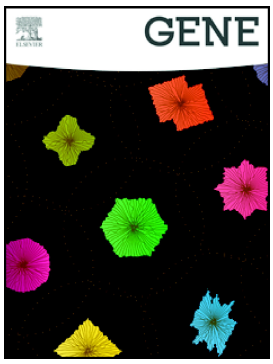

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Association of TNFAIP3 and TNIP1 polymorphisms with systemic lupus erythematosus risk: a meta-analysis

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Abstract

Object: With the development of GWAS, both TNFAIP3 and TNIP1 were revealed to be susceptibility genes of SLE. However, some other studies revealed no association between TNFAIP3, TNIP1 and SLE susceptibility. In order to estimate such association more precisely and systemically, a meta-analysis was conducted.

Method: Studies on the association between TNFAIP3 rs2230926, TNIP1 rs7708392 and SLE risk were carefully selected via searching 3 databases (Pubmed, Embase, and Web of Science). A fixed- or random-effect model was used according to the heterogeneity, and a subgroup analysis by ethnicity was also performed.

Results: 26 studies from 18 articles involving a total of 21372 patients and 30165 controls were analyzed for TNFAIP3 rs2230926. A significant association between the minor G allele of TNFAIP3 rs2230926 and SLE risk was found via a random-effect model (OR=1.643, 95% CI= (1.462, 1.847), p<0.01). In the subgroup analysis by ethnicity, significant correlations were also found in all Caucasians, Asians, and Africans (OR=1.675, 95% CI= (1.353, 2.074), p<0.01; OR=1.738, 95% CI= (1.557, 1.940), p<0.01; OR=1.324, 95% CI= (1.029, 1.704), p<0.05). As for TNIP1 rs7708392, 21 studies from 12 articles involving 24716 cases and 32200 controls were analyzed. A significant association of the minor C allele of TNIP1 rs7708392 and SLE risk was found via a random-effect model (OR=1.247, 95% CI= (1.175, 1.323), p<0.01). In the subgroup analysis by ethnicity, significant correlations were found in Caucasians, and Africans (OR=1.317, 95% CI= (1.239, 1.401), p<0.01; OR=1.210, 95% CI= (1.108, 1.322), p<0.01). However, there was no significant association in Asians (OR=1.122, 95% CI= (0.953, 1.321), p>0.05).

Conclusion: The minor G allele of TNFAIP3 rs2230926 was associated with increased risk of SLE in all Caucasians, Asians, and Africans. The minor C allele of TNIP1 rs7708392 was associated with the increased risk of SLE in Caucasians and Africans, while it was not associated with SLE susceptibility in Asians.

Key words

Systemic lupus erythematosus; TNFAIP3; TNIP1; Polymorphisms; NF-kB.

Introduction

Systemic lupus erythematosus (SLE), a systemic chronic autoimmune disease with highly potential morbidity and mortality, is characterized by abnormal immune cell activation and autoantibody production (Rahman and Isenberg, 2008) that result in deposition of immune complexes, activation of complementary, and injury of