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Psychological comorbidity and biological factors post stroke in a Middle-Eastern cohort

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Introduction: The link between psychological comorbidity and biological factors has been well recognized for many conditions; however, less evidence is reported in the context of stroke. The aim of the study was to examine psychological comorbidity and biological correlates post- stroke in a Middle Eastern cohort.

Method: A prospective stroke sample of n=50 patients (case group) and n=50 healthy ageing individuals (control group) were recruited from the largest Medical Complex in Bahrain. A neuropsychological battery of assessments (including global, executive and meta- cognition and mood), were conducted on all participants. Blood samples were taken for ApoE and other biomarkers levels to determine clinical characteristics.

Results: Total metacognition scores were significantly associated with both anxiety ($r=.47$, $p=.001$) and depression ($r=.54$, $p<.0001$). Global cognition ($r=.32$, $p<.01$) but not executive function, was significantly associated with depression only. Metacognition remained a statistically significant correlate with depression ($\beta=.42$, $p<.0001$) and anxiety ($\beta=.51$, $p<.0001$) after adjusting for education and global cognition. The most frequent ApoE genotype was $\epsilon 2/3$ in both cases (44%) and control groups (63%). No statistical significant association was found by cognitive impairment stratification and ApoE genotype for either case or control groups. ApoE genotype $\epsilon 2/4$ had worse cognitive function ($\chi^2(3)=8.29$, $p<.05$) in the control group. A statistical significant difference was found between ApoE genotype and total anxiety scores in that ApoE genotype $\epsilon 3/3$ were highly anxious in the case group ($\chi^2(2)=6.77$, $p<.05$).

Discussion: Metacognition is a better determinant of mood symptoms after stroke, especially in regions where illiteracy levels are high in older populations. The presence of ApoE genotype $\epsilon 4/3$ and $\epsilon 4/4$ was low to non-existent in this sample explaining no significant associations with cognitive impairment. Further examination of mood dysregulation and ApoE genotype polymorphism may be warranted post-stroke.

Biography

Claire Donnellan is a Registered Psychologist with the Psychological Society of Ireland, and Assistant Professor and Director of International Initiatives with Trinity College Dublin (TCD), Ireland. She graduated with an Honors BSc in Psychology from University of London in 2002 and a PhD in Medical Gerontology from the Department of Clinical Medicine, TCD in 2008. Her work experience in healthcare as a Researcher and Educator expands across the health sciences both here in Ireland and internationally in Australia, United Kingdom and the Middle East. Her research interests include examining the challenges to successful ageing in both healthy ageing and in age-related illness and disease populations; specifically stroke and neurological patient cohorts. She has published widely in neurology, gerontology and psychology journals and her memberships include the International Federation of Ageing, the World Federation for Neuro-Rehabilitation, and both the European and World Stroke Organizations.

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