routes. However, factors influencing route selection and attack characteristics leading to treatment remain unclear. This study assesses trends in oral vs. IV HDS use, factors affecting decisions, and clinical impact. Methods: We retrospectively analyzed data from the Multiple Sclerosis database (MuSicaL) using Natural Language Processing (NLP) from 2010–2022. We examined annual trends in HDS route, its relationship with attack type, and prescribing specialties. Statistical analyses were conducted using R-4.2.2. Results: Of 2,413 individuals meeting inclusion criteria, 1,086 had an attack, and 543 (50%) used HDS. Among 265 with a known route, oral HDS was most common, and HDS use declined after 2018. Attack type significantly influenced HDS route (p = 0.045), with IV use highest in multifocal subtype (50.9%) and lowest in myelitis (32.7%). Neurologists were the primary prescribers of IV HDS. Conclusions: Our results indicate a trend towards increased oral HDS use, with IV reserved for severe attacks like multifocal ones. Attack type influences treatment choices, and neurologists remain key prescribers of IV HDS, guiding future treatment strategies.

P.015

Analysis of Aquaporin-4 and Myelin Oligodendrocyte Glycoprotein Autoantibodies using live cell-based assay in a reference laboratory with over 6,000 tests

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doi: 10.1017/cjn.2025.10199

Background: Accurate aquaporin-4 (AQP4) and Myelin Oligodendrocyte Glycoprotein (MOG) assays are essential for effectively diagnosing neuromyelitis Optica spectrum disorder and MOG antibody-associated disease. The Live Cell-Based Assay (L-CBA) is the gold standard laboratory test for detecting these antibodies. We studied the profiles of these antibodies, in samples of patients with relevant neurological conditions. Methods: Between January 2021 and December 2024, a total of 6673 samples of serum and/ or CSF were tested at BC Neuroimmunology Lab, Vancouver. We performed in-house L-CBA for the AQP4 and MOG Abs identification. We analyzed the demographics and characteristics of the positive Abs results. Results: We identified 7.8% positive results for anti-MOG and 2.7% for anti-AQP4 antibodies. Both antibodies were more frequent in females (AQP4: 76.9%, MOG: 65.1%). The average age of patients was 49.2 ± 18.8 years, ranging from 9 to 88 years for AQP4 antibodies, and 40.9 ± 19.5 years, ranging from 10 months to 89 years for MOG antibodies. Conclusions: Both anti-MOG and anti-AQP4 Abs are prevalent in females. Moreover, anti-MOG Abs are present across a wider age range from infancy to the elderly, and anti-AQP4 Abs are typically found in later ages, between 10 and 90 years.

P.016

Secondary immunodeficiencies in ocrelizumab - versus rituximab-treated persons with relapsing Multiple Sclerosis

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doi: 10.1017/cjn.2025.10200

Background: Anti-CD20 monoclonal antibodies are highly effective for RMS treatment. Ocrelizumab (OCR) is standard, while Rituximab (RTX) is an alternative. The impact of anti-CD20 therapies on immune markers remains understudied, though deficiencies are frequently observed and have been associated with increased risk of infection. Our objective is to characterize and compare lymphocyte, neutrophil, and immunoglobulin levels in OCR- versus RTX-treated persons with RMS. Methods: This retrospective chart review included RMS patients on OCR or RTX (2017–2023). Pre- and post-treatment levels of lymphocytes, neutrophils, and immunoglobulins (IgG, IgA, IgM) were analyzed. Kaplan-Meier curves, log-rank tests, and Cox proportional hazards models were used for survival analysis. Results: 350 patients (OCR=175, RTX=175) were included. The mean treatment length was 60.9 (SD 19.1) months for OCR and 42.7 (SD 19.5) months for RTX. RTX was associated with a significantly shorter time to IgM deficiency (29.6 vs. 40.0 months, p=0.02). Cox analysis confirmed RTX increased IgM deficiency risk (HR=1.54, 95% CI: 1.06-2.23, p=0.02). No differences were seen for lymphocytes, neutrophils, IgG, or IgA. Conclusions: RTX was associated with a shorter time to and increased risk of IgM hypogammaglobulinemia compared to OCR, highlighting the importance of long-term monitoring. Further research is needed to guide treatment decisions.

P.017

EBNA1 titres are elevated in radiologically isolated syndrome and correlate with plasma GFAP

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doi: 10.1017/cjn.2025.10201

Background: Epstein-Barr virus (EBV) infection is believed to be a critical prerequisite for the development of multiple sclerosis (MS). This study aims to investigate whether anti-EBV titres are elevated before the onset of MS symptoms in people with