**RAPID COMMUNICATION**

**Anti-Peroxidasin Autoantibodies in Pulmonary-Renal Syndromes**

Pulmonary-renal syndromes, including Goodpasture syndrome (GP) and ANCA-associated vasculitis, are rapidly progressive glomerulonephritides. In this study, McCall et al. describe the discovery of an inhibitory anti-peroxidasin autoantibody that is present before and at the time of clinical GP presentation. *In vitro*, this antibody inhibits a critical step in the formation of sulfilimine crosslinks in the collagen IV autoantigen; disruption of these crosslinks is thought to enable recognition by autoantibodies in GP. The anti-peroxidasin antibodies are specific for peroxidasin but were also present in some patients with anti-myeloperoxidase ANCA vasculitis, and are associated with more active disease. Investigation of these antibodies may inform disease pathogenesis and improve classification and prognostication in some patients. See McCall et al., pages 2619–2625.

**BASIC RESEARCH**

**Platelet Microparticles and Diabetic Nephropathy**

Microparticles released from activated platelets have emerged as a novel regulator of vascular dysfunction. Zhang et al. show that increased levels of circulating platelet microparticles in diabetes induced production of reactive oxygen species, decreased nitric oxide, inhibited the activities of endothelial nitric oxide synthase and superoxide dismutase, increased the permeability of the glomerular endothelial barrier, and reduced the thickness of endothelial surface layer; the microparticles also can add to glomerular endothelial injury by releasing the chemokine CXCL7. This points to CXCL7 as a potential therapeutic target for treatment of early diabetic nephropathy. See Zhang et al., pages 2671–2695.

**CLINICAL EPIDEMIOLOGY**

**TNFR-1 and Long-Term Kidney Function**

Studies previously showed that among persons with established kidney disease, serum levels of soluble tumor necrosis factor-1 (sTNFR-1) are associated with kidney disease progression. Bhatraju et al. found that in a multiethnic population without cardiovascular disease at enrollment, elevated baseline sTNFR-1 concentrations were strongly associated with a ≥40% decline in eGFR over a decade. Their findings suggest that a high sTNFR-1 concentration, independent of previously known risk factors for kidney disease progression, predicts kidney function decline in a multiethnic population with few comorbidities. See Bhatraju et al., pages 2713–2721.

**CLINICAL RESEARCH**

**Ultrasound Prediction of AVF Maturation**

The utility of early postoperative ultrasound measurements in predicting arteriovenous fistula (AVF) clinical maturation is uncertain. In a large multicenter prospective cohort, Robbin et al. found that 6-week ultrasound measurements of AVF flow blood, diameter, and depth moderately predicted unassisted and overall AVF clinical maturation. Ten demographic and clinical factors analyzed did not further improve prediction. The models quantify and confirm prior clinical beliefs and may assist prediction of AVF clinical maturation. See Robbin et al., pages 2735–2744.

**Spar Bentan to Treat FSGS**

Currently, no US Food and Drug Administration-approved therapies are available for the treatment of primary FSGS. Trachtman et al. report findings from a phase 2 randomized clinical trial comparing sparsentan, a dual endothelin type A and angiotensin II type 1 (AT1) receptor antagonist, with irbesartan, an AT1 receptor blocker, in patients with primary FSGS. Patients achieved significantly greater reductions in proteinuria with sparsentan compared with irbesartan over 8 weeks, without an increase in adverse events. This suggests that sparsentan may provide a new therapeutic option for reduction in proteinuria in patients with primary FSGS. See Trachtman et al., pages 2745–2754.

**Empaglifozin and Kidney Function Decline**

Findings reported in 2015 from the EMPA-REG OUTCOME trial showed that empagliflozin, a selective sodium-glucose cotransporter-2 inhibitor, improves glycemic control and reduces the risk of cardiovascular death in patients with type 2 diabetes and established cardiovascular disease. Results from the trial also suggest that empagliflozin slows CKD progression. In this article, Wanner et al. present the prespecified eGFR slope analysis from the trial and investigators’ evaluation of kidney function changes over time, findings that support a hemodynamic effect of empagliflozin that may lead to reductions in intraglomerular pressure. During chronic maintenance treatment, this response to empagliflozin may translate into long-term preservation of kidney function. Their data also show the utility of slope analysis as an emerging endpoint of CKD progression in clinical research. See Wanner et al., pages 2755–2769.

This Month’s Highlights