

# THE ANALYSIS OF THE ASSOCIATION BETWEEN ACE GENE POLYMORPHISM AND RISK OF STROKE IN SRI LANKAN POPULATION: A PRELIMINARY STUDY

**M.G.N.S Udawatte**

Postgraduate Institute of Science, University of Peradeniya, Sri Lanka  
Department of Anatomy, Faculty of Medical sciences, University of Sri Jayewardenepura, Sri Lanka

Stroke as part of cerebrovascular disease is the third leading cause of death and the major cause of disability in the world. In Sri Lanka stroke is a major cause of disability and a leading cause of death, with Hypertension (62.5%) followed by diabetes (33.3%) are the most influential known risk factors for stroke.

Angiotensin-converting enzyme (ACE) gene polymorphism has been associated with increased incidence of stroke in some populations, although contradictory results have been reported. The aim of this study was to determine the allelic frequency and the genotypic distribution for ACE gene polymorphism in Sri Lankan patients with stroke compared to appropriate healthy controls and to correlate the genetic findings with the type of stroke (Ischemic Stroke & Hemorrhagic stroke). A total of 80 patients with stroke versus 64 healthy controls were studied for the presence of ACE gene polymorphism detected by PCR. Genotypes were defined as DD, II and ID according to the presence of the D (deletion) and I (insertion) alleles. Although there was no significant difference in ACE allelic frequency between cases and controls, DD genotype conferred a modest additional risk for early onset of Ischemic stroke. In models using patients with risk factors (hypertension, diabetes, myocardial infarction, hypercholesteremia and smoking ) as a referent group and comparing them to controls with the risk factor and with ID/II, and with DD genotypes, hypertension favoured an increasing trend of risk with Ischemic stroke patients having the risk factor at young onset and DD genotype at the highest risk in women with diabetes. Our results indicate that I/D polymorphisms may have a role in young ischemic stroke onset, and in respect to gender with a possible favourable effect of DD genotype in females.