Editorials

1273 Is There Clinical Value in Measuring suPAR Levels in FSGS?
Sanja Sever, Howard Trachtman, Changli Wei, and Jochen Reiser
See related article on page 1304.

1276 What Determines Whether a Patient Initiates Chronic Renal Replacement Therapy?
Michael J. Germain and Lewis M. Cohen
See related article on page 1327.

1279 Pulmonary Congestion in Hemodialysis: An Old Chestnut Worth Screening For?
Austin G. Stack and Liam F. Casserly
See related article on page 1343.

1282 Fracture Risk in CKD
Kristine E. Ensrud
See related article on page 1367.

Original Articles

1284 Impaired Kidney Function at Hospital Discharge and Long-Term Renal and Overall Survival in Patients Who Received CRRT
Susanne Stads, Gijs Fortrie, Jasper van Bommel, Robert Zietse, and Michiel G.H. Betjes

1293 Cardiac Resynchronization Therapy in CKD: A Systematic Review
Neha Garg, George Thomas, Gregory Jackson, John Rickard, Joseph V. Nally Jr., W.H. Wilson Tang, and Sankar D. Navaneethan

1304 Serum Soluble Urokinase-Type Plasminogen Activator Receptor Levels and Idiopathic FSGS in Children: A Single-Center Report
Margret E. Bock, Heather E. Price, Lorenzo Gallon, and Craig B. Langman
See related editorial on page 1273.

1312 Relation between Asymptomatic Proteinase 3 Antibodies and Future Granulomatosis with Polyangiitis
Stephen W. Olson, David Owshalimpur, Christina M. Yuan, Charles Arbogast, Thomas P. Baker, David Oliver, and Kevin C. Abbott

1319 Lipoprotein Kinetics in Male Hemodialysis Patients Treated with Atorvastatin
Johannes P. Schwaiger, Yoshinobu Nakada, Ramona Berberich, Katsunori Ikewaki, Benjamin Dieplinger, Emanuel Zitt, Ulrich Neyer, Hermann Salmhofer, Florian Kronenberg, Paul Koenig, and Hans Dieplinger

1327 Factors Associated with Initiation of Chronic Renal Replacement Therapy for Patients with Kidney Failure
Labib I. Faruque, Brenda R. Hemmelgarn, Natasha Wiebe, Braden J. Manns, Pietro Ravani, Scott Klarenbach, Rick Pelletier, and Marcello Tonelli, for the Alberta Kidney Disease Network
See related editorial on page 1276.
1336 Temporal Trends in the Incidence, Treatment, and Outcomes of Hip Fracture in Older Patients Initiating Dialysis in the United States
Sumi Sukumaran Nair, Aya A. Mitani, Benjamin A. Goldstein, Glenn M. Chertow, David W. Lowenberg, and Wolfgang C. Winkelmayer

1343 Asymptomatic Pulmonary Congestion and Physical Functioning in Hemodialysis Patients
Giuseppe Enia, Claudia Torino, Vincenzo Panuccio, Rocco Tripepi, Maurizio Postorino, Roberta Aliotta, Marianna Bellantoni, Giovanni Tripepi, Francesca Mallamaci, and Carmine Zoccali, on behalf of the Lung Comets Cohort Working Group
See related editorial on page 1279.

Genetics
1349 Association between Genotype and Phenotype in Uromodulin-Associated Kidney Disease
Jonathan L. Moskowitz, Sian E. Piret, Karl Lhotta, Thomas M. Kitzler, Adam P. Tashman, Erin Velez, Rajesh V. Thakker, and Peter Kotanko

1358 Candidate Gene Analysis of Arteriovenous Fistula Failure in Hemodialysis Patients
Jeffrey J.W. Verschuren, Gurbey Ocak, Friedo W. Dekker, Ton J. Rabelink, J. Wouter Jukema, and Joris I. Rotmans

Mineral Metabolism/Bone Disease
1367 Estimated GFR and Fracture Risk: A Population-Based Study
Meghan J. Elliott, Matthew T. James, Robert R. Quinn, Pietro Ravani, Marcello Tonelli, Luz Palacios-Derflingher, Zhi Tan, Braden J. Manns, Gregory A. Kline, Paul E. Ronksley, and Brenda R. Hemmelgarn
See related editorial on page 1282.

1378 Parathyroidectomy and Heart Rate Variability in Patients with Stage 5 CKD
Jing Zhang, Xiangbao Yu, Bin Sun, Jianling Bai, Yongyue Wei, Xiaoming Zha, Yiyao Cui, Ming Zeng, Jingjing Zhang, Jia Liu, Huijuan Mao, Bo Zhang, Haibin Ren, Yilei Ge, Xueqiang Xu, Zhixiang Shen, Changying Xing, Kejiang Cao, and Ningning Wang

Nephrolithiasis
1389 Soda and Other Beverages and the Risk of Kidney Stones
Pietro Manuel Ferraro, Eric N. Taylor, Giovanni Gambaro, and Gary C. Curhan

Renal Transplantation
1396 Comparison of Regulatory T Cells in Hemodialysis Patients and Healthy Controls: Implications for Cell Therapy in Transplantation

Commentaries
1406 The Unjustified Classification of Kidney Donors as Patients with CKD: Critique and Recommendations
Arthur J. Matas and Hassan N. Ibrahim

1414 GFR Estimating Equations: Getting Closer to the Truth?
Andrew D. Rule and Richard J. Glasscock

Ethics Series
1421 Considerations in Starting a Patient with Advanced Frailty on Dialysis: Complex Biology Meets Challenging Ethics
Mark Swidler
On the Cover

What’s the diagnosis?

A 60-year-old man with remote history of lower extremity DVT (on warfarin) presented with diffuse joint pains, and erythematous rash on his right hand and wrist that extended to his forearm. A purpuric rash subsequently developed on his left arm and bilateral thighs. He was initiated on intravenous antibiotics for cellulitis at a community hospital and transferred to Yale-New Haven Hospital. The purpura progressed to hemorrhagic bullae. Biopsy of the rash was consistent with leukocytoclastic vasculitis with negative IgA staining. Abdominal pain and bloody stools developed during hospitalization. The nephrology service was consulted after urinalysis showed 2+ protein and large blood on dipstick and serum creatinine increased from 0.9 mg/dL to 2.0 mg/dL. Nephrologist performed urine microscopy demonstrated 2-5 dysmorphic RBCs/HPF, 1-3 WBCs /HPF and 1-2 RBC casts/LPF (upper left panel). A kidney biopsy was performed revealing a proliferative glomerulus with necrosis on light microscopy (upper right panel). Immunofluorescence staining (lower left panel) revealed dominant IgA staining in the mesangium and capillary loops. Electron microscopy demonstrated electron dense deposits in the mesangium and subendothelium (lower right panel). The clinical presentation and kidney biopsy findings are consistent with Henoch-Schonlein Purpura (HSP) or IGA vasculitis. The patient was treated with intravenous methylprednisolone 1 gram daily for 3 days followed by oral prednisone 60 mg daily. Within a few days, he felt much improved with resolution of arthralgias and abdominal pain, while the rash started to fade over the next week. Kidney function stabilized and improved back to baseline over the next 2 weeks.

HSP, which is more commonly a disease of childhood, is characterized by the tetrad of palpable purpura, arthritis/arthralgias, abdominal pain, and kidney disease. Clinical manifestations, which result from the deposition of IgA-containing immune complexes, typically develop over a period of days, often starting with joint symptoms and purpuric skin rash. Skin biopsy reveals a leukocytoclastic vasculitis with IgA positive staining; however, IgA can be negative in 25%, especially in older lesions. Urinalysis often reveals proteinuria, hematuria, and leukocyturia, while urine microscopy demonstrates an active urine sediment with dysmorphic RBCs and RBC casts (upper left panel). Kidney biopsy reveals a spectrum of glomerular changes ranging from isolated mesangial proliferation, focal and segmental proliferation, to glomerular necrosis with severe crescentic glomerulonephritis. Immunofluorescence reveals prominent IgA staining in the mesangium (lower left panel). IgG, IgM, C3 and fibrinogen may also be present. Electron dense deposits are often found in the mesangial area, which can extend to the peripheral capillary loops (lower right panel). Supportive care is typically sufficient in most cases; however, glucocorticoids enhance the rate of resolution of arthralgias and rash. Intravenous methylprednisolone followed by oral prednisone (for 6 months) are used when glomerular necrosis and crescentic glomerulonephritis are present.

(Images and text provided by Gilbert Moeckel, MD and Mark A. Perazella, MD, Yale University School of Medicine, New Haven, Connecticut)