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APOL1 risk variants predict histopathology and progression to ESRD in HIV-related kidney disease

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With earlier institution of antiretroviral therapy, kidney diseases other than HIV-associated nephropathy (HIVAN) predominate in HIV-infected persons. Outcomes for these diseases are typically worse among those infected with HIV, but the reasons for this are not clear. Here, we examined the role of APOL1 risk variants in predicting renal histopathology and progression to ESRD in 98 HIV-infected African Americans with non-HIVAN kidney disease on biopsy. We used survival analysis to determine time to ESRD associated with APOL1 genotype. Among the 29 patients with two APOL1 risk alleles, the majority (76%) had FSGS and 10% had hypertensive nephrosclerosis. In contrast, among the 54 patients with one APOL1 risk allele, 47%had immune-complexGNas the predominant lesion and only 23%had FSGS. Among the 25 patients with no APOL1 risk allele, 40%had immune-complex GN and 12%had FSGS. In 310 person-years of observation, 29 patients progressed to ESRD. In adjusted analyses, individuals with two APOL1 risk alleles had a nearly three-fold higher risk for ESRD compared with those with one or zero risk alleles (P=0.03). In summary, these data demonstrate an association between APOL1 variants and renal outcomes in non-HIVAN kidney disease, suggesting a possible use for APOL1 genotyping to help guide the care of HIV-infected patients.

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