McCusker ALZHEIMER'S RESEARCH Foundation

BRAINWAVE

The Research You Support!

Dr Hamid Sohrabi

Depression and Alzheimer's
Exploring the link

The symptoms of depression and cognitive decline have been linked in a recent study led by Foundation supported researcher Dr Hamid Sohrabi, a member of Professor Ralph Martins' research team at Edith Cowan University.

Previous studies have made this link, however the exact nature of the connection has never been clarified. Dr Sohrabi's prior research identified a specific depressive endophenotype (DepE) of cognitive impairment for both Alzheimer's disease and mild cognitive impairment (MCI). MCI is a mild but noticeable decline in a person's memory and thinking skills.

The most recent study examined the link between the previously identified results and cognition among cognitively normal community-dwelling elders. It was confirmed that the signs of depression begin well before the symptoms of Alzheimer's become apparent.

Dr Sohrabi says, "Our findings confirm there is a core group of symptoms that may enable us to differentiate between people at risk of developing dementia and normally aging individuals. This means we can develop a test that will allow us to differentiate between people at risk of developing dementia and normally ageing individuals."

For those where depression may be an element leading to cognitive dysfunction, this test will allow early medical and lifestyle interventions such as antidepressant drugs, and increased exercise and social interactions, to prevent or slow their cognitive decline.

The results have been published in the International Journal of Geriatric Psychiatry.

Blood Lipids Projects
Knowledge sharing in mental health research

Lipidomics is the study of the structure and function of lipids – the fatty compounds found in our bodies that are vital for its function. These compounds are part of the suite of biomarkers being investigated by Professor Ralph Martins and his team in their search for answers about Alzheimer's disease and dementia. This significant study will aid the discovery of a blood test for the early diagnosis of Alzheimer's.

Lipidomics research features in prominent studies such as the Australian Imaging, Biomarkers and Lifestyle (AIBL) study and underpins some of its work investigating diets and Alzheimer's disease risk. Similar to heart disease, cholesterol and blood lipids are thought to play a role in the development of Alzheimer's disease. As is often said, what is good for the heart is good for the brain.

A recent development, through the CRC for Mental Health, has been the comparison of lipid profiles between Alzheimer's disease and Schizophrenia. This is based on an observation of similarities of the cognitive decline seen in both diseases, and will assist research groups learning from each other.

Professor Assen Jablensky (UWA, leader of the psychoses programs in the CRC for Mental Health) has provided a subset of his Schizophrenia study samples in a collaboration with Professor Martins to investigate the significance of lipid biomarkers in Schizophrenia, and the specificity of lipid blood biomarkers for Alzheimer's disease.

Dr Florence Lim from ECU has lipid profiled a number of healthy controls and Schizophrenia participant samples on the mass spectrometer – a highly specialised analysis tool purchased by the Foundation. Preliminary results suggest that some of the significant lipids found in Schizophrenia have similar directional trends as Alzheimer's disease. There are also significant lipid changes which are unique to each disease.

Further statistical analyses are required and will soon be undertaken. However this initial work demonstrates an invaluable collaboration with the sharing of knowledge, methodologies and equipment, for the mutual benefit of two important areas of mental health research.