phosphatidylinositol 3-OH Kinase Signaling in Native Collecting Duct Principal Cells
Alexander Staruschenko, Oleh Pochynyuk, Alain Vandewalle, Vladislav Bugaj, and James D. Stockand

Maroon stars indicate articles that are featured in This Month’s Highlights.
For all articles highlighted in blue, access to UpToDate online is available for additional clinical information.
1662 ★ Role for TGF-β in Cyclosporine-Induced Modulation of Renal Epithelial Barrier Function
Gemma Feldman, Breda Kiely, Natalia Martin, Gavin Ryan, Tara McMorrow, and Michael P. Ryan
→ See related editorial by Balkovetz on pages 1624–1625.

1672 Increased Renal Responsiveness to Vasopressin and Enhanced V2 Receptor Signaling in RGS2−/− Mice
Annie Mercier Zuber, Dustin Singer, Josef M. Penninger, Bernard C. Rossier, and Dmitri Firsov

1679 Impairment of Sodium Balance in Mice Deficient in Renal Principal Cell Mineralocorticoid Receptor
Caroline Ronzaud, Johannes Loffing, Markus Bleich, Norbert Gretz, Hermann-Josef Gröne, Günther Schütz, and Stefan Berger

Genetics and Development
1688 ★ Normal Lactational Environment Restores Nephron Endowment and Prevents Hypertension after Placental Restriction in the Rat
Mary E. Włodek, Amy Mibus, Adeline Tan, Andrew L. Siebel, Julie A. Owens, and Karen M. Moritz
→ See related editorial by Bagby on pages 1626–1629.

1697 Crim1KST264/KST264 Mice Implicate Crim1 in the Regulation of Vascular Endothelial Growth Factor-A Activity during Glomerular Vascular Development
Lorine Wilkinson, Thierry Gilbert, Genevieve Kinna, Leah-Anne Ruta, David Pennisi, Michelle Kett, and Melissa H. Little

1709 Mouse Embryonic Stem Cell–Derived Embryoid Bodies Generate Progenitors That Integrate Long Term into Renal Proximal Tubules In Vivo
Cécile Vigneau, Katalin Polgar, Gary Striker, Justine Elliott, Deborah Hyink, Odile Weber, Hans-Joerg Fehling, Gordon Keller, Christopher Burrow, and Patricia Wilson

Basic Immunology and Pathology
1721 Inhibition of Toll-Like Receptor-7 (TLR-7) or TLR-7 plus TLR-9 Attenuates Glomerulonephritis and Lung Injury in Experimental Lupus
Rahul D. Pawar, Allam Ramanjaneyulu, Onkar P. Kulkarni, Maciej Lech, Stephan Segerer, and Hans-Joachim Anders

1732 Toll-Like Receptor 4 Ligation on Intrinsic Renal Cells Contributes to the Induction of Antibody-Mediated Glomerulonephritis via CXCL1 and CXCL2
Heather J. Brown, Helen R. Lock, Tim G.A.M. Wolfs, Wim A. Buurman, Steven H. Sacks, and Michael G. Robson

Pathophysiology of Renal Disease and Progression
1740 PKD1 Haploinsufficiency Causes a Syndrome of Inappropriate Antidiuresis in Mice
Ali K. Ahrabi, Sara Terryn, Giovanna Valentì, Nathalie Caron, Claudine Serradeil-Le Gal, Danielle Raufaste, Soren Nielsen, Shigeo Horie, Jean-Marc Verbavatz, and Olivier Devuyst

1754 Mesenchymal Stem Cells Prevent Progressive Experimental Renal Failure but Maldifferentiate into Glomerular Adipocytes
Uta Kunter, Song Rong, Peter Boor, Frank Etiner, Gerhard Müller-Newen, Zivka Djuric, Claudia R. van Roeyen, Andrzej Koniecny, Tammo Ostendorf, Luigi Villa, Maja Milovanceva-Popovska, Dontschko Kerjaschki, and Jürgen Floege

1765 Interstitial Vascular Rarefaction and Reduced VEGF-A Expression in Human Diabetic Nephropathy
Maja T. Lindenmeyer, Matthias Kretzler, Anissa Boucherot, Silvia Berra, Yoshinari Yasuda, Anna Henger, Felix Eichinger, Stefanie Gaiser, Holger Schmid, Maria P. Rastaldi, Robert W. Schrier, Detlef Schlöndorff, and Clemens D. Cohen

1777 Smad7 Gene Therapy Ameliorates an Autoimmune Crescentic Glomerulonephritis in Mice
Shuk-Man Ka, Xiao-Ru Huang, Hui-Yao Lan, Pei-Yi Tsai, Shun-Min Yang, Hao-Ai Shui, and Ann Chen

1789 Slowly Progressive, Angiotensin II–Independent Glomerulosclerosis in Human (Pro)renin Receptor–Transgenic Rats
Yuki Kaneshiro, Atsuhiro Ichihara, Mariyo Sakoda, Tomoko Takemitsu, A.H.M. Nurun Nabi, M. Nasir Uddin, Tsutomu Nakagawa, Akira Nishiyama, Fumiaki Suzuki, Tadashi Inagami, and Hiroshi Itoh
Combination Therapy with an Angiotensin-Converting Enzyme Inhibitor and a Vitamin D Analog Suppresses the Progression of Renal Insufficiency in Uremic Rats
Masahide Mizobuchi, Jeremiah Morrissey, Jane L. Finch, Daniel R. Martin, Helen Liapis, Tadao Akizawa, and Eduardo Slatopolsky

Evidence for the Role of Reactive Nitrogen Species in Polymicrobial Sepsis-Induced Renal Peritubular Capillary Dysfunction and Tubular Injury
Liping Wu, Neriman Gokden, and Philip R. Mayeux

Genes Expressed by Both Mesangial Cells and Bone Marrow–Derived Cells Underlie Genetic Susceptibility to Crescentic Glomerulonephritis in the Rat
Jennifer Smith, Ping-Chin Lai, Jacques Behmoaras, Candice Roufosse, Gurjeet Bhangal, John P McDaid, Timothy Altman, Frederick WK Tam, Charles D. Pusey, and H. Terence Cook

Chronic Kidney Disease
Abrogation of Protein Uptake through Megalin-Deficient Proximal Tubules Does Not Safeguard against Tubulointerstitial Injury
Franziska Theilig, Wilhelm Kriz, Timo Jerichow, Petra Schrade, Brunhilde Hähnlein, Thomas Willnow, Michel Le Hir, and Sebastian Bachmann

Basic Transplantation
Selective Binding and Presentation of CCL5 by Discrete Tissue Microenvironments during Renal Inflammation

Disease of the Month
Exercise in the End-Stage Renal Disease Population
Kirsten L. Johansen

Nephronophthisis-Associated Ciliopathies
Friedhelm Hildebrandt and Weibin Zhou

Clinical Science Articles
Clinical Nephrology
Lower Progression Rate of End-Stage Renal Disease in Patients with Peripheral Arterial Disease Using Statins or Angiotensin-Converting Enzyme Inhibitors
Harm H.H. Feringa, Stefanos E. Karagiannis, Michel Chonchol, Radosav Vidakovic, Peter G. Noordzij, Abdou Elhendy, Ron T. van Domburg, Gijs Welten, Olaf Schouten, Jeroen J. Bax, Tomas Berl, and Don Poldermans

IgACE: A Placebo-Controlled, Randomized Trial of Angiotensin-Converting Enzyme Inhibitors in Children and Young People with IgA Nephropathy and Moderate Proteinuria
Rosanna Coppo, Licia Peruzzi, Alessandro Amore, Antonio Piccoli, Pierre Cochat, Rosario Stone, Martin Kirschstein, and Tommy Linne; on behalf of the EC Biomed Concerted Action Project BMH4-97-2487(ID 12-SSMI) and IgACE European Collaborative Group
See related editorial by Catrion on pages 1633–1634.

Renoprotection of Optimal Antiproteinuric Doses (ROAD) Study: A Randomized Controlled Study of Benazepril and Losartan in Chronic Renal Insufficiency
Fan Fan Hou, Di Xie, Xun Zhang, Ping Yan Chen, Wei Ru Zhang, Min Liang, Zhi Jian Guo, and Jian Ping Jiang

A Randomized, Controlled Trial of Steroids and Cyclophosphamide in Adults with Nephrotic Syndrome Caused by Idiopathic Membranous Nephropathy
Vivekanand Jha, Anirban Ganguli, Tarun K. Saha, Harbir S. Kohli, Kamal Sud, Krishan L. Gupta, Kusum Joshi, and Vinay Sakhija

Human Genetics
Comprehensive Mutation Screening in 55 Probands with Type 1 Primary Hyperoxaluria Shows Feasibility of a Gene-Based Diagnosis
Carla G. Monico, Sandro Rossetti, Heidi A. Schwanz, Julie B. Olson, Patrick A. Lundquist, D. Brian Dawson, Peter C. Harris, and Dawn S. Milliner
A Common Variant of the PAX2 Gene Is Associated with Reduced Newborn Kidney Size
Jacklyn Quinlan, Mathieu Lemire, Thomas Hudson, Huili Qu, Alice Benjamin, Anne Roy, Elena Pascuet, Meigan Goodyer, Chandhana Raju, Zhao Zhang, Fiona Houghton, and Paul Goodyer

Epidemiology and Outcomes

Survival among Patients with Kidney Failure in Jalisco, Mexico
Guillermo García-García, Gregorio Briseño-Rentería, Victor H. Luquin-Arellano, Zhiwei Gao, John Gill, and Marcello Tonelli
See related editorial by Correa-Rotter on pages 1635–1636.

A Population-Based, Prospective Study of Blood Pressure and Risk for End-Stage Renal Disease in China
Kristi Reynolds, Dongfeng Gu, Paul Muntner, John W. Kusek, Jing Chen, Xigui Wu, Xiufang Duan, Chung-Shiuan Chen, Michael J. Klag, Paul K. Whelton, and Jiang He

Clinical Dialysis

Comparison of Survival of Upper Arm Arteriovenous Fistulas and Grafts after Failed Forearm Fistula
Timmy Lee, Jill Barker, and Michael Allon

Chronic Kidney Disease

Estimated Glomerular Filtration Rate and Urinary Albumin Excretion Are Independently Associated with Greater Arterial Stiffness: The Hoorn Study
Marc M.H. Hermans, Ronald Henry, Jacqueline M. Dekker, Jeroen P. Kooman, Piet J. Kostense, Giel Niijpels, Robert J. Heine, and Coen D.A. Stehouwer

Myocardial Ultrasound Tissue Characterization in Patients with Chronic Renal Failure
Massimo Salvetti, Maria Lorena Muiñes, Anna Paini, Cristina Monteduro, Bianca Bonzi, Gloria Gallbassini, Eugenia Belotti, Ezio Movilli, Giovanni Cancarini, and Enrico Agabiti-Roselli

Progression Risk, Urinary Protein Excretion, and Treatment Effects of Angiotensin-Converting Enzyme Inhibitors in Nondiabetic Kidney Disease
David M. Kent, Tazeen H. Jafar, Rodney A. Hayward, Hocine Tighiouart, Marcia Landa, Paul de Jong, Dick de Zeeuw, Giuseppe Remuzzi, Anne-Lise Kamper, and Andrew S. Levey; for the AIRPD Study Group

Carotid Intima Media Thickness Predicts Cardiovascular Diseases in Chinese Predialysis Patients with Chronic Kidney Disease
Cheuk-Chun Szeto, Kai-Ming Chow, Kam-Sang Woo, Ping Chook, Bonnie Ching-Ha Kwan, Chi-Bon Leung, and Philip Kam-Tao Li

Clinical Transplantation

Mycophenolate Mofetil versus Azathioprine for Prevention of Chronic Allograft Dysfunction in Renal Transplantation: The MYSS Follow-Up Randomized, Controlled Clinical Trial
Giuseppe Remuzzi, Paolo Cravedi, Marco Costantini, Mariadomenica Lesti, Maria Geneva, Giulia Gherardi, Bogdan Ene-Iordache, Eliana Gotti, Donato Donati, Maurizio Salvadori, Silvio Sandrini, Giuseppe Segoloni, Stefano Federico, Paolo Rigotti, Vito Sparacino, and Piero Ruggenenti; for the MYSS Follow-Up Study Group

Announcements

On the cover: The cover decorates the last issue of JASN developed by the current editorial team. The montage of illustrations depicts some of the most exciting opportunities in renal research, both basic and clinical, at this time of transition—all but two illustrated by articles selected from the current issue of the journal. Clockwise from top left: The paper by Hunter et al. (pages 1754–1764) illustrates intraglomerular localization of stem cells that reduced the severity of glomerulonephritis early (left) but differentiated into adipocytes later (right) associated with increased scarring, illustrating both the potential and the pitfalls of stem cells as therapeutic agents. The graph from the paper by Hou et al. (pages 1889–1898) shows the dramatic effect of reducing autoimmune glomerular injury by gene therapy with Smad7, illustrating one of many new approaches to reducing autoimmunity and glomerulonephritis as well as the potential of gene therapy in selected situations. At the bottom left, a kidney with nephronophthisis, an inherited ciliopathy, is from the review by Hildebrandt and Zhou (pages 1855–1871), which focuses on the need for better ways to characterize the phenotypic consequences of disease-causing genes and the potential for gene-targeted therapies.