

# CJASN

Clinical Journal of the American Society of Nephrology

May 2013 • Vol. 8 • No. 5

## Editorials

---

**703 The Role of Bicarbonate in CKD: Evidence Bulks Up**

*Eric E. Simon and L. Lee Hamm*  
See related article on page 714.

**706 Clinical Implications of the Relationship between Low Calcium Concentration Dialysate and Sudden Death**

*Anthony J. Bleyer*  
See related article on page 797.

**708 Lifting the Veil: Insights into Vascular Access Options**

*Lalathaksha Kumbar and Anatole Besarab*  
See related articles on pages 804 and 810.

**711 Ionizing Radiation During Pretransplant Evaluation: Time to Reconsider the Evaluation Process**

*Deborah B. Adey*  
See related article on page 833.

## Original Articles

---

### Acid/Base and Electrolyte Disorders

**714 Effects of Oral Sodium Bicarbonate in Patients with CKD**

*Matthew K. Abramowitz, Michal L. Melamed, Carolyn Bauer, Amanda C. Raff, and Thomas H. Hostetter*  
See related editorial on page 703.

### Chronic Kidney Disease

**721 Clinical Correlates of Ambulatory BP Monitoring among Patients with CKD**

*Satoshi Iimuro, Enyu Imai, Tsuyoshi Watanabe, Kosaku Nitta, Tadao Akizawa, Seiichi Matsuo, Hirofumi Makino, Yasuo Ohashi, and Akira Hishida, for the Chronic Kidney Disease Japan Cohort Study Group*

**731 Association of BP Variability with Mortality among African Americans with CKD**

*Ciaran J. McMullan, George L. Bakris, Robert A. Phillips, and John P. Forman*

**739 Documentation and Management of CKD in Rural Primary Care**

*Maya K. Rao, Cynthia D. Morris, Jean P. O'Malley, Melinda M. Davis, Motomi Mori, and Sharon Anderson*

### Clinical Nephrology

**749 Prognostic Value of Glomerular Collagen IV Immunofluorescence Studies in Male Patients with X-Linked Alport Syndrome**

*Laura Massella, Concetta Gangemi, Kostas Giannakakis, Antonella Crisafi, Tullio Faraggiana, Chiara Fallerini, Alessandra Renieri, Andrea Onetti Muda, and Francesco Emma*

**756 Two-Year Outcome of the ISKDC Regimen and Frequent-Relapsing Risk in Children with Idiopathic Nephrotic Syndrome**

*Koichi Nakanishi, Kazumoto Iijima, Kenji Ishikura, Hiroshi Hataya, Hitoshi Nakazato, Satoshi Sasaki, Masataka Honda, and Norishige Yoshikawa, for the Japanese Study Group of Renal Disease in Children*

- 764 Precision of Estimating Equations for GFR in Children with a Solitary Functioning Kidney: The KIMONO Study**  
*Rik Westland, Yael Abraham, Arend Bökenkamp, Birgit Stoffel-Wagner, Michiel F. Schreuder, and Joanna A.E. van Wijk*
- Epidemiology and Outcomes**
- 773 The Outcomes of Patients with ESRD and ANCA-Associated Vasculitis in Australia and New Zealand**  
*Wen Tang, Bhadrans Bose, Stephen P. McDonald, Carmel M. Hawley, Sunil V. Badve, Neil Boudville, Fiona G. Brown, Philip A. Clayton, Scott B. Campbell, Chen Au Peh, and David W. Johnson*
- 781 Serum FGF23 and Risk of Cardiovascular Events in Relation to Mineral Metabolism and Cardiovascular Pathology**  
*Johan Ärnlöv, Axel C. Carlsson, Johan Sundström, Erik Ingelsson, Anders Larsson, Lars Lind, and Tobias E. Larsson*
- 787 Immunosuppression for Membranous Nephropathy: A Systematic Review and Meta-Analysis of 36 Clinical Trials**  
*Yizhi Chen, Arrigo Schieppati, Guangyan Cai, Xiangmei Chen, Javier Zamora, Giovanni A. Giuliano, Norbert Braun, and Annalisa Perna*
- 797  Dialysate Calcium Concentration and the Risk of Sudden Cardiac Arrest in Hemodialysis Patients**  
*Patrick H. Pun, John R. Horton, and John P. Middleton*  
*See related editorial on page 706.*
- ESRD and Chronic Dialysis**
- 804 Long-term Outcomes of Arteriovenous Thigh Grafts in Hemodialysis Patients: A Comparison with Tunneled Dialysis Catheters**  
*Song Ong, Jill Barker-Finkel, and Michael Allon*  
*See related editorial on page 708.*
- 810 Cumulative Patency of Contemporary Fistulas versus Grafts (2000–2010)**  
*Charmaine E. Lok, Jessica M. Sontrop, George Tomlinson, Dheeraj Rajan, Mark Cattral, George Oreopoulos, Jeremy Harris, and Louise Moist*  
*See related editorial on page 708.*
- Mineral Metabolism/Bone Disease**
- 819 The Relation between Renal Function and Serum Sclerostin in Adult Patients with CKD**  
*Solenne Pelletier, Laurence Dubourg, Marie-Christine Carlier, Aoumeur Hadj-Aissa, and Denis Fouque*
- 824 The Skeletal Consequences of Growth Hormone Therapy in Dialyzed Children: A Randomized Trial**  
*Justine Bacchetta, Katherine Wesseling-Perry, Beatriz Kuizon, Renata C. Pereira, Barbara Gales, He-jing Wang, Robert Elashoff, and Isidro B. Salusky*
- Renal Transplantation**
- 833 Ionizing Radiation Exposure among Kidney Transplant Recipients Due to Medical Imaging during the Pretransplant Evaluation**  
*Kim N. Nguyen, Anup M. Patel, and Francis L. Weng*  
*See related editorial on page 711.*

## Ethics Series

---

- 840 Nephrologists' Professional Ethics in Dialysis Practices**  
*David T. Ozar, Cynthia Kristensen, Stephen Z. Fadem, Robert Blaser, Dale Singer, and Alvin H. Moss*

## Public Policy Series

---

- 845 The USRDS: What You Need to Know about What It Can and Can't Tell Us about ESRD**  
*Robert N. Foley and Allan J. Collins*

## In-Depth Reviews

---

### 852 Effect of Red Cell Transfusions on Future Kidney Transplantation

*Gregorio T. Obrador and Iain C. Macdougall*

### 861 Assessing Physical Function and Physical Activity in Patients with CKD

*Patricia Painter and Robin L. Marcus*

## Mini-Review

---

### 873 $\beta$ -Trace Protein: From GFR Marker to Cardiovascular Risk Predictor

*Esteban Orenes-Piñero, Sergio Manzano-Fernández, Ángel López-Cuenca, Francisco Marín, Mariano Valdés, and James L. Januzzi*

## Special Feature

---


### 882 ASN Clinical Pathological Conference

*Mohamed G. Atta and Michael B. Stokes*

## Erratum

---

### 891 Correction

 eJournal club provides a timely and interactive electronic journal club experience by offering a forum in which CJASN readers have the opportunity to converse with the featured study authors. Visit [ejc.cjasn.org](http://ejc.cjasn.org) to learn more.

### On the Cover

*What's the diagnosis?* Microscopic examination of the spun urine sediment often provides a window into a patient's disease. In patients with hematuria, a number of different urinary red blood cells (RBCs) may be seen. Most commonly, isomorphic or normal appearing RBCs are noted, typically indicative of non-glomerular bleeding from the kidney, collecting system, bladder, or urethra. The most common causes of isomorphic urinary RBCs are nephrolithiasis and renal or other genitourinary cancers. However, non-isomorphic RBCs may also appear in the urine; some unique examples are pictured on this CJASN cover. In the upper left panel, sickled RBCs are present. Hematuria occurs in approximately 3-4% of patients with sickle cell disease. These RBCs are similar in morphology to the sickled RBCs found on peripheral blood smear. Case reports describe the diagnosis of sickle cell disease following recognition of these RBCs in patients presenting with hematuria. Acanthocytes, the classic dysmorphic RBC found in the urine most often reflects glomerular bleeding. In patients who present with hematuria, RBC casts and acanthocytes are usually indicative of glomerular injury from an underlying glomerulonephritis or other form of glomerular injury. Elliptocytes, as seen in the lower left panel are elongated RBCs, which are classically described as "cigar shaped". These RBCs are extremely rare in the urine. These cells were observed in the urine of a patient with hemolytic anemia, which was associated with elliptocytes in the peripheral blood. Dacrocytes, like elliptocytes are rarely seen in the urine and reflect peripheral blood dacrocytes that enter the urine following glomerular injury. These cells, noted in the lower right panel are "tear drop" shaped and are a form of poikilocyte, sometimes found in patients with myelofibrosis and myelophthistic anemia. (Images and text provided by Jose Antonio Tesser Poloni, Irmandade da Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Brazil, and Mark A. Perazella, Yale University, New Haven, Connecticut)