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THE DISSOCIATION BETWEEN CCR5Δ32 POLYMORPHISM AND SYSTEMIC LUPUS ERYTHEMATOUS (SLE) IN THE BRAZILIAN POPULATION

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BACKGROUND

The development of Systemic Lupus Erythematosus (SLE) is related to the interaction between genetic characteristics and environmental factors. A study conducted in Brazilian patients has suggested that CCR5Δ32 allele may be considered a protective factor for SLE in European descent individuals, but it was observed that female patients of African descent carrying this allele were more predisposed to nephritis class IV. Also, CCR5Δ32 was suggested be associated with SLE genetic predisposition and the early age of the onset of the disease among female Brazilian patients. The purpose of this study was to establish the potential association between CCR5Δ32 polymorphism and clinical phenotypes of systemic lupus erythematous in a Brazilian cohort of patients.

MATERIALS AND METHODS

The study included 197 patients with SLE, 124 among them, with nephritis and 124 healthy volunteers. The skin color/race has been assigned according to the patients' two previous generations. Clinical manifestations and laboratory abnormalities specific to SLE have been obtained through the medical record review and direct interviews. Patients were included on the study in 2012 and 5 years later, glomerular filtration rate was calculated through CKD-EPI for patients with SLE in order to determine disease severity. CCR5 gene was then amplified using polymerase chain.

RESULTS

The frequency of the CCR5 and CCR5Δ32 alleles were 0.963 and 0.036 among the control group, and 0.969 and 0.030 among the patients, respectively. The CCR5Δ32 homozygote genotype was not observed in any group. The frequency of the polymorphism studied among patients with nephritis was 0.026, and among nephritis nulls there were 0.038. CCR5Δ32 frequency of 0.034 and 0.961 were respectively found on the proliferative and non nephritis groups. The disease's onset mean age was similar in individuals carrying the polymorphism and in non carriers (24.58 and 26.86 years, respectively). The polymorphism frequency, regarding ethnicity, was similar between afro descendent and non afrodescendent, as well as among other groups (control and lupus, nephritis and non nephritis, proliferative nephritis and other classes). The nephritis group has been divided beteween the ones who presented GFR <60 and ≥60 mL/min/1.73m2, and CCR5Δ32 frequency was similar (0.041 and 0.019), as well as GFR <30 and ≥30 (0.036 and 0.025).

CONCLUSION

There is no association between neither CCR5Δ32 polymorphism and the disease's onset age nor the development of proliferative nephritis nor the progression of renal disease in Brazilian population, in contrast to results previously found in other studies.