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GLOMERULAR DISEASE

Association of FSGS histologic variants with patient outcomes

Renal biopsy samples from patients with focal segmental glomerulosclerosis (FSGS) can be classified as FSGS not otherwise specified (NOS), collapsing, tip, perihilar or cellular histologic subtypes. An association between these subtypes and renal outcomes has been shown in retrospective studies. A new prospective study from the FSGS Clinical Trial now shows a correlation between histologic variants and clinical outcomes in patients with steroid-resistant primary FSGS.

To investigate the potential association between FSGS histologic variants, renal presentations and outcomes, renal biopsy samples from 138 patients aged 2–38 years with steroid-resistant primary FSGS who were randomly assigned to receive a 12-month course of either ciclosporin or mycophenolate mofetil and dexamethasone were analysed. 68% of biopsy samples were classifed as NOS, 12% as collapsing, 10% as tip, 7% as perihilar and 3% as cellular variants. NOS was the most common variant in all age groups. At enrollment, 47% of patients with the NOS variant were children (aged 2–12 years), 29% were teenagers and 24% were adults. By contrast, tip or collapsing variants were more common in adults and teenagers (33%) than in children (10%). The majority (86%) of patients with the tip variant were white, whereas the collapsing variant was strongly associated with black race (63%, $P = 0.03$).

Analysis of clinical and biopsy characteristics showed that patients with collapsing FSGS had the highest serum creatinine levels ($P = 0.003$) and pathological injury scores ($P = 0.003$) as well as the heaviest proteinuria at baseline. They also had a higher rate of disease progression than patients with the other variants; at 3-year follow-up, 47% of patients with the collapsing variant developed end-stage renal disease (ESRD) compared with 20% of those with NOS and 7% of those with the tip variant ($P = 0.005$). The risk of ESRD associated with these variants was not altered by treatment assignment.

The authors conclude that, in patients with steroid-resistant primary FSGS, the tip variant is associated with the best and the collapsing variant with the worst renal survival. They state that their findings support histologic classification to distinguish patients with NOS, collapsing and tip variants of primary FSGS and suggest that longer follow-up is required to investigate whether these variants are associated with even greater differences in patient outcomes than could be determined in the present study.

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Original article D'Agati, V. D. *et al*. Association of histologic variants in FSGS clinical trial with presenting features and outcomes. *Clin. J. Am. Soc. Nephrol*. doi:10.2215/CJN.06100612