INTERNATIONAL DATA ARCHIVES ON COGNITION AND MOOD: RESOURCES FOR NOVEL EXPLORATORY ANALYSES

Myzoon Ali, Terence Quinn, Kennedy Lees, Nele DeMeyere, Glyn Humphreys, Vincent Mok, Adrian Wong, Ann Van de Winckel, Martin Dichgans, on Behalf of the VICCTA and VISTA-Cognition Steering Committees

1 University of Glasgow, Institute of Cardiovascular & Medical Sciences, UK
2 Department of Experimental Psychology, University of Oxford, Cognitive Neuropsychology Centre, UK
3 Faculty of Medicine, Lui Che Woo Institute of Innovative Medicine, The Chinese University of Hong Kong, Department of Medicine and Therapeutics, Hong Kong
4 Medical School, University of Minnesota, Physical Therapy Program, Department of Physical Medicine and Rehabilitation, USA
5 German Centre for Neurodegenerative Diseases (DZNE), Institute for Stroke and Dementia Research, Germany

Introduction: Dementia is the most common cause of disability in older adults, with a worldwide prevalence of 44 million people; by 2030, this figure is projected to increase to 76 million. Annually, there are 7.7 million new cases of dementia, corresponding to a new case of dementia somewhere in the world every four seconds. Dementia and stroke share several key prognostic factors including age and vascular disease; one in three people will have a stroke, develop dementia or experience both. Improved recognition and treatment of dementia and other cognitive impairments are research priorities, particularly for stroke survivors. Increased funding for research into causes, prevalence, impact, therapy and prevention of dementia has been recommended. In addition to ongoing original research and collection of prospective data, the research potential of existing data on cognition and mood should be maximised. We aimed to establish international data resources comprising cognitive and mood data, to facilitate novel and exploratory research in this area.

Methods: We established two complementary international resources for collation of data on cognition and mood; the Virtual International Cardiovascular and Cognitive Trial Archive (VICCTA) and the Virtual International Stroke Trial Archive for Cognition (VISTA-Cognition). We established eligibility criteria for inclusion in each archive to maximise the comparability of data. We invited principal investigators (PI) to lodge data on prospective studies (trials and observational cohorts) that contained measures of cognition and/or mood. The resources are led by Steering Committees comprising contributing PIs and sponsors. Members oversee data use for novel analyses and review subsequent manuscripts. Access to these archives is granted to the wider research community for exploratory analyses.

Results: Within VISTA-Cognition, we currently hold anonymised data on 2,422 individuals across 8 stroke studies, with commitments to contribute data from a further 6 large studies. Materials available for analysis include baseline clinical and demographic data, functional assessments and a variety of cognitive/mood measures. Multi-domain screening tools such as Folstein’s Mini Mental State Examination (MMSE), the Oxford Cognitive Screen and the Hospital Anxiety and Depression Scale (HADS), and selected neuropsychological test batteries including individual domain data, are available for analyses.

Collation of data on cognition and mood has recently commenced within VICCTA; we currently hold data on 25 participants with items available for analysis including MMSE, Amsterdam Dementia Screening Test 6 (ADS6) and Stockton Geriatric Rating Scale. Recruitment is ongoing; we anticipate the contribution of further datasets to each of these archives.

Conclusion: Anonymised data from these archives can be used to examine questions relating to cognition and mood in the context of stroke and other health states, and to generate and test novel hypotheses. VISTA-Cognition and VICCTA actively encourage the publication of research findings arising from these resources. Exploratory analyses of our sister archives in acute stroke, intracerebral haemorrhage, stroke rehabilitation, and cardiovascular disease have resulted in more than 70 peer-reviewed publications and over 120 presentations at international conferences. These include examination of topics such as the natural history of recovery from specific conditions, trial design optimisation, selection of appropriate study endpoints and the effects of condition-specific impairments on outcomes and quality of life. We encourage investigators to share further datasets and/or to propose projects and analyses that will make use of these anonymised data.