Patient Voice

1611 Understanding Fatigue with Kidney Disease: A Kidney Patient’s Journey with Post-Transplant Fatigue
Derek Forfang
See related article on page 1686.

Editorials

1613 Muscle Abnormalities with Kidney Failure
Peter Bárány
See related article on page 1676.

1615 Coffee Metabolites and Kidney Disease: Answers or More Questions?
Marilyn C. Cornelis and Britt Burton-Freeman
See related article on page 1620.

1617 ANCA Vasculitis Treatment in the Dialysis Patient: Caution Needed!
Elizabeth Hendren and Jai Radhakrishnan
See related article on page 1665.

Original Articles

Chronic Kidney Disease

1620 Metabolites Associated with Coffee Consumption and Incident Chronic Kidney Disease
William J. He, Jingsha Chen, Alexander C. Razavi, Emily A. Hu, Morgan E. Grams, Bing Yu, Chirag R. Parikh, Eric Boerwinkle, Lydia Bazzano, Lu Qi, Tanika N. Kelly, Josef Coresh, and Casey M. Rebholz
See related editorial on page 1615.

Geriatric and Palliative Nephrology

1630 Family Members’ Understanding of the End-of-Life Wishes of People Undergoing Maintenance Dialysis
Fahad Saeed, Catherine R. Butler, Carlyn Clark, Kristen O’Loughlin, Ruth A. Engelberg, Paul L. Hebert, Danielle C. Lavallee, Elizabeth K. Vig, Manjula Kurella Tamura, J. Randall Curtis, and Ann M. O’Hare

Glomerular and Tubulointerstitial Diseases

1639 C3 Glomerulopathy and Related Disorders in Children: Etiology-Phenotype Correlation and Outcomes

1652 Poly-IgA Complexes and Disease Severity in IgA Nephropathy
Xue Zhang, Jicheng Lv, Pan Liu, Xinfang Xie, Manliu Wang, Dan Liu, Hong Zhang, and Jing Jin
Maintenance Dialysis

Disease Activity and Adverse Events in Patients with ANCA-Associated Vasculitides Undergoing Long-Term Dialysis
Maëlis Kauffmann, Mickaël Bobot, Thomas Robert, Stéphane Burtey, Grégore Couvrat-Desvergnes, Frédéric Lavainne, Xavier Puéchal, Benjamin Terrier, Thomas Quéméneur, Stanislas Faguer, Alexandre Karras, Philippe Brunet, Cécile Couchoud, and Noémie Jourde-Chiche, on behalf of the REIN registry and the French Vasculitis Study Group
See related editorial on page 1617.

Skeletal Muscle Phenotype in Patients Undergoing Long-Term Hemodialysis Awaiting Kidney Transplantation
Jean-Sébastien Souweine, Fares Gouzi, Éric Badia, Pascal Pomies, Valérie Garrigue, Marion Morena, Maurice Hayot, Jacques Mercier, Bronia Ayoub, Moglie Le Quintrec, Fabrice Raynaud, and Jean-Paul Cristol
See related editorial on page 1613.

Transplantation

Airflow Limitation, Fatigue, and Health-Related Quality of Life in Kidney Transplant Recipients
Tim J. Knobbe, Daan Kremer, Michele F. Eisenga, Marco van Londen, Antônio W. Gomes-Neto, Rianne M. Douwes, C. Tj Gan, Eva Corpeleijn, Coby Annema, Gerjan Navis, Stelan P. Berger, and Stephan J.L. Bakker, on behalf of TransplantLines Investigators
See related Patient Voice on page 1611.

COVID-19–Associated Mortality among Kidney Transplant Recipients and Candidates in the United States
Sumit Mohan, Kristen L. King, S. Ali Husain, and Jesse D. Schold

Timing of Kidney Clamping and Deceased Donor Kidney Transplant Outcomes
Simon Ville, Marine Lorent, Clarisse Kerleau, Anders Asberg, Christophe Legendre, Emmanuel Morelon, Fanny Buron, Valérie Garrigue, Moglie Le Quintrec, Sophie Gire, Marc Ladrière, Laetitia Albano, Antoine Sicard, Denis Glotz, Carmen Lefaucheur, Julien Branchereau, David Jacobi, and Magali Girard, for the EKiTE Consortium

Research Letters

Kidney Effects of Empagliflozin in People with Type 1 Diabetes
David Z.I. Cherney, Petter Bjornstad, Bruce A. Perkins, Julio Rosenstock, Dietmar Neubacher, Jan Marquard, and Nima Soleymanlou

Humoral Response to mRNA versus an Adenovirus Vector-Based SARS-CoV-2 Vaccine in Dialysis Patients

Kidney Transplantation Long-Term Management Challenges

Chronic Allograft Injury
Eric Langewisch and Roslyn B. Mannon

Recurrent Glomerular Disease after Kidney Transplantation: Diagnostic and Management Dilemmas
Audrey Uffing, Frank Hullekes, Leonardo V. Riella, and Jonathan J. Hogan

Kidney Case Conference: How I Treat

Could This Be Alport Syndrome?
Rachel Lennon and Alessia Fornoni

Perspectives

COVID-19 Vaccination Imperatives in People on Maintenance Dialysis: An International Perspective
Peter G. Blake, Michelle A. Hladunewich, and Matthew J. Oliver

Training Nephrology Fellows in Home Dialysis in the United States
Nupur Gupta and Brent W. Miller
1752 The Future Nephrology Workforce: There Will Be One
Mark G. Parker and Stephen M. Sozio

Feature

1755 Evidence For and Against Direct Kidney Infection by SARS-CoV-2 in Patients with COVID-19
Luise Hassler, Fabiola Reyes, Matthew A. Sparks, Paul Welling, and Daniel Batlle

Review

1766 Kidney Disease among People Who Are Incarcerated
Matthew Murphy, Ann Ding, Justin Berk, Josiah Rich, and George Bayliss

On the Cover

Case Description
A 62-year-old male with a history of kidney failure secondary to vesicoureteral reflux on long-term hemodialysis (HD) presented for kidney transplant. He had been on hemodialysis for 3 years. There was no history of diabetes mellitus or arterial hypertension. Physical examination revealed asthenia, and the patient was overweight (29 kg/m²) without muscle atrophy but with a significant decrease in muscle endurance. Interestingly, 1 year after kidney transplant, the patient did not report tiredness. Muscle biopsy was performed just before the kidney transplant.

Image Description:
Transmission electron microscopy analysis on muscle biopsy showed sarcomeric disorganization and proteolysis in the vastus lateralis muscles of long-term HD patients (center). We also observe an altered repartition of mitochondria coupled with an increase of mitochondrial size (left and center). Furthermore, patients present mitochondria with swelling or disrupted internal structures. Mit, mitochondria; Z, Z-line; C, control; P, patient. Scale bar 500 nm.

Teaching Points:
In HD patients, cellular muscle abnormalities are difficult to understand because of comorbidity, malnutrition, age, or sedentary lifestyle. In order to overcome these confounding factors, muscles were analyzed in highly selected HD patients undergoing kidney transplantation who were free of major comorbidities. Our study describes a specific muscle dysfunction characterized by a transition from type 1 (aerobic) to type 2 (anaerobic) muscle fibers without proteasome activation. Moreover, we observed alteration of mitochondria structure related to mitochondrial dysfunction through the activation of autophagy and mitophagy. These observations strongly suggest an energy deficiency in oxidative muscle and could explain the impaired endurance observed in long-term HD patients free of malnutrition and major comorbidities.

(Images and text provided by Fabrice Raynaud, Montpellier University, INSERM, Montpellier, France)
The cover image can be found in this issue of CJASN as Figure 3 A and C in the article titled “Skeletal Muscle Phenotype in Patients Undergoing Long-Term Hemodialysis Awaiting Kidney Transplantation,” by Dr. Jean-Sebastien Souweine and colleagues on pages 1676–1685 (doi: 10.2215/CJN.02390221).