

13th Biotechnology Congress

November 28-30, 2016 San Francisco, USA

Renin-angiotensin-aldosterone system genomics in essential hypertension

Kamna Srivastava

University of Delhi, India

Objectives: Hypertension is one of the major cardiovascular diseases. Candidate genes encoding the Renin-angiotensin-aldosterone system (RAAS), i.e., Angiotensin Converting Enzyme (ACE), Angiotensinogen, Angiotensin II Type-I receptor, Atrial natriuretic peptide (ANP) and Aldosterone synthase (*CYP11B2*), their expression at genetic and protein levels and their association with essential hypertension, if any, were investigated in a Northern Indian population.

Methods: Genotyping and gene expression at mRNA and protein levels was carried out by PCR-RFLP, Real time PCR and Western blot respectively.

Results: A significant association was found in the AT1R genotypes (AC+CC) with essential hypertension. The expression of angiotensinogen was also up-regulated in patients as compared to controls. The decreased levels of ANP gene expression at mRNA (85%) and protein (72.6%) levels and increased in *CYP11B2* protein expression (1.53 fold) in the patient group as compared to controls were found. The individuals with rare allele in Angiotensinogen gene were found to have significant control in blood pressure with ACE inhibitor, Enalapril.

Conclusion: Our findings suggest the association of candidate gene of RAAS with essential hypertension. The increased expression of Angiotensinogen converting enzyme, Angiotensinogen, Angiotensin II Type-I receptor gene and decreased levels of ANP gene expression at mRNA and protein levels in the patient group as compared to controls were significantly associated with essential hypertension and could be served as a prognostic biomarker for essential hypertension.

Biography

Kamna Srivastava has completed her BPharm, MPharm and PhD from Department of Pharmacology, Institute of Technology, Banaras Hindu University, India. She has held her Post-Doctoral positions in National Institute of Immunology and All India Institute of Medical Sciences, India. Presently, she is an Assistant Professor working in Molecular Cardiology Lab in Dr. B R Ambedkar Centre for Biomedical Research, University of Delhi, India. Her on-going project is focused on identifying the potential biomarkers for cardiovascular diseases. She has more than 30 research publications to her credit and is the recipient of grants from DST, CSIR and ICMR India.

kamna_srivastava@hotmail.com

Notes: