Minimally sufficient numbers of measurements for validation of 24-hour blood pressure monitoring in chronic kidney disease

The number of readings needed from ambulatory blood pressure monitoring to diagnose hypertension or determine adequacy of blood pressure control, is largely based on opinion and is not consistent among major guidelines. To address this issue empirically, Agarwal and Tu examined 24-hour ambulatory blood pressure data from 360 individuals who had chronic kidney disease and hypertension, and 38 healthy controls. Almost all were white males. They determined that 15 randomly selected or 40 serial recordings of systolic or diastolic blood pressure taken over a 24-hour period is sufficient to accurately evaluate blood pressure control. A mean of 26 random measurements provides 95% confidence that readings are within 5 mm Hg and 3.5 mm Hg of the true systolic and diastolic blood pressure, respectively. These data may be used in designing guidelines, following patients, and establishing clinical trial endpoints. See page 1199

An open-label randomized controlled trial of low-dose corticosteroid plus enteric-coated mycophenolate sodium versus standard corticosteroid treatment for minimal change nephrotic syndrome in adults (MSN Study)

High-dose corticosteroids are the standard-of-care for children and adults with minimal change nephrotic syndrome (MCNS) but they are associated with significant adverse side effects. Rémy and colleagues in France conducted an open-label, multi-center, randomized trial to compare standard treatment (prednisone 1 mg/kg/d) to low-dose prednisone (0.5 mg/kg/d) plus enteric-coated mycophenolate sodium (EC-MPS) in adults who had biopsy-proven MCNS. The primary endpoint of this study was complete remission at 4 weeks. Unfortunately, complete remissions did not differ between study arms at 4 weeks. In the control group, 58% of patients remitted, whereas in the EC-MPS group, 65% remitted ($P = 0.44$). Of these complete responders, 23% later relapsed, with similar relapse rates between groups. Importantly, there were no differences in adverse events between study arms. Although this study did not demonstrate superiority of EC-MPS, it does suggest an alternate regimen for individual patients for whom using less corticosteroid may be particularly desirable. See page 1217

CD8$^+$ T cells modulate autosomal dominant polycystic kidney disease progression

Therapy of autosomal dominant polycystic kidney disease (ADPKD) has largely focused on retarding dysregulated cyst growth. Kleczko and colleagues demonstrated that targeting the immune system in ADPKD may be an alternative approach to treatment. Using the homozygous Pkd1 mouse model of polycystic kidney disease, these investigators showed that, over time, T cells infiltrate the kidneys and tend to surround cysts. The number of these immune infiltrates increases with disease duration. CD4 and CD8 T cells are present, but CD8 seem to be more activated. The degree of T cell infiltration correlates with disease severity, and cyst epithelium appears to produce chemokines capable of recruiting T cells to the kidney. Most importantly, elimination of CD8 T cells enhanced cyst progression and renal fibrosis. These data suggest that activating intra-renal CD8 T cells may be a future option for slowing progression of ADPKD. See page 1127