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Association of fourteen PPARγ gene SNPs and hypertension in Mongolian population

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Abstract

The association of *PPARγ* polymorphisms with hypertension in several populations is controversial. The aim of the present study was to clarify the contributions of *PPARγ* genetic variants to hypertension through an association study. A total of 385 unrelated Mongolian herdsmen and 523 Han farmers were included in this study. Fourteen SNPs were selected from the Chinese HapMap database based on pairwise $r^2 \geq 0.5$ with minor allele frequency ≥0.05. The SNPs were genotyped using a PCR/ligase detection reaction assay. Prior to correction for multiple testing, the SNP rs6802898 and rs12633551 were significantly related to the prevalence of hypertension in the Han and Mongolian populations, respectively. The genetic association of each SNP with hypertension was individually tested using logistic regression. The SNP rs6802898 was associated with hypertension in both dominant (P = 0.033) and additive models (P = 0.026) in Han population, whereas rs12633551were associated with hypertension in both dominant (P = 0.014) and additive models (P = 0.0073) in the Mongolian population. Moreover, SNP rs12633551 had a significant effect on systolic and diastolic blood pressure response. However, none of these associations was statistically significant after Bonferroni correction for multiple testing. There was a significant difference among the haplotypes in the Han and Mongolian population. Interestingly, there was an association of the PPARγ haplotypes with hypertension even after Bonferroni correction. Thus, determination of the *PPARγ* haplotypes in different populations may prove informative for assessment of the genetic risk for hypertension.

Biography

Xiulan Su, Master-medicine, now is a professor of Cell Biology, doctoral supervisor of Inner Mongolia Medical University and Capital University of Medical Science, director of the Clinical Medical Research Center of the Affiliated Hospital, Inner Mongolia Medical University. Prof. Su has been devoted to genetics and metabolic diseases since her graduation in 1998. She participated in establishing two regional key laboratories, and then became director. Prof. Su won 9 awards on “Science and Technology Advancement Prize” at provincial or ministerial levels, one award on efforts to develop autonomous region by science, technology and education, a regional “pace-setter” of young scholars, an young outstanding contribution and expert, an young academic leader in health and medical, a regional March 8th red-banner pacesetter. She was chosen as first level in regional “111”, “321” Project. She was named as the famous teacher in Inner Mongolia in 2009. Currently, Prof. Su chairs two projects from National Natural Science Foundation. She also chairs and participates in several regional and college research fund projects, one national “863” Project, two Sino-Japan cooperation projects, one Sino-German cooperation project. Prof. Su has published 115 papers, including 30 SCI indexed papers. Five students received doctor’s degree and 53 students received master’s degree under supervision from Prof. Su.