KIM-1 and NGAL are at present among the most frequently tested molecules in the clinical pursuit of biomarkers for the early diagnosis of acute kidney injury. Both molecules could be more reliable than the currently still accepted “gold standard” of the change in serum creatinine. NGAL is also a predictor of the iron status of the haemodialysis patient. Two original articles and an editorial comment address several aspects of these issues. See editorial comments by Waikar et al., pages 3263–3265, Bonventre, pages 3265–3268 and the original articles by Haase-Fielitz et al., pages 3349–3354 and Bolignano et al., pages 3398–3403

Among many other characteristics, the podocyte responds to insulin and glucose transport, which is dependent on nephrin expression. Current studies show that free fatty acids induce profound changes in cultured podocytes, including decreased insulin receptor, IRS1, PKB, and less translocation of GLUT4 to the cytoplasmic membrane. See original article by Lennon et al., pages 3288–3296 and editorial comment by Fogo, pages 3269–3270

Alterations of proteoglycans (PGs), including marked induction of versican with peritonitis and disappearance of decorin, are involved in peritoneal remodelling in PD patients. Versican expression was closely related to the appearance of myofibroblasts and macrophages. These observations suggest that the alteration of PG components following PD therapy and severe inflammation contribute to fibrous thickening of the peritoneum. See article by Osada et al., pages 3504–3512 and editorial comment by Fraser and Topley, pages 3271–3273

Multi-disciplinary predialysis education based on the NKF/DOQI guidelines in late-stage CKD patients is an independent prognostic factor in postdialysis outcome, along with age, diabetes, estimated GFR, and high—sensitivity CRP. However, does it work in all patients referred in a timely manner? See article by Wu et al., pages 3426–3433 and editorial comment by Van Biesen et al., pages 3277–3279

Atrial fibrillation is quite prevalent in patients with end-stage renal disease and is associated with significant risk for morbidity and mortality. The dilemma of prophylactic treatment of these patients with coumarins is still open. This pro/con debate offers well-balanced advice to the practicing nephrologist. See pro/con debate by Hörl, pages 3285–3287 and Krüger and Floege, pages 3284–3285

An elegant experimental paper provides evidence that hypoxia inhibits connective tissue growth factor (CTGF) synthesis in human proximal tubular epithelial cells, involving hypoxia-inducible factor-1 alpha. It is hypothesized that the reduced synthesis of the profibrotic factor CTGF may contribute to a potentially protective effect of hypoxic preconditioning in acute renal injury. See article by Kroening et al., pages 3319–3325

Osteoprotegerin (OPG) could play a key role in bone-vascular calcification imbalance and could also be a marker of vascular calcification extent and progression. This clinical study in 133 non-dialysed CKD patients at various stages of kidney disease reveals that an increase in coronary artery calcification (CAC) is strongly associated with plasma OPG increase in CKD patients. Values of OPG > 757.7 pg/mL allow us to predict the presence of CAC in these patients. See article by Morena et al., pages 3389–3397

The introduction of automated glomerular filtration rate reporting and renal indicators in the primary care quality and outcomes framework in the UK in 2006 have led to an increase in referral rate and age at referral without a significant change in reported comorbidity of the patients referred. The increase in referral rates was seen in more advanced CKD, suggesting a more targeted referral of patients with chronic kidney disease to renal services. See article by Hobbs et al., pages 3411–3419

Vascular endothelial growth factor (VEGF) was recently shown to predict survival in prevalent haemodialysis patients. Soluble VEGF receptors (sVEGFR) -1 and -2 are circulating endogenous modulators of VEGF activity. In this clinical study of sVEGFR-1 and -2 in CKD, novel associations between sVEGFRs and cardiac disease were discovered, whereby a high sVEGFR-1 was found to be an independent risk factor for all-cause mortality. See article by Guo et al., pages 3468–3473

Microcirculatory alterations, assessed by sublingual semi-quantitative microvascular flow index measurements, were tested in adult patients on haemodialysis. Sublingual microvascular perfusion is reduced by ultrafiltration and can be restored temporarily using auto transfusion by Trendelenburg positioning due to increased venous return. This methodology could become a useful bed-side tool to evaluate the patient’s (microvascular) volume status. See article by Bemelmans et al., pages 3487–3492