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IN BRIEF

RISK FACTORS

Carbamylated albumin—a modifiable risk factor in ESRD?

Carbamylated serum albumin is a risk factor for mortality in patients with end-stage renal disease (ESRD), which may be modifiable with amino acid therapy, according to new research. Urea is known to promote the carbamylation of proteins, including human albumin. Berg *et al.* found that the proportion of carbamylated serum albumin was twice as high in patients with ESRD than in non-uraemic individuals, and was higher in ESRD patients who died within 1 year than in those who lived longer. *In vitro*, certain amino acids inhibited the carbamylation of albumin by cyanate.

Original article Berg, A. H. *et al.* Carbamylation of serum albumin as a risk factor for mortality in patients with kidney failure. *Sci. Transl. Med.* 5, 175ra29 (2013)

PODOCYTE BIOLOGY

Mechanism of HIV effects on the podocyte actin cytoskeleton

New research has found that HIV infection might compromise the integrity of the podocyte actin cytoskeleton by mechanisms involving downregulation of the vitamin D receptor (VDR). In HIV-transduced human podocytes, Chandel *et al.* found that expression of the VDR was downregulated whereas the expression of renin and production of angiotensin II was upregulated, indicating activation of the renin–angiotensin system. HIV infection also resulted in the cytosolic accumulation of cathepsin L—an effect that was attenuated by vitamin D or losartan.

Original article Chandel, N. *et al.* HIV compromises integrity of podocyte actin cytoskeleton through down regulation of vitamin D receptor. *Am. J. Physiol. Renal Physiol.* doi:10.1152/ajprenal.00717.2012

DIALYSIS

Effect of far infrared therapy on AVF maturation

A nonblinded, randomized study has found that far infrared therapy improves access flow, maturation, and patency of newly created arteriovenous fistulas (AVFs) in patients with chronic kidney disease. Lin *et al.* randomly allocated 122 patients to receive 12 months of infrared therapy or no infrared therapy. Compared with controls, fewer patients in the intervention group experienced the primary outcome of AVF malfunction within 12 months (29% versus 12%; $P=0.02$). Patients in the intervention group also had higher AVF access blood flow and higher rates of AVF maturation.

Original article Lin, C. C. *et al.* Effect of far infrared therapy on arteriovenous fistula maturation: an open-label randomized controlled trial. *Am. J. Kidney Dis.* doi:10.1053/j.ajkd.2013.01.015

LUPUS NEPHRITIS

Urinary CD4⁺ T cells—a marker of proliferative lupus nephritis

Urinary CD4⁺ T cells are a sensitive and specific marker for the detection of proliferative lupus nephritis in patients with systemic lupus erythematosus (SLE), say researchers. Enghard *et al.* used flow cytometry to quantify urinary CD3⁺CD4⁺ T cells from 147 patients with SLE. High numbers of CD4⁺ T cells were observed only in patients with active lupus nephritis. Normalization of urinary CD4⁺ T cell counts were indicative of lower disease activity whereas high counts were indicative of worse outcomes.

Original article Enghard, P. *et al.* Urinary CD4 T cells identify SLE patients with proliferative lupus nephritis and can be used to monitor treatment response. *Ann. Rheum. Dis.* doi:10.1136/annrheumdis-2012-202784