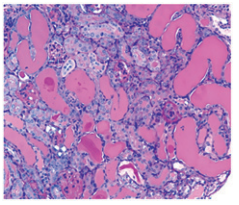
This Month's Highlights

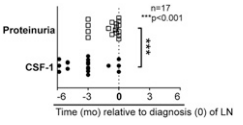
BASIC RESEARCH

Characterization of Renal F4/80$^+$CD11c$^+$ Mononuclear Phagocytes



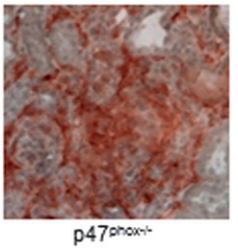
The phenotype and function of renal mononuclear phagocytes (rMPs) expressing markers of both macrophages (F4/80) and dendritic cells (CD11c) are undefined. In this issue, Cao *et al.* report that F4/80$^+$CD11c$^+$ rMPs account for nearly half of all renal rMPs in healthy mice and in mice with adriamycin nephropathy. Notably, the morphology and antigen-presenting ability of these cells are characteristic of macrophages. In diseased mice, renal F4/80$^+$CD11c$^+$ rMPs express M1 macrophage markers and exacerbate adriamycin-induced renal injury upon adoptive transfer. These findings emphasize a need for caution in identifying macrophages and dendritic cells on the basis of cell surface markers. *See Cao et al., pages* 349–363.

Predictive Biomarker for Lupus Nephritis



Biomarkers to detect lupus nephritis (LN) before renal damage is evident are needed. Menke *et al.* investigated whether circulating colony-stimulating factor-1 (CSF-1) could serve as such in a retrospective study. They report that elevated levels of serum or urine CSF-1 correlate with increased expression of intrarenal CSF-1, macrophage infiltration, kidney histopathology, and clinical disease activity in patients with SLE and LN. Their additional findings suggest that monitoring circulating CSF-1 levels may allow more accurate prediction of LN onset and recurrence and should be tested in a larger prospective trial. *See Menke et al., pages* 379–389.

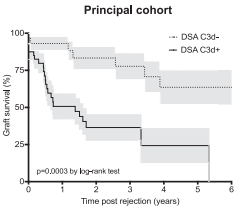
Protective Effects of Phagocyte NADPH Oxidase-Induced Reactive Oxygen Species



What is the role of phagocyte NADPH oxidase (phox)-induced reactive oxygen species in ANCA-mediated endothelial damage? Here, Schreiber *et al.* show that, in mice with antimyeloperoxidase antibody-induced necrotizing crescentic GN, phox deficiency enhances monocyte influx, increases renal IL-1β production, and exacerbates disease in a caspase-1-dependent manner. *In vitro*, antimyeloperoxidase antibody induces more caspase-1 activity and IL-1β production in phox-deficient monocytes than in wild-type cells. These results indicate phox-induced reactive oxygen species protect against ANCA-mediated inflammation and suggest the IL-1 receptor as a potential therapeutic target. *See Schreiber et al., pages* 411–424.

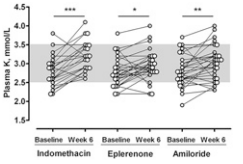
CLINICAL RESEARCH

C3d-Binding Donor-Specific Antibodies Predict Allograft Loss



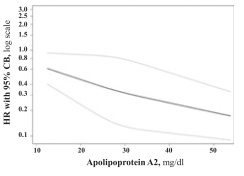
Reliable assays are needed to identify patients at risk of kidney graft loss upon diagnosis of antibody-mediated rejection. Using sera obtained from 69 recipients at the time of allograft biopsy, Sicard *et al.* evaluated donor-specific antibody (DSA) binding to complement components for risk stratification of allograft loss. Their multivariate analysis revealed the presence of C3d-binding DSA, but not C1q-binding DSA or C4d graft deposition, as an independent predictor of allograft loss. These data suggest a novel method for risk stratification and reveal a potential therapeutic strategy for patients at risk of allograft loss due to antibody-mediated rejection. *See Sicard et al., pages* 457–467.

Evaluating Treatments for Gitelman Syndrome



Evidence supporting current treatment options for Gitelman syndrome is lacking. Blanchard *et al.* conducted an open-label, randomized, crossover study comparing short-term treatment with slow-release indomethacin, amiloride, or eplerenone in 30 patients with type I Gitelman syndrome also receiving oral potassium and magnesium supplementation. The authors report each drug partially corrects hypokalemia, although indomethacin has the greatest efficacy. Indomethacin causes gastrointestinal intolerance in 20% of patients and decreases eGFR, whereas amiloride and eplerenone increase sodium depletion. Long-term studies should be undertaken to fully evaluate these drugs. *See Blanchard et al., pages* 468–475.

HDL Cholesterol and Outcomes in Hemodialysis Patients



Do high HDL concentrations predict cardiovascular risk or all-cause mortality in patients receiving hemodialysis? Silbernagel *et al.* conducted a *post hoc* analysis of data from the German Diabetes Dialysis (4D) study and found that baseline concentrations of HDL cholesterol did not associate with either outcome in 1255 participants over the mean follow-up of 3.9 years. However, multivariate analyses revealed a possible inverse association between apoA2 and the risk of all-cause mortality. These data provide further insight into the role of HDL in chronic hemodialysis and highlight the need for additional studies. *See Silbernagel et al., pages* 484–492.