

Therapeutic strategies in demyelinating neuroinflammatory disorders of the central nervous system

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Background. Immune-mediated demyelinating disorders of the central nervous system (CNS) are a neuroinflammatory spectrum of which multiple sclerosis (MS) is the most frequent disease. Other rarer diseases are neuromyelitis optica spectrum disorders (NMOSD) and myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD), which have a poorer prognosis for clinical recovery following attacks. Overall, maintenance treatment aims to modulate and/or suppress the immune system so as to avoid attacks and disability accrual.

Objectives. This doctoral project aims to explore therapeutic strategies in MS and related neuroinflammatory disorders through targeted studies.

Methods. A modified Delphi panel process comprising MS experts, patient and industry representatives will attempt to reach consensus-based definitions of a “cure” for MS. Immune reconstitution therapies (IRTs), which are treatment options for aggressive MS, will be compared considering their efficacy to control disease activity and disease progression, used as first-line versus later-line treatment in a retrospective observational cohort study using data from the largest international MS registry, MSBase. Furthermore, a retrospective cohort study on NMOSD collecting data from multiple Belgian medical centres, will be performed to provide a comprehensive description of NMOSD patients in Belgium and further our understanding of their demographic, clinical, paraclinical and treatment characteristics. Additionally, a modified Delphi panel method including international leading experts on NMOSD will be conducted following their case-based NMOSD/MOGAD meeting in 2024, which focused on mitigation strategies of infectious risk in NMOSD.

Conclusion. This doctoral project will contribute to the advancement of current knowledge on treatment management of neuroinflammatory disorders of the CNS to the benefit of the scientific community and the patients.