Neuroinflammatory markers in Alzheimer’s disease and dementia with Lewy body

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Introduction: Neuroinflammation is an important feature of Alzheimer’s disease (AD). However, little is known about the inflammatory status of dementia with Lewy body (DLB), which has both AD (plaque and tangle) and alpha-synuclein pathologies.

Methods: Levels of β-amyloid (Aβ1-42), phosphorylated tau (pS396 tau) as well as inflammatory cytokines interleukin-10 (IL-10), IL-12, IL-13 and interferon γ (IFN-γ) in neocortical brain homogenates from aged controls, AD and DLB cases were measured using ELISA and Luminex assays.

Results: AD and DLB both showed significant Aβ1-42 and p396 tau burden, at levels significantly higher than controls. In contrast, only AD showed significantly higher levels of inflammatory markers, while neuroinflammatory markers are not raised in DLB.

Discussion: Despite similar burden of AD pathology, DLB has a relatively mild neuroinflammatory response compared with AD. The efficacy of anti-inflammatory therapeutic approaches may therefore be more limited in DLB.

Biography
Mitchell K P Lai received BSc from the University of Alberta, Canada in 1995 and PhD from the Department of Pharmacology, University of Sydney, Australia in 2003. From 2003-2009, he was Principal Research Scientist with the Dept. of Clinical Research, Singapore General Hospital. First he joined in the National University of Singapore (NUS) as a Research Fellow in 2010, then Research Assistant Professor in 2011 under the Memory, Aging and Cognition Centre. In 2012, he joined in NUS in the Dept. Pharmacology as an Assistant Professor. His research interests include neurochemistry of dementia, “Omics” and molecular mechanisms of neurodegeneration.