

## CHRONIC KIDNEY DISEASE

## Silent brain infarction and rapid decline of kidney function in patients with CKD: a prospective cohort study

Kobayashi, M. *et al.* *Am. J. Kidney Dis.* 56, 468–476 (2010)

Silent brain infarction (SBI) can predict progression of chronic kidney disease (CKD), according to researchers in Japan. Although a number of studies have reported that CKD is an independent risk factor for stroke, few data exist on whether cerebrovascular disease can predict decline in kidney function. Kobayashi and colleagues followed 142 patients with CKD for 2 years and found that SBI (present in 87 patients at baseline) was an independent predictor of doubling of serum creatinine level, need for dialysis, and death from cardiovascular causes. In addition, estimated glomerular filtration rate decreased more in patients with SBI than in those without.

## HYPERTENSION

## Hypervolemia is associated with increased mortality among hemodialysis patients

Agarwal, R. *Hypertension* 56, 512–517 (2010)

A study published in *Hypertension* shows that monitoring of relative plasma volume (RPV) can predict mortality in patients with chronic kidney disease (CKD). Agarwal's study included 308 patients on long-term hemodialysis followed up for a median of 30 months. During this time, 96 patients died; hypervolemia measured by the slope of RPV was found to be predictive of mortality, independently of cardiovascular risk factors including interdialytic ambulatory blood pressure, ultrafiltration rate and ultrafiltration volume. Neither ultrafiltration volume nor ultrafiltration rate index alone were predictive of all-cause mortality in this patient group.

## GENETICS

Genetic variants of the protein kinase C- $\beta$  1 gene and development of end-stage renal disease in patients with type 2 diabetes

Ma, R. C. W. *et al.* *JAMA* 304, 881–889 (2010)

Protein kinase C- $\beta$  (PKC- $\beta$ ) has been implicated in the development of diabetic microvascular complications, and data from animal studies indicate that this molecule has an important role in the pathogenesis of diabetic kidney disease. Ma *et al.* have now reported that genetic variants of the PKC- $\beta$  gene (*PRKCB1*) are independently associated with the development of end-stage renal disease (ESRD) in Chinese patients with type 2 diabetes. The researchers genotyped 18 single nucleotide polymorphisms spanning *PRKCB1* in 1,172 Chinese patients who had type 2 diabetes but no renal disease at baseline, and found four common variants that predicted development of ESRD over a mean follow-up of 7.9 years.