ISSN 0972-3757
INTERNATIONAL JOURNALOF
HUMAN GENETICS

PRINT: ISSN 0972-3757 ONLINE: 2456-6360
Int J Hum Genet, 9(1): 13-19 (2009)
DOI: 10.31901/24566330.2009/09.01.03

Core Promoter Variants (A-20C, T-18C and G-6A) of the Angiotensinogen (*AGT*) Gene are not Significantly Associated with Hypertension in Patients of Tamilnadu, India

M. Karthikeyan[1,4], Rajiv Rose[1], V. Shridevi[1], B. Anandan[1], S. Shanmugasundaram[2], D. Mohan[3], A. Ramesh[1] and G. Jayaraman[1]

1. Department of Genetics, Dr. ALMPGIBMS, University of Madras, Taramani Campus, Chennai 600 113, Tamilnadu, India
2. K.S Hospital, Kilpauk, Chennai, Tamilnadu, India
3. Govt. Hospital, Head quarters, Dindigul 624001, Tamilnadu, India
4. Department of Bioinformatics, Alagappa University, Karaikudi 630 003, Tamilnadu, India

KEYWORDS Blood Pressure. AGT Gene Polymorphism. Promoter Variants. Disease Association

ABSTRACT Hypertension is a complex multifactorial disease, which affects 10-30 % of the world population. The genetic factors of the hypertension vary from population to population. Renin angiotensin system (RAS) genes play a key role in salt-water homeostasis and blood pressure regulation. The genetic polymorphisms of the angiotensinogen (*AGT*) gene are associated with hypertension in different populations and some of these polymorphisms (G-6A and M235T) have a significant role in the human evolution and selection fitness. The present study was carried out to find out the role of the core promoter variants {-20(A-20C),-18(T-18C) and -6(G-6A)} in causing hypertension in rural and urban hypertensive patients of Tamilnadu. Methods: A total of 254 hypertensive and 254 normotensive subjects were screened using PCR-SSCP and RFLP methods followed by DNA sequencing. The sequences were analysed by BLAST. Results: The genotype frequencies of A-20C (AA,AC,CC), C-18T (CC,CT, TT) and -6G(AA,AG,GG) in patients/controls respectively were 63.0,33.0,4.0/67.5,28.5,4.0; 99.0,1.0,0.0/99.6,0.4,0.0 and 83.0,17.0,0.0/81.6,18.5,0.0 Observation and Conclusion: None of these promoter variants were significantly associated with hypertension. The A allele of G-6A polymorphism was found in a high frequency in patients and controls (about 91%) which correlates with frequencies observed in African and Asian ethnic populations (80-95%).