

## IN BRIEF

 MICROBIOLOGY**Altered gut microbiota in CKD**

The effects of synbiotic therapy on serum levels of microbiome-generated uraemic toxins have been assessed in a new study involving predialysis patients with chronic kidney disease (CKD). Data from the SYNERGY trial found that a 6 week prebiotic and probiotic therapeutic protocol favourably modified the stool microbiome in the 31 patients who completed the study, with enrichment of *Bifidobacterium* and depletion of *Ruminococcaceae*. Decreased serum levels of the toxin p-cresyl sulfate, but not indoxyl sulfate, were observed.

**ORIGINAL ARTICLE** Rossi, M. *et al.* Synbiotics easing renal failure by improving gut microbiology (SYNERGY): A randomized trial. *Clin. J. Am. Soc. Nephrol.* <http://dx.doi.org/10.2215/CJN.05240515>

 HYPERTENSION**Blood pressure lowering after lacunar stroke**

An analysis of >2,500 patients from the SPS3 randomized trial who experienced a lacunar stroke but maintained kidney function has found that intensive blood pressure (BP) lowering (<130 mmHg) is associated with an increased risk of accelerated decline in renal function compared to standard BP control (130–140 mmHg). Peralta *et al.* observed that the rate of estimated glomerular filtration rate decline was fastest during the first year of anti-hypertensive treatment, affecting 24% of those in the intensive BP group compared to 19% in the standard BP group. This rapid decline was not associated with a higher risk of clinical events in the intensive BP group.

**ORIGINAL ARTICLE** Peralta, C. A. *et al.* The effect of intensive versus usual blood pressure control on kidney function among persons with prior lacunar stroke: a post-hoc analysis of the SPS3 randomized trial. *Circulation* <http://dx.doi.org/10.1161/CIRCULATIONAHA.115.019657>

 CHRONIC KIDNEY DISEASE**Proton pump inhibitors increase risk of CKD**

Proton pump inhibitor (PPI) use is associated with incident chronic kidney disease (CKD), according to new findings. Lazarus and *et al.* studied the effects of PPIs in 10,484 participants of the Atherosclerosis Risk in Communities study, and found that twice-daily PPI dosing was associated with a higher risk of CKD than once-daily dosing. As PPIs are one of the most commonly used drugs worldwide, the researchers propose that future studies should investigate whether limiting PPI use will reduce the incidence of CKD.

**ORIGINAL ARTICLE** Lazarus, B. *et al.* Proton pump inhibitor use and the risk of chronic kidney disease. *JAMA Intern. Med.* <http://dx.doi.org/10.1001/jamainternmed.2015.7193>

 AUTOIMMUNITY**Mitochondrial function in autoimmune disorders**

New research has helped unravel a link between mitochondria, neutrophil extracellular traps (NETs), and inflammation in autoimmune disorders. Lood *et al.* found that mitochondrial reactive oxygen species (ROS) could stimulate NETosis after mitochondrial activation by ribonucleoprotein immune complexes. Immune complex stimulation precipitated a release of oxidized mtDNA, which triggered interferon signalling and an immune response. This response could be ameliorated through inhibition of ROS production. ROS was also required for NETosis of low-density granulocytes found in patients with systemic lupus erythematosus.

**ORIGINAL ARTICLE** Lood, C. *et al.* Neutrophil extracellular traps enriched in oxidized mitochondrial DNA are interferogenic and contribute to lupus-like disease. *Nat. Med.* <http://dx.doi.org/10.1038/nm.4027>