

CJASN

Clinical Journal of the American Society of Nephrology

October 2017 • Vol. 12 • No. 10

Editorials

1559 Approaches to and Clinical Benefits of Reducing Dietary K in CKD

Jessica Kendrick and Stuart Linas
See related article on page 1569.

1561 Rethinking End Points in Clinical Trials of Renoprotective Medication

Aliza Thompson
See related article on page 1595.

1563 Contemporary Management of Hepatitis C in Patients with CKD

Richard J. Johnson and Michiko Shimada
See related article on page 1615.

1566 Thirty-Day Hospital Readmissions in the Hemodialysis Population: A Problem Well Put, But Half-Solved

Magdalene M. Assimon and Jennifer E. Flythe
See related article on page 1652.

Original Articles

Chronic Kidney Disease

1569 Randomized, Controlled Trial of the Effect of Dietary Potassium Restriction on Nerve Function in CKD

Ria Arnold, Timothy J. Pianta, Bruce A. Pussell, Adrienne Kirby, Kate O'Brien, Karen Sullivan, Margaret Holyday, Christine Cormack, Matthew C. Kiernan, and Arun V. Krishnan
See related editorial on page 1559.

1578 Marijuana Use and Estimated Glomerular Filtration Rate in Young Adults

Julie H. Ishida, Reto Auer, Eric Vittinghoff, Mark J. Pletcher, Jared P. Reis, Stephen Sidney, Kirsten L. Johansen, Kirsten Bibbins-Domingo, Carmen A. Peralta, and Michael G. Shlipak

1588 Endothelium-Dependent and -Independent Vascular Function in Advanced Chronic Kidney Disease

Tal Kopel, James S. Kaufman, Naomi Hamburg, John S. Sampalis, Joseph A. Vita, and Laura M. Dember

1595 Is Chronic Dialysis the Right Hard Renal End Point To Evaluate Renoprotective Drug Effects?

Misghina Weldegiorgis, Dick de Zeeuw, Jamie P. Dwyer, Peter Mol, and Hiddo J.L. Heerspink
See related editorial on page 1561.

1601 Effectiveness of Quality Improvement Strategies for the Management of CKD: A Meta-Analysis

Samuel A. Silver, Chaim M. Bell, Glenn M. Chertow, Prakesh S. Shah, Kaveh Shojania, Ron Wald, and Ziv Harel

1615 Effect of Sofosbuvir-Based Hepatitis C Virus Therapy on Kidney Function in Patients with CKD

Meghan E. Sise, Elke Backman, Guillermo A. Ortiz, Gregory L. Hundemer, Nneka N. Ufere, Donald F. Chute, Joseph Brancale, Dihua Xu, Jessica Wisocky, Ming V. Lin, Arthur Y. Kim, Ravi Thadhani, and Raymond T. Chung
See related editorial on page 1563.

Clinical Nephrology

1624 Epidemiology and Natural History of the Cardiorenal Syndromes in a Cohort with Echocardiography

Thomas A. Mavranakas, Aisha Khattak, Karandeep Singh, and David M. Charytan

Glomerular and Tubulointerstitial Diseases

1634 The Clinical and Mutational Spectrum of Turkish Patients with Cystinosis

Rezan Topaloglu, Bora Gulhan, Mihriban İnözü, Nur Canpolat, Alev Yilmaz, Aytül Noyan, İsmail Dursun, İbrahim Gökçe, Metin Kaya Gürgöze, Nurver Akinci, Esra Baskin, Erkin Serdaroğlu, Beltinge Demircioğlu Kiliç, Selçuk Yüksel, Duygu Övünç Hacıhamdioğlu, Emine Korkmaz, Mutlu Hayran, and Fatih Ozaltın, on behalf of the contributors of The Turkish Cystinosis Study Group

1642 Circulating Antibodies against Thrombospondin Type-I Domain-Containing 7A in Chinese Patients with Idiopathic Membranous Nephropathy

Jia Wang, Zhao Cui, Jie Lu, Christian Probst, Yi-miao Zhang, Xin Wang, Zhen Qu, Fang Wang, Li-qiang Meng, Xu-yang Cheng, Gang Liu, Hanna Debiec, Pierre Ronco, and Ming-hui Zhao

Maintenance Dialysis

1652 National Estimates of 30-Day Unplanned Readmissions of Patients on Maintenance Hemodialysis

Lili Chan, Kinsuk Chauhan, Priti Poojary, Aparna Saha, Elizabeth Hammer, Joseph A. Vassalotti, Lindsay Jubelt, Bart Ferket, Steven G. Coca, and Girish N. Nadkarni
See related editorial on page 1566.

Transplantation

1663 A French Cohort Study of Kidney Retransplantation after Post-Transplant Lymphoproliferative Disorders

Sophie Caillard, Etienne Cellot, Jacques Dantal, Olivier Thaunat, François Provot, Bénédicte Janbon, Matthias Buchler, Dany Anglicheau, Pierre Merville, Philippe Lang, Luc Frimat, Charlotte Colosio, Eric Alamartine, Nassim Kamar, Anne Elisabeth Heng, Antoine Durrbach, Valérie Moal, Joseph Rivalan, Isabelle Etienne, Marie Noelle Peraldi, Anne Moreau, and Bruno Moulin for the French PTLT Registry

1671 Magnetic Resonance Elastography to Assess Fibrosis in Kidney Allografts

Anish Kirpalani, EYESHA Hashim, General Leung, Jin K. Kim, Adriana Krizova, Serge Jothy, Maya Deeb, Nan N. Jiang, Lauren Glick, Gevork Mntzakanian, and Darren A. Yuen

Glomerular Diseases: Update for the Clinician

1680 ANCA Glomerulonephritis and Vasculitis

J. Charles Jennette and Patrick H. Nachman

Kidney Case Conferences

Nephrology Quiz and Questionnaire

1692 Slow Rise in Serum Creatinine Level in a Kidney Transplant Recipient 3 Years Post-Transplant

Margaret J. Bia

Attending Rounds

1695 A Patient with a Novel Gene Mutation Leading to Autosomal Dominant Polycystic Kidney Disease

Bharathi V. Reddy and Arlene B. Chapman

Evidence-Based Nephrology

1699 Effectiveness of Treatment Modalities on Kidney Stone Recurrence

Anna L. Zisman

Commentary

1709 Commentary on “Effectiveness of Treatment Modalities on Kidney Stone Recurrence”

Stephen L. Seliger and Bryan R. Kestenbaum

Perspectives

1711 A Rebuttal to “The CKD Classification System in the Precision Medicine Era”

Andrew S. Levey and Adeera Levin

1714 Perspective on Nephrology Fellowship in the United States

Michel Chonchol

1715 Perspectives on the Nephrology Match for Fellowship Applicants

Michael J. Ross and Gregory Braden for the ASN Match Committee

1718 Resizing Nephrology Training Programs: A Call to Action

Michal L. Melamed, Kirk N. Campbell, and Thomas L. Nickolas

On the Cover

What's the diagnosis?

Case description: A 63-year-old Caucasian man in the southeastern USA developed a flu-like illness with fever and myalgia. He developed unilateral tingling in his toes and tea-colored urine. No rash, hemoptysis or epistaxis were noted. He went to his primary care physician who performed a urinalysis that revealed 3+ hematuria and 2+ proteinuria. He was referred to a nephrologist. Physical examination identified fever, mid hypertension, loss of sensation in several toes, and slight motor weakness in one foot. Laboratory results included hematuria with RBC casts, urine P/C ratio 3.2, creatinine 4.1 mg/dl, positive P-ANCA/MPO-ANCA, normal C3 and C4, and no elevation in rheumatoid factor, C-ANCA/PR3-ANCA, ANA, or anti-GBM.

Description of Images: Renal biopsy demonstrated segmental cellular crescents in 35% of glomeruli, adjacent to segments with necrosis, sclerosis or both. The remaining glomeruli were unremarkable. Three different small interlobular arteries had arteritis with segmental fibrinoid necrosis and adjacent inflammation. The cover photographs demonstrate Masson trichrome stains of a glomerulus with segmental red fibrinoid necrosis and an adjacent small cellular crescent in one panel, and a small interlobular artery in the other panel with segmental transmural fibrinoid necrosis with adjacent interstitial inflammation with slight leukocytoclasia. Immunofluorescence microscopy demonstrated low level segmental granular mesangial staining for IgG (1+), IgA (1+), C3 (2+), and kappa and lambda light chains (1+). 20% of glomeruli had segmental staining for fibrin consistent with necrosis/crescents. There was no glomerular staining for IgM or C1q. One interlobular artery had segmental staining for fibrin indicative of fibrinoid necrosis. Electron microscopy of a glomerulus with segmental necrosis revealed segmental GBM breaks, a cellular crescent with fibrin tactoids, focal foot process effacement, and small scattered mesangial and rare subendothelial immune complex type electron dense deposits. The pathologic diagnosis was MPO-ANCA pauci-immune focal necrotizing and sclerosing glomerulonephritis with 35% crescents and necrotizing arteritis (Berdn focal class), consistent with microscopic polyangiitis (MPA). Treatment was begun with methylprednisolone and cyclophosphamide.

Major Teaching Points: Prior to biopsy, the evidence for severe glomerulonephritis in an older adult predicted a likelihood of ANCA glomerulonephritis of >50%, because ANCA disease is the most common cause for new-onset glomerulonephritis in patients >50 years old in North America. The added evidence for peripheral neuropathy increased the likelihood to >75%, and the positive ANCA serology pushed the likelihood to >90%. The biopsy confirmed the diagnosis of ANCA glomerulonephritis, and the focal distribution of lesions (i.e. affecting <50% of glomeruli) provide confidence that high level immunosuppressive therapy was not only justified but very likely to result in complete remission of active disease with very low risk for progression to ESKD. The fact that the patient was MPO-ANCA positive rather than PR3-ANCA positive, was MPA rather than GPA, and had no evidence for respiratory tract disease, indicated a lower risk for relapse after induction of remission. In conclusion, with prompt diagnosis and appropriate treatment, this patient with a potentially life threatening disease had an excellent prognosis for full recovery.

(Images and text provided by J. Charles Jennette and Patrick Henry Nachman, University of North Carolina, Chapel Hill, North Carolina)