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- Best Albuminuria Measurement to Predict Cardiovascular and Renal Events
A practical manual for physicians and nurses

Ultrasound Imaging in Acute and Chronic Kidney Disease

Editors
Mario Meola
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Acute Kidney Injury (AKI) is a serious disorder in which sudden impairment of kidney function occurs secondary to one or more of a variety of underlying conditions and exposures. It is very common in (elderly) ICU patients and associated with very high mortality. Many of those who survive suffer from permanent kidney failure and other long-term morbidities. Renowned experts from around the world have contributed to this new publication, creating a succinct yet complete review of the most controversial aspects of AKI. The topics range from epidemiology and basic science to pathophysiology and clinical issues. It is intended as a concise reference work for physicians and nurses who deal with AKI in clinical nephrology and intensive care wards on a daily basis.

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The journal *CardioRenal Medicine* explores the mechanisms by which obesity and other metabolic abnormalities promote the pathogenesis and progression of heart and kidney disease (cardiorenal metabolic syndrome). It provides an interdisciplinary platform for the advancement of research and clinical practice, focussing on translational issues.

Attention is paid to the fact that some metabolic abnormalities cluster with heart and chronic kidney disease, and collectively this is called the cardiorenal metabolic syndrome. Moreover, certain metabolic abnormalities of the heart promote impaired coronary artery endothelial function, diastolic dysfunction and ischemic reconditioning that parallel glomerular hyperfiltration and impairments in proximal tubule handling of sodium and albumin. Another point of focus is the role of the obesity epidemic in promoting the increasing incidence of heart and kidney disease in industrialized countries and the prevailing problems of insufficient exercise and excessive consumption of cheap, unwholesome food in promotion of the cardiorenal metabolic syndrome in both adults and children.

*CardioRenal Medicine* addresses a multidisciplinary audience consisting of nephrologists, cardiologists, nutritionists, endocrinologists, physiologists and general internists.

**Selected contributions**

- **Peritoneal Dialysis in Patients with Refractory Congestive Heart Failure: A Systematic Review:** Lu, R. (Shanghai/Vicenza); Muciño-Bermejo, M.-J.; Ribeiro, L.C.; Tonini, E.; Estremadoyro, C.; Samoni, S.; Sharma, A.; Zaragoza Galván, J.d.J.; Crepaldi, C.; Brendolan, A. (Vicenza); Ni, Z. (Shanghai); Rosner, M.H. (Charlotteville, Va.); Ronco, C. (Vicenza)
- **Hyperphosphate-Induced Myocardial Hypertrophy through the GATA-4/NFAT-3 Signaling Pathway Is Attenuated by ERK Inhibitor Treatment:** Liu, Y.-L.; Huang, C.-C.; Chang, C.-C.; Chou, C.-Y.; Lin, S.-Y.; Wang, I-K.; Hsieh, D.J.-Y.; Jong, G.-P.; Huang, C.-Y.; Wang, C.-M. (Taichung)
- **Clinical Prediction Scores for Type 1 Cardiorenal Syndrome Derived and Validated in Chinese Cohorts:** Cheng, H.; Chen, Y. (Beijing)
- **Practical Use of Home Blood Pressure Monitoring in Chronic Kidney Disease:** Sanghavi, S.; Vassalotti, J.A. (New York, N.Y.)
- **The Relationship between Serum Oxalic Acid, Central Hemodynamic Parameters and Colonization by *Oxalobacter formigenes* in Hemodialysis Patients:** Gulhan, B. (Erzincan); Turkmen, K. (Konya); Aydin, M.; Gunay, M.; Cikman, A.; Kara, M. (Erzincan)
- **Insulin Resistance and Skeletal Muscle Vasculature: Significance, Assessment and Therapeutic Modulators:** Maunique, C.J.; Sowers, J.R. (Columbia, Mo.)
- **Arterial Stiffness: A Nexus between Cardiac and Renal Disease:** Jia, G.; Aroor, A.R.; Sowers, J.R. (Columbia, Mo.)

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Medication Regimen Complexity and Adherence in Haemodialysis Patients: An Exploratory Study
Ghimire, S.; Peterson, G.M.; Castelino, R.L.; Jose, M.D.; Zaidi, S.T.R.
This is an investigation of medication regimen complexity, patients' perceived burden of medicines (PBM) and health-related quality of life (HR-QoL) as potential predictors of adherence. The authors examined adult patients (≥18 years) undergoing hemodialysis and data on medication regimen complexity index (MRCI), self-reported and objective adherence, comorbidity index, PBM, and HR-QoL were obtained using established measures. Sociodemographic and clinical characteristics were collected during interviews and by reviewing medical records. Predictors of adherence were determined using logistic regression. Fifty-three out of 70 hemodialysis patients consented to participate (response rate 75%). The mean MRCI, HR-QoL, and PBM scores were 27.0 ± 10.9, 0.70 ± 0.13 and 1.7 ± 0.6, respectively. Based on self-reports, 43.4% (n = 23) were adherent, whereas in a subset of patients analyzed using objective measure (n = 33), much lower adherence rate was observed. Older age was the only significant predictor of self-reported adherence, whereas older age, higher comorbidity and regimen complexity index were independent predictors of objective adherence. The authors conclude that medication regimen complexity was not associated with self-reported adherence. Moreover, older patients with high comorbidities and highly complex regimen are more likely to be adherent based on objective measures.

Metabolomics of Chronic Kidney Disease Progression: A Case-Control Analysis in the Chronic Renal Insufficiency Cohort Study
Rhee, E.P.; Elmariah, S.; Pierce, K.A.; Bullock, K.; Anderson, A.H.; Gerszten, R.E.; Feldman, H.I.
Typically, kidney is thought of as an excretory organ. Excretion of sodium, water, acid, potassium, and nitrogenous waste products are well recognized. The synthetic function such as vitamin D and erythropoietin are also well known. Less well known is the fact that a number of metabolites are synthesized in the kidney. In this nested case control study from the CRIC Study, Eugene Rhee et al. compared rapid progressors to stable CKD participants. They found that three amino acids (threonine, methionine, and arginine) were lower in the rapid progressors and were net released from the kidney. Using the metabolomics approach this study renews interest in the synthetic function of the kidney.
Best Albuminuria Measurement to Predict Cardiovascular and Renal Events


The current standard procedure for assessment of risk (death, cardiovascular and ESRD events) in the classification system of chronic kidney disease (CKD) advocated by the Disease Improving Global Outcomes (KDIGO) according to levels of urine albumin excretion is a ‘spot’ urinary albumin to creatinine ratio (UACR; in mg/mg or mg/mmol). However, levels of urinary creatinine excretion vary widely according to muscle mass, introducing an unwanted variable in the UACR value. Bauer et al. studied whether using an estimated urinary albumin excretion rate (eUAER), which adjusts for variation in urine creatinine excretion, would improve the accuracy of risk prediction for CVD or ESRD events over 3 years of follow-up. In a cohort of 443 subjects with CKD, using eUAER rather than UACR improved the accuracy of risk stratification for CVD but not ESRD events. This is a useful addition to our knowledge of predictive factors for CVD in CKD.
Cells Tissues Organs aims at bridging the gap between cell biology and developmental biology and the emerging fields of regenerative medicine (stem cell biology, tissue engineering, artificial organs, in vitro systems and transplantation biology). CTO offers a rapid and fair peer-review and exquisite reproduction quality. Special topic issues, entire issues of the journal devoted to a single research topic within the range of interests of the journal, are published at irregular intervals.

Selected contributions
- Chondroitin Sulfate Microparticles Modulate Transforming Growth Factor-β1-Induced Chondrogenesis of Human Mesenchymal Stem Cell Spheroids: Goude, M.C.; McDevitt, T.C.; Temenoff, J.S. (Atlanta, Ga.)
- Neuroprotective Effect of Didymin on Hydrogen Peroxide-Induced Injury in the Neuronal Membrane System: Morelli, S.; Pisconieri, A.; Salerno, S. (Rende); Al-Fageeh, M.B. (Riyadh); Drioli, E. (Rende/Seoul); De Bartolo, L. (Rende)
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