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IN BRIEF

DIALYSIS

Haemodialysis-associated cardiovascular risks revealed

Haemodialysis improves some aspects of cardiovascular health, but whether home (5–6 times per week) or in-centre (3 times per week) haemodialysis is more effective in this regard is unknown. The risk of hospitalization and mortality due to all causes were similar in patients receiving home ($n=3,480$) or in-centre ($n=17,400$) haemodialysis. The home haemodialysis group had significantly lower risk of hospitalization with cardiovascular disease, but significantly greater risk with infection, which suggests better prevention of infection is required in patients on home haemodialysis.

Original article Weinhandl, E. D. *et al.* Hospitalization in daily home hemodialysis and matched thrice-weekly in-center hemodialysis patients. *Am. J. Kidney Dis.* doi:10.1053/j.ajkd.2014.06.015

GENETICS

Rare mutations associated with chronic kidney disease

Through screening of 24 million different single nucleotide polymorphisms in a large Icelandic study population, previously unidentified mutations in three solute carrier genes (*SLC6A19*, *SLC25A45* and *SLC47A1*) and two E3 ubiquitin ligase genes (*RNF186* and *RNF128*) were found. Association studies with serum creatinine showed these mutations explained 0.5% of the variability in serum creatinine among Icelanders. Further analysis (15,594 cases and 291,428 controls) revealed that three of these variants were associated with chronic kidney disease.

Original article Sveinbjornsson, G. *et al.* Rare mutations associating with serum creatinine and chronic kidney disease. *Hum. Mol. Genet.* doi:10.1093/hmg/ddu399

POLYCYSTIC KIDNEY DISEASE

High-resolution ultrasonography improves cyst detection

Ultrasonography is currently used to diagnose autosomal dominant polycystic kidney disease, despite accuracy being limited in patients <30 years of age. A new study in 155 individuals showed that high-resolution ultrasonography achieved a diagnostic sensitivity of 97%. Use of high-resolution ultrasonography compared favourably with the reported 82% diagnostic sensitivity achieved with standard ultrasonography. This research suggests that high-resolution ultrasonography is comparable in sensitivity to MRI (which has 100% diagnostic sensitivity).

Original article Pei, Y. *et al.* Imaging-based diagnosis of autosomal dominant polycystic kidney disease. *J. Am. Soc. Nephrol.* doi:10.1681/ASN.2014030297

DIABETIC NEPHROPATHY

Nlrp3-inflammasome activated in diabetic nephropathy

Inflammation is an important, yet poorly understood cause of renal damage in diabetic nephropathy. Nlrp3-inflammasome activation has now been demonstrated in endothelial cells and podocytes from patients with diabetes *in vitro*, and in mouse models of diabetes. Nlrp3-inflammasome-mediated damage did not arise from circulating immune cells. *Nlrp3* or *CASP1* knock out and IL-1 receptor antagonism all protected against diabetic nephropathy in mouse models of diabetes. This research identifies several potential targets for diabetic nephropathy treatment.

Original article Shahzad, K. *et al.* Nlrp3-inflammasome activation in non-myeloid-derived cells aggravates diabetic nephropathy. *Kidney Int.* doi:10.1038/ki.2014.271