Background and aims The role of CCR5Δ32(rs333) polymorphism in the pathogenesis of systemic lupus erythematosus (SLE) has been evaluated worldwide. The aim of this study was to determine the association between CCR5Δ32 polymorphism with the susceptibility to SLE and the activity of disease in female Southern Brazilian patients.

Methods The study enrolled 169 female SLE patients and 132 unrelated female healthy individuals. Baseline clinical, laboratorial characteristics, and the SLE activity (determined using the SLEDAI) were evaluated according to the CCR5Δ32 genotypes. The CCR5Δ32 polymorphism was determined from genomic DNA using a polymerase chain reaction.

Results The frequencies of the genotypes CCR5/CCR5, CCR5/CCR5Δ32 and CCR5Δ32/CCR5Δ32 were 87.6%, 11.8%, and 0.6%, respectively, among the patients, and 96.2%, 3.8%, and 0.0%, respectively among the controls, [p = 0.0116, odds ratio: 3.432 (95% confidence interval: 1.252–9.40)]. Patients carrying the CCR5/CCR5Δ32 and CCR5Δ32/CCR5Δ32 genotypes presented earlier age of onset of disease (p = 0.0293) and higher levels of anti-dsDNA (p = 0.0255), than those carrying the wild type genotype. When the analysis was adjusted for ethnicity, only the age at onset of disease remained associated with the CCR5Δ32 polymorphism (p < 0.05); patients with variant CCR5Δ32 allele (heterozygous and homozygous), presented lower age at onset of disease than those with the wild type genotype.

Conclusions The results suggest that the CCR5Δ32 polymorphism might be associated with SLE genetic predisposition among female Brazilian patients and the age at onset of the disease; however, this genetic variant was not associated with the activity of SLE in this population.