

## **Alzheimer's Association International Conference**

### **Highlights from the 2018 Alzheimer's Association International Conference**

In July, the bustling and vibrant city of Chicago in the United States, played host to this year's Alzheimer's Association International Conference (AAIC). AAIC is the largest and most influential international meeting dedicated to advancing dementia science. Each year, AAIC convenes the world's leading basic science and clinical researchers, next generation investigators, clinicians and the care research community to share research discoveries that will lead to methods of prevention and treatment, and improvements in diagnosis for Alzheimer's disease.

There were many meeting highlights, however, the biggest talking point was the release of the latest results in the Phase II clinical trial of a new drug candidate for the treatment of Alzheimer's. The trial sponsored by Eisai Co., Ltd. and Biogen Inc., has thus far seen an anti-amyloid beta (A $\beta$ ) protofibril antibody, named BAN2401, administered to 856 patients with early Alzheimer's disease. The results following 18-months of drug therapy (at varying doses) are encouraging with reduction of brain amyloid plaques and slowing of cognitive decline seen. We hope that these positive results continue to the next stage of drug testing.

Other interesting findings presented at AAIC included reports of a potential link between reproductive history and dementia risk in women. After analysing data from 14,595 women aged 40-55 years, US-based researchers found a correlation between risk of dementia and the number of children, number of miscarriages, and age at natural menopause. Notably, women in the study with three or more children had a 12 percent lower risk of dementia compared to women with one child. Each additional report of a miscarriage was associated with a 9 percent increased risk of dementia, compared to those women who reported no miscarriages, whilst compared to women who experience natural menopause after age 45, those who experience natural menopause at 45 or younger were at 28% greater dementia risk after adjusting for relevant factors. Further research is needed to evaluate the mechanistic pathway between reproductive events and brain health, however, these results are certainly thought-provoking when one considers the increased incidence of Alzheimer's and dementia in women.

New research results from the US-based SPRINT MIND Study also showed that aggressive lowering of systolic blood pressure was associated with significant reductions in the risk of mild cognitive impairment and dementia. These findings further support the idea that reducing cardiovascular disease risk factors can positively influence your future risk of dementia.

A number of AARF and ECU researchers travelled to Chicago for the conference. PhD student Rasangi Seneviratne presented a poster on the development and validation of a new measure for evaluating olfactory (smell) memory which may be useful in identifying the early presence of Alzheimer's.

Research Fellow Dr Stephanie Rainey-Smith gave a talk on a possible mechanism between sleep and Alzheimer's disease. Poor sleep has previously been shown to contribute to higher amyloid beta burden in the brain. Dr Rainey-Smith reported that individuals with particular genetic variations in proteins that play a role in our brain's night-time 'housekeeping' system were susceptible to high brain amyloid beta levels if they experienced poor sleep. This suggests that individuals with these genetic variations might benefit most, in terms of reducing Alzheimer's risk, from an intervention aimed at improving their sleep.

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