Role of MYH9 and APOL1 in African and non-African populations with lupus nephritis.

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Abstract
Systemic lupus erythematosus (SLE) is a complex autoimmune disease characterized by autoantibody production and organ damage. Lupus nephritis (LN) is one of the most severe manifestations of SLE. Multiple studies reported associations between renal diseases and variants in the non-muscle myosin heavy chain 9 (MYH9) and the neighboring apolipoprotein L 1 (APOL1) genes. We evaluated 167 variants spanning MYH9 for association with LN in a multiethnic sample. The two previously identified risk variants in APOL1 were also tested for association with LN in European-Americans (EAs) (N = 579) and African-Americans (AAs) (N = 407). Multiple peaks of association exceeding a Bonferroni corrected P-value of P < 2.03 × 10(-3) were observed between LN and MYH9 in EAs (N = 4620), with the most pronounced association at rs2157257 (P = 4.7 × 10(-4), odds ratio (OR) = 1.205). A modest effect with MYH9 was also detected in Gullah (rs8136069, P = 0.0019, OR = 2.304). No association between LN and MYH9 was found in AAs, Asians, Amerindians or Hispanics.
This study provides the first investigation of MYH9 in LN in non-Africans and of APOL1 in LN in any population, and presents novel insight into the potential role of MYH9 in LN in EAs.

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