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IN BRIEF

END-STAGE RENAL DISEASE

Incidence and causes of ESRD among Canadian Aboriginals

Researchers have found that the incidence of end-stage renal disease (ESRD) is significantly higher among Aboriginal Canadians aged <22 years than among age-matched white individuals (incidence rate ratio 1.82 for Aboriginal boys and 3.24 for Aboriginal girls). Congenital disease was less common and glomerulonephritis was more common among Aboriginal ESRD patients aged <40 years than in their white counterparts. By contrast, diabetes was the most common cause of ESRD among Aboriginal individuals aged ≥40 years.

Original article Samuel, S. M. *et al.* Incidence and causes of end-stage renal disease among Aboriginal children and young adults. *CMAJ* doi:10.1503/cmaj.120427

HYPERTENSION

Smooth muscle cell mineralocorticoid receptors—role in blood pressure control and vascular ageing

A new study has found that mice lacking mineralocorticoid receptors (MRs) specifically in smooth muscle cells have decreased blood pressure as they age, in the absence of defects in renal sodium handling or vascular structure. These mice have reduced vascular myogenic tone, decreased expression and activity of L-type calcium channels, decreased oxidative stress, and reduced vascular contraction in response to the G-protein-coupled receptor agonists thromboxane and angiotensin II, together indicating a role for vascular MRs in blood pressure control and vascular ageing.

Original article McCurley, A. *et al.* Direct regulation of blood pressure by smooth muscle cell mineralocorticoid receptors. *Nat. Med.* doi:10.1038/nm.2891

GLOMERULAR DISEASES

MPO CD4⁺ T-cell epitope induces glomerulonephritis

A study has identified an immunodominant CD4⁺ T-cell epitope of myeloperoxidase (MPO) that induces focal necrotizing glomerulonephritis (FNGN) in immunized mice. Transfer of MPO_{409–428}-specific CD4⁺ T cells into mice induced FNGN when MPO was deposited in glomeruli by several mechanisms, including neutrophil recruitment by transfer of anti-MPO antibodies. The presence of MPO_{409–428} in glomeruli, with antigen-specific CD4⁺ T cells, led to functional injury. In addition, biologically active anti-MPO antibodies were detected in MPO_{409–428}-immunized mice.

Original article Ooi, J. D. *et al.* The immunodominant myeloperoxidase T-cell epitope induces local cell-mediated injury in antimyeloperoxidase glomerulonephritis. *Proc. Natl Acad. Sci. USA* doi:10.1073/pnas.1210147109

MINERAL METABOLISM

A tool to measure the propensity for calcification in serum

A nanoparticle-based test that measures the propensity for calcification to occur in serum may be useful for the investigation of biomineralization-related issues in clinical practice, say researchers. Pasch *et al.* developed an assay to measure the conversion of primary calciprotein particles (CPPs) to secondary CPPs, as a measure of the intrinsic capacity of serum to inhibit the precipitation of calcium and phosphate. Using their test, the researchers showed that sera from fetuin-A-deficient mice and haemodialysis patients have a reduced ability to inhibit calcification.

Original article Pasch, A. *et al.* Nanoparticle-based test measures overall propensity for calcification in serum. *J. Am. Soc. Nephrol.* doi:10.1681/ASN.2012030240