Research Grants 2024

Multiple sclerosis | Clinically accessible imaging of pathogenetic processes underpinning deterioration in relapsing-remitting multiple sclerosis

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Multiple sclerosis [MS] is a chronic autoimmune neurological condition, which affects over 32,000 Australians. With the peak of incidence in the 3-4th decades of life, it has a profound life-long negative impact on quality of life and workforce participation of adults. While relapsing forms of MS are generally responsive to the available (immunomodulatory) therapies, their effect on slowing worsening of disability in progressive MS forms is limited. The distinction between the relapsing and the progressive MS forms is, however, somewhat arbitrary. It is a common experience that despite having a disease without overt clinical attacks (relapses) and without any new lesions on brain and spinal cord MRI, patients with relapsing MS may develop new disability, which typically remains unnoticed until it has become clinically significant and irreversible. Detection and prevention of this slowly evolving disability in relapsing MS is an area of unmet need.

The PRIMeS cohort, which will launch enrolment in early 2024, will enable us to develop and validate an instrument consisting of harmonised, sensitive and quantitative methods of measuring various aspects of neurological function, cognitive function, structural changes of the brain and biological markers, which will enable neurologists to monitor subtle, presently undetected signs of MS progression.

The present project will expand the scope of the PRIMeS cohort study. Among a subgroup of 40 participants, it will acquire clinical MRI imaging alongside a high-end high-field 7T brain MRI. This will enable us to translate findings from the 7T imaging – a research tool only available at a very limited number of large academic centres – into markers detectable with standard 3T clinical imaging. As a result of this, clinicians providing care for patients with MS will be able to asses radiological metrics of subtle progression of MS in routine practice.

Grant $32,000

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