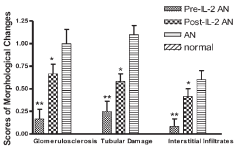
This Month's Highlights

BRIEF COMMUNICATION

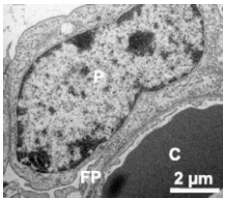
Inducing Treg Expansion Treats Proteinuric CKD



Regulatory T cells (Tregs) suppress inflammatory responses, suggesting that inducing the expansion of this subset of cells may abrogate renal disease. Polhill *et al.* report that administering IL-2 complexed to an IL-2 monoclonal antibody promotes the expansion of Tregs in a mouse model of proteinuric kidney disease. They found that mice injected with these complexes, before or after the induction of injury, exhibit improved renal function, less histologic renal injury, and attenuation of proinflammatory responses. These observations provide proof-of-concept that *in vivo* expansion of Tregs may be a viable therapy for proteinuric CKD. *See Polhill et al., pages* 1303–1308.

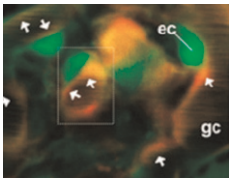
BASIC RESEARCH

Sialylation Critical for Glomerular Development



There is increasing recognition for functional roles of sialoglycoconjugates on cell surfaces, but their contribution to kidney biology is not well understood. Weinhold *et al.* genetically engineered mice with markedly reduced ability to form these structures and found that they die within 3 days after birth from kidney failure accompanied by massive proteinuria and a podocyte ultrastructure resembling patients with Finnish-type congenital nephrotic syndrome. Prevention of sialylation of nephrin and podocalyxin in the maturing podocyte appears responsible. These data suggest a critical role for sialylation during glomerular development. *See Weinhold et al., pages* 1319–1328.

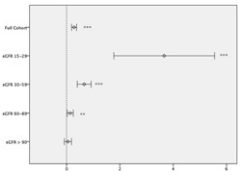
Defective Endothelial Surface Contributes to Proteinuric CKD



Why do vascular dysfunction and albuminuria commonly occur together? Salmon *et al.* investigated whether defects in the endothelial surface layer (ESL), a complex meshwork including glycosaminoglycans and proteoglycans, may provide a mechanistic explanation. Using a rat model of spontaneous albuminuria, they found that aging rats lose the ESL throughout the vasculature in parallel to increases in water and albumin permeability. Furthermore, exogenous modification of the ESL can improve glomerular albumin permeability. These data suggest that the disruption of the ESL contributes to both systemic endothelial dysfunction and albuminuria, providing another potential therapeutic target for CKD. *See Salmon et al., pages* 1339–1350.

CLINICAL EPIDEMIOLOGY

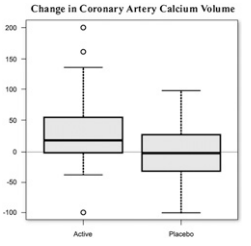
CKD and Off-Pump CABG



Randomized trials suggest benefits of using off-pump techniques during coronary artery bypass grafting (CABG), but whether pump status affects outcomes for patients with pre-existing CKD is unknown. Chawla *et al.* retrospectively studied outcomes from nearly 750,000 CABG cases and found that, compared with on-pump CABG, off-pump CABG associated with reduced risk for the composite outcome of in-hospital death or renal replacement therapy (RRT), especially among those with the lowest preoperative renal function. Pending randomized trials in this population, these data suggest that patients with CKD who require CABG may benefit from off-pump techniques. *See Chawla et al., pages* 1389–1397.

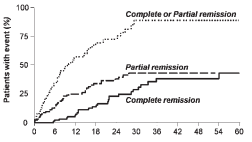
CLINICAL RESEARCH

Phosphate Binders in CKD May Lower Phosphate but Increase Vascular Calcification



The effects of phosphate binders on mineral metabolism and vascular calcification among patients with moderate to advanced CKD are not well established. Block *et al.* randomly assigned 148 patients with estimated GFR 20-45 mL/min per 1.73 m^2 to placebo or one of three binders. Overall, phosphate binders reduced serum phosphate 0.2 mg/dl more than placebo during 9 months, on average, and also attenuated the progression of secondary hyperparathyroidism. Treatment with binders, however, significantly increased calcification of the coronary arteries and abdominal aorta. The net clinical benefit of these therapies in CKD remains uncertain. *See Block et al., pages* 1407–1415.

Rituximab for Idiopathic Membranous Nephropathy



Persistent nephrotic syndrome in idiopathic membranous nephropathy (IMN) is a clinical challenge. In this issue, Ruggenenti *et al.* describe their experience treating a cohort of 100 such patients with rituximab. During a median follow-up of 29 months after first dose, 65 patients achieved complete or partial remission. Four patients died and four progressed to ESRD during follow-up. Baseline levels of proteinuria and the duration of follow-up each predicted the reduction in proteinuria. Although an uncontrolled trial, the authors consider the outcomes better than expected based on historical controls, suggesting that rituximab may benefit patients with IMN. *See Ruggenenti et al., pages* 1416–1425.