

# CJASN

Clinical Journal of the American Society of Nephrology

July 2018 • Vol. 13 • No. 7

## Patient Voice

---

**971 12 Tips to Nephrology Teams Supporting Patients with Advanced Kidney Disease: An Advocate's Dozen**

*Edward V. Hickey III*

*See related article on page 1022.*

## Editorials

---

**973 Urinary Phosphorus Excretion: Not What We Have Believed It to Be?**

*Adamasco Cupisti and Maurizio Gallieni*

*See related article on page 1002.*

**975 The Changing Spectrum of Heroin-Associated Kidney Disease**

*Sanjeev Sethi*

*See related article on page 1030.*

**977 Evolving Epidemiology of Pediatric Glomerular Disease**

*Michelle N. Rheault and Scott E. Wenderfer*

*See related article on page 1047.*

**979 Site of Care and Health Outcomes of Veterans Undergoing Maintenance Dialysis**

*Wissam Kourany and Susan T. Crowley*

*See related article on page 1055.*

**982 The Affordable Care Act, Kidney Transplant Access, and Kidney Disease Care in the United States**

*Nitender Goyal and Daniel E. Weiner*

*See related article on page 1069.*

## Original Articles

---

### Acid/Base and Electrolyte Disorders

**984 Risk Factors and Outcomes of Rapid Correction of Severe Hyponatremia**

*Jason C. George, Waleed Zafar, Ion Dan Bucaloiu, and Alex R. Chang*

### Chronic Kidney Disease

**993 Self-Reported Tobacco, Alcohol, and Illicit Drug Use and Progression of Chronic Kidney Disease**

*Joshua D. Bundy, Lydia A. Bazzano, Dawei Xie, Janet Cohan, Jacqueline Dolata, Jeffrey C. Fink, Chi-yuan Hsu, Kenneth Jamerson, James Lash, Gail Makos, Susan Steigerwalt, Xue Wang, Katherine T. Mills, Jing Chen, Jiang He, and the CRIC Study Investigators*

**1002 Twenty-Four-Hour Urine Phosphorus as a Biomarker of Dietary Phosphorus Intake and Absorption in CKD: A Secondary Analysis from a Controlled Diet Balance Study**

*Elizabeth R. Stremke, Linda D. McCabe, George P. McCabe, Berdine R. Martin, Sharon M. Moe, Connie M. Weaver, Munro Peacock, and Kathleen M. Hill Gallant*

*See related editorial on page 973.*

**1013 Soluble Urokinase-Type Plasminogen Activator Receptor in Black Americans with CKD**

*Shengyuan Luo, Josef Coresh, Adrienne Tin, Casey M. Rebholz, Teresa K. Chen, Salim S. Hayek, Melissa Tracy, Michael S. Lipkowitz, Lawrence J. Appel, Andrew S. Levey, Lesley A. Inker, Jochen Reiser, and Morgan Erika Grams*

Geriatric and Palliative Nephrology

**1022 Emotional Impact of Illness and Care on Patients with Advanced Kidney Disease**

*Ann M. O'Hare, Claire Richards, Jackie Szarka, Lynne V. McFarland, Whitney Showalter, Elizabeth K. Vig, Rebecca L. Sudore, Susan T. Crowley, Ranak Trivedi, and Janelle S. Taylor*  
See related Patient Voice on page 971.

Glomerular and Tubulointerstitial Diseases

**1030 Heroin Use Is Associated with AA-Type Kidney Amyloidosis in the Pacific Northwest**

*Arjun Sharma, Priyanka Govindan, Mirna Toukatly, Jack Healy, Connor Henry, Steve Senter, Behzad Najafian, and Bryan Kestenbaum*  
See related editorial on page 975.

**1037 Kidney Involvement of Patients with Waldenström Macroglobulinemia and Other IgM-Producing B Cell Lymphoproliferative Disorders**

*Larissa Higgins, Samih H. Nasr, Samar M. Said, Prashant Kapoor, David Dingli, Rebecca L. King, S. Vincent Rajkumar, Robert A. Kyle, Taxiarchis Kourelis, Morie A. Gertz, Angela Dispenzieri, Martha Q. Lacy, Francis K. Buadi, Stephen M. Ansell, Wilson I. Gonsalves, Carrie A. Thompson, Fernando C. Fervenza, Ladan Zand, Yi L. Hwa, Dragan Jevremovic, Min Shi, and Nelson Leung*

**1047 The Spectrum of Biopsy-Proven Glomerular Diseases among Children in China: A National, Cross-Sectional Survey**

*Sheng Nie, Wenjuan He, Ting Huang, Diankun Liu, Guobao Wang, Jian Geng, Nan Chen, Gang Xu, Ping Zhang, Yang Luo, Jing Nie, Xin Xu, and Fan Fan Hou*  
See related editorial on page 977.

Maintenance Dialysis

**1055 Dialysis Provider and Outcomes among United States Veterans Who Transition to Dialysis**

*Elani Streja, Csaba Pal Kovesdy, Melissa Soohoo, Yoshitsugu Obi, Connie M. Rhee, Christina Park, Joline L.T. Chen, Tracy Nakata, Danh V. Nguyen, Alpesh N. Amin, Steven J. Jacobsen, John J. Sim, and Kamyar Kalantar-Zadeh*  
See related editorial on page 979.

**1063 Prevalence of Central Vein Stenosis in Patients Referred for Vein Mapping**

*Fasika M. Tedla, Guerrier Clerger, Dale Distant, and Moro Salifu*

Transplantation

**1069 Association between Medicaid Expansion under the Affordable Care Act and Preemptive Listings for Kidney Transplantation**

*Meera N. Harhay, Ryan M. McKenna, Suzanne M. Boyle, Karthik Ranganna, Lissa Levin Mizrahi, Stephen Guy, Gregory E. Malat, Gary Xiao, David J. Reich, and Michael O. Harhay*  
See related editorial on page 982.

---

Erratum

**1079 Correction**

---

Kidney Case Conference: Attending Rounds

**1080 Management of Nonadherence in ESKD Patients**

*Scott D. Cohen and Paul L. Kimmel*

---

Nephro pharmacology for the Clinician

**1083 Introduction to Nephro pharmacology for the Clinician: A New CJASN Series**

*Thomas D. Nolin and Mark A. Perazella*  
See related article on page 1085.

**1085 Clinical Pharmacokinetics in Kidney Disease: Fundamental Principles**

*Tom N. Lea-Henry, Jane E. Carland, Sophie L. Stocker, Jacob Sevastos, and Darren M. Roberts*  
See related article on page 1083.

## Perspectives

---

### 1096 Requirements for Procedural Skills in Nephrology Training Programs: Framing the Conversation

Suzanne M. Norby

See related articles on pages 1099, 1102 and 1105.

### 1099 Training Nephrology Fellows in Temporary Hemodialysis Catheter Placement and Kidney Biopsies is Needed and Should be Required

Jeffrey S. Berns

See related articles on pages 1096, 1102 and 1105.

### 1102 Training Nephrology Fellows in Temporary Hemodialysis Catheters and Kidney Biopsies Is Not Needed and Should Not Be Required

Stuart J. Shankland

See related articles on pages 1096, 1099 and 1105.

### 1105 Kidney Biopsy Training and the Future of Nephrology: What about the Patient?

Robert S. Brown

See related articles on pages 1096, 1099 and 1102.

### 1107 Burden of Proof for Tolvaptan in ADPKD: Did REPRISÉ Provide the Answer?

Reem A. Mustafa and Alan S.L. Yu

### 1110 Mandating Staffing Ratios in Hemodialysis Facilities: California SB 349 and Unintended Consequences

Anjay Rastogi and Glenn M. Chertow

## Feature

---

### 1113 Overcoming Translational Barriers in Acute Kidney Injury: A Report from an NIDDK Workshop

Anna Zuk, Paul M. Palevsky, Linda Fried, Frank E. Harrell Jr., Samina Khan, Dianne B. McKay, Luke Devey, Lakhmir Chawla, Mark de Caestecker, James S. Kaufman, B. Taylor Thompson, Anupam Agarwal, Tom Greene, Mark Douglas Okusa, Joseph V. Bonventre, Laura M. Dember, Kathleen D. Liu, Benjamin D. Humphreys, Daniel Gossett, Yining Xie, Jenna M. Norton, Paul L. Kimmel, and Robert A. Star

## Review

---

### 1124 BP Measurement Techniques: What They Mean for Patients with Kidney Disease

George Thomas and Paul E. Drawz

### On the Cover

*What's the diagnosis?*

A 55 year-old man, originally from Cameroon, with a history of hypertension and Stage 3 CKD attributed to diabetes mellitus, presented with malaise and fatigue. He was diagnosed with AKI with BUN 127 mg/dL and serum creatinine (sCr) 18.9 mg/dL (baseline 1.5 mg/dL). Urinalysis revealed 1 WBC/hpf, no crystals, and urine protein/creatinine ratio 0.16 g/g. Serological testing was negative, and kidney ultrasound showed increased echogenicity. Kidney biopsy revealed numerous intraluminal calcium oxalate crystals consistent with oxalate nephropathy. On further questioning, the patient reported ingesting multiple unknown herbal bowel cleansing regimens while in Africa. He was initiated on hemodialysis with eventual kidney recovery by 8 weeks. No genetic testing was pursued. Follow-up sCr was 3.49 mg/dL (eGFR 22 ml/min per 1.73m<sup>2</sup>) off dialysis.

Light microscopy revealed 20 glomeruli, of which 5 were globally sclerotic. Patent glomeruli were normocellular without mesangial expansion. Moderate acute tubular injury was present. Numerous translucent crystals were present in tubule lumens and in epithelial cell cytoplasm that were birefringent under polarized light (H&E, Figure 1; silver, Figure 2). Diffuse interstitial edema was present in association with 20 – 25% tubulointerstitial fibrosis. IF and EM were unrevealing.

Primary hyperoxaluria results from autosomal recessive mutations in *AGXT*, *GRHPR*, or *HOGA1*. Secondary hyperoxaluria, as in this patient, has numerous etiologies and remains an uncommonly diagnosed cause of AKI. Etiologies of acquired oxalate nephropathy include increased dietary oxalate intake, ethylene glycol toxicity, fat malabsorption, vitamin C supplementation, and B6 deficiency. In contrast, calcium phosphate crystals are blue to purple on H&E, react with von Kossa stain, and are not birefringent.

(Images and text provided by Javier Rodriguez-Sanchez, MD; Mohamad Hanouneh, MD; and C. John Sperati, MD, MHS, Johns Hopkins University, Department of Medicine, Division of Nephrology, Baltimore, Maryland)