

A study of three candidate genes for pre-eclampsia in a Sinhalese population from Sri Lanka

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Abstract

Aim: The aim of these investigations was to study three candidate genes for pre-eclampsia--epidermal growth factor (EGF), transforming growth factor alpha, and angiotensinogen--in pregnant Sinhalese women from Sri Lanka, the first such study undertaken in this ethnic group. Reproducibility of results of genetic association studies of candidate genes for pre-eclampsia has not been consistent across populations. One of the factors that may contribute to such inconsistencies is genetic stratification due to population admixture. We therefore compared the allele frequencies of these candidate genes in healthy Sri Lankan subjects from three ethnic groups--Sinhalese, Sri Lankan Tamils and Moors--and in white Western Europeans.

Methods: Allele frequencies were established in 80 subjects from each of four populations (Sinhalese, Sri Lankan Tamils, and Moors in Sri Lanka and white Western Europeans in the U.K.). A further 175 Sinhalese women with pre-eclampsia and 171 normotensive Sinhalese controls were genotyped at eight single nucleotide polymorphisms in the candidate genes.

Results and discussion: In all genes haplotype and allele frequencies were comparable within the three Sri Lankan populations, but differed significantly from those in the white Western European population. Consequently cryptic population stratification is unlikely to have significant effects on allele or haplotype frequencies of the genes examined in this case-control study of Sinhalese women which showed a marginal association for EGF haplotypes and genotypes with pre-eclampsia ($P = 0.031$). This association requires replication in other populations.