IN BRIEF

BIOMARKERS

Skin autofluorescence is associated with renal function and cardiovascular diseases in pre-dialysis chronic kidney disease patients

Tanaka, K. *et al. Nephrol. Dial. Transplant.* **26**, 214–220 (2011)

Tissue accumulation of advanced glycation end-products, which can be measured by skin autofluorescence, is thought to contribute to the progression of cardiovascular disease in patients with chronic kidney disease (CKD) on hemodialysis. This association has now been confirmed in 304 Japanese patients with CKD who were not on dialysis. The amount of skin autofluorescence correlated negatively with estimated glomerular filtration rates and correlated positively with history of cardiovascular disease.

GROWTH AND DEVELOPMENT

Increased protein intake augments kidney volume and function in healthy infants

Escribano, J. *et al. Kidney Int.* doi:10.1038/ki.2010.499

Researchers report that the protein content of infant feeding formula given in the first year of life affects renal function and kidney size. 601 healthy infants were randomly assigned (during the first 8 weeks of life) to be fed with either high-protein or low-protein formula, and were compared with 204 breast-fed infants. After 6 months, infants fed the high-protein formula had significantly larger kidney volumes, as measured with ultrasonography, and significantly higher serum urea levels and urea:creatinine ratios, than infants in the other two groups.

NEPHROTIC SYNDROME

Podocyte-secreted angiopoietin-like-4 mediates proteinuria in glucocorticoid-sensitive nephrotic syndrome

Clement, L. C. *et al. Nat. Med.* **17**, 117–122 (2011)

Animal studies indicate a key role for angiopoietin-like-4 (Angptl4) in glucocorticoid-sensitive nephrotic syndrome. In rat models of this disease, glomerular podocytes express high levels of Angptl4. High serum levels of this glycoprotein have also been detected in both humans with nephrotic syndrome and in animal models of minimal-change disease (a glucocorticoid-sensitive form of nephrotic syndrome). Transgenic animals engineered to overexpress Angptl4 in podocytes demonstrate albumin-specific, nephrotic-range proteinuria, loss of the glomerular basement membrane and foot process thinning, whereas rats engineered to express this glycoprotein in adipose tissue demonstrate high serum levels of Angptl4 without proteinuria or nephropathy. Interestingly, when transgenic rats were fed a diet containing a sialic acid precursor, increased sialylation of podocyte-derived Angptl4 was associated with a >40% decrease in albuminuria.