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Clinicopathological correlation and laboratory investigations in dementia

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Dementias including Alzheimer's disease are the most common terminal illnesses amongst ageing populations and their prevalence continues to increase along with increased human life expectancy. Based on clinical criteria alone, the diagnosis cannot be made until the disease is in a relatively far advanced stage. Neuropathology accumulates gradually and it has been shown that neuro pathological features, eventually leading to the clinical syndrome of dementia, may be present as early as 20 years before the first symptoms become overt. Relevant laboratory techniques are required to classify the complex dynamic neuro-anatomical changes that occur over time in health and disease. With the advent of potential therapies for the treatment of degenerative dementias, clinical pathology strategies need to enable early diagnosis and facilitate monitoring of disease progression in treatment trials. This presentation highlights some of the innovative structural and functional techniques in modern pathology that have impacted on the differentiation and clinical management of dementia and normal ageing. Along with *in vivo* brain structural imaging which has an established role in the evaluation and monitoring of neuro-anatomical changes there is a clear need for sensitive and reliable biologic markers that are able to demonstrate the presence of neuropathology before a patient has reached the stage of clinical dementia. There have been remarkable developments in neuroimaging markers over the past decade, most notably the advent of Positron Emission Tomography (PET) amyloid imaging using radiotracers that label fibrillary forms of amyloid- A. Similarly, new research in Cerebrospinal fluid (CSF) markers suggests CSF levels of A β 1-42 and phosphorylated tau (T-tau and P-tau) may be useful in the early diagnosis of AD and prediction of cognitive decline.

Biography

Hashim Missawi is currently working as a Consultant Pathologist and Head of Pathology Department, MMC Hospital, Ministry of Health Madinah Munawara, KSA. He is also a Member of Maria's Sudanese Charitable Association for Care of Alzheimer's Disease Patients. He has completed his MBBS degree and his objective is to further widen and develop experience in pediatric and geriatric pathology and laboratory quality control.

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