Nature Reviews Nephrology | Published online 3 May 2016

IN BRIEF

TRANSPLANTATION

Females hold the key to ischaemia tolerance

Females have an increased capacity to recover from ischaemia–reperfusion injury (IRI) compared to males, according to new research. Female mice deficient in the estrogen receptor displayed exacerbated renal IRI, but mice that received supplemental estrogen were protected. This sex-specific difference was also implied from analysis of data from the United Network for Organ Sharing database, which indicated a greater association with delayed graft function in males compared to females. The researchers propose that estrogen might have therapeutic potential to improve IRI tolerance.

ORIGINAL ARTICLE Aufhauser Jr., D. D, *et al.* Improved renal ischemia tolerance in females influences kidney transplantation outcomes. *J. Clin. Invest.* http://dx.doi.org/10.1172/jci84712 (2016)

GLOMERULAR DISEASE

MDM2 — a novel target in glomerulonephritis

Murine double minute 2 (MDM2) is an E3 ubiquitin ligase involved in NF-κB signalling and negatively regulates *TP53*-mediated cell cycle arrest and cell death. Now, a new study shows that blockade of MDM2 with nutlin-3a can ameliorate crescentic glomerulonephritis, and MDM2 inhibition in *Trp53*-deficient mice has a protective effect. Both pre-emptive and delayed administration of nutlin-3a in mice with established glomerulonephritis were equally effective at abrogating crescentic glomerulonephritis, and might, therefore, be a potential novel therapeutic strategy in affected patients.

ORIGINAL ARTICLE Mulay, S. R. *et al.* Murine double minute-2 inhibition ameliorates established crescentic glomerulonephritis. *Am. J. Pathol.* http://dx.doi.org/10.1016/j.ajpath.2016.01.017 (2016)

ANAEMIA

REPCs are derived from FOXD1 progenitors

Prolyl-4-hydroxylase domain (PHD) dioxygenases are oxygen sensors that regulate hypoxia-inducible factor 2 (HIF-2) and erythropoietin (EPO) production. Now, researchers have shown that renal EPO-producing cells (REPCs) are derived from FOXD1-expressing cells and consist of various subpopulations that are heterogeneous in their response to *Phd2* inactivation, regulation of HIF-2 activity, and EPO production. Mouse genetic studies showed that PHD2 is the main regulator of REPC plasticity, which the researchers suggest could be of clinical relevance.

ORIGINAL ARTICLE Kobayashi, H. *et al.* Distinct subpopulations of FOXD1 stroma-derived cells regulate renal erythropoietin. *J. Clin. Invest.* http://dx.doi.org/10.1172/JCI83551 (2016)

STEM CELLS

RAAS inhibition promotes podocyte replacement

A new study finds that inhibition of the renin–angiotensin–aldosterone system (RAAS) during focal segmental glomerulosclerosis (FSGS) augments the ability of cells of renin lineage (CoRL) to proliferate and differentiate into podocytes. Stuart Shankland *et al.* permanently labelled CoRL in mice and then experimentally induced FSGS. RAAS inhibition with an angiotensin-receptor blocker resulted in increased CoRLs in the juxtaglomerular compartment, which migrated to the intraglomerular compartment and trans-differentiated into cells with phenotypes consistent with podocytes.

ORIGINAL ARTICLE Shankland, S. J. *et al.* Renin-angiotensin-aldosterone system inhibition increases podocyte derivation from cells of renin lineage. *J. Am. Soc. Nephrol.* http://dx.doi.org/10.1681/ASN.2015080877 (2016)