

The Insertion I/ Deletion D polymorphism of Angiotensin-Converting Enzyme (ACE) Gene Increase the Susceptibility to Hypertension and / or Diabetes

B.A. Bhavani^{1*}, T. Padma¹, B.K.S. Sastry², N. Krishna Reddy² and K. Nausheen¹

1. Department of Genetics, Osmania University, Hyderabad, Andhra Pradesh, India

2. Department of Cardiology, CARE Hospital, Nampally, Hyderabad, Andhra Pradesh, India

KEYWORDS Hypertension; Type II diabetes; ACE polymorphism

ABSTRACT The causes of hypertension and type II diabetes (NIDDM) are mainly unknown, but they arise from interplay between several genetic and environmental factors. Hence the present study was aimed to investigate whether the Insertion I/ Deletion D polymorphism of angiotensin-converting enzyme (ACE) gene increase the susceptibility to hypertension and / or diabetes. ACE gene was genotyped in 200 hypertension patients, 100 type II diabetic patients and 200 age and sex matched controls. From the present data it was observed that in hypertension patients genotypic and allelic frequencies were significantly deviated from Hardy-Weinberg equilibrium ($p < 0.05$). The DD genotype was strongly associated with hypertension [odds ratio (OR) = 2.02, confidence interval (CI) = 1.14-3.58, $p < 0.05$] and remained so when patients with type II diabetes were excluded from the analysis (OR = 2.07, CI = 1.10-3.93, $p < 0.05$) and significant association was not obtained in diabetic patients without hypertension. From the present results, it was concluded that D allele of ACE gene protects against diabetes, however it increases susceptibility to hypertension particularly when associated with type II diabetes.