ASSOCIATION OF FRAMINGHAM STROKE RISK PROFILE WITH INSTRUMENTAL ACTIVITIES OF DAILY LIVING, INTRACRANIAL WHITE MATTER LESIONS FOR SUBJECTS WITH ALZHEIMER’S DISEASE IN AN ASIAN GERIATRIC CLINIC

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Introduction: Vascular risk factors (VRF) have been reported to influence the phenotypic manifestation of late onset Alzheimer’s disease (AD) independent of cerebrovascular events. In our current study, we examined the impact of VRF aggregate (represented by Framingham stroke risk profile, FSRP) on instrumental activities of daily living (iADLs) of mild to moderate probable AD subjects in a Singapore geriatric clinic setting.

Methods: Baseline clinical, cognitive and functional evaluations (iADL as measured by modified Lawton and Brody scale) were performed. Neuroimaging studies were conducted to assess the age-related white matter changes scale (ARWMC) and medial temporal atrophy (MTA) scores. Apolipoprotein E (ApoE) genotypes were categorized as E4-, E4+ and E4E4. FSRP was tabulated based on subject’s age, gender, systolic hypertension and its treatment, diabetes, smoking status, cardiovascular disease, atrial fibrillation and left ventricular hypertrophy. Correlations were performed between FSRP, ApoE, iADL and other variables while regression analyses were conducted to determine the influence of FSRP on baseline iADLs.

Results: 66 patients with valid FSRP scores were reviewed. 46 (69.7%) were females while mean age was 78.2 ± 6.5 years. FSRP significantly correlated with iADL and ARWMC (Spearman’s Rho \( r = -0.26, p = 0.037 \) and \( r = -0.27, p = 0.033 \) respectively). Additionally, FSRP had a trend towards better correlation with ARWMC for individuals with E4E4 genotypes, followed by E4+ and E4- (\( r = 0.95, 0.41 \) and 0.11 respectively, \( p > 0.05 \)). In a linear regression model adjusting for age, gender, education and dementia severity, FSRP was also not a significant predictor of baseline iADLs (Adjusted \( R^2 = 0.43, \) OR = -2.8, \( p = 0.32 \)).

Conclusion: In our current cohort of AD subjects, influence of VRF aggregate as represented by FSRP on intracranial white matter lesions may differ by ApoE genotype. FSRP’s impact on iADLs is further attenuated by baseline features and dementia severity.