girl with newly-diagnosed GPA presented to our hospital with progressive debilitating headaches, polyuria, and polydipsia. **Results:** Initial MRI showed changes to the pituitary. Lumbar puncture (LP) revealed opening pressure of 26. She developed central diabetes insipidus (DI) and visual changes. Repeat head imaging showed adenohypophysitis. The GPA was previously treated with steroids and cyclophosphamide, followed by Cellcept. Once the pituitary involvement was discovered, she was given re-induction therapy with Rituximab and steroid dose was increased. DI is being treated with DDAVP. Her headaches are improving. **Conclusions:** CNS inflammatory diseases are rare in childhood. Pituitary involvement is extremely rare in GPA. Induction therapy for adults with GPA and pituitary involvement includes glucocorticoids and cyclophosphamide, which often leads to improvement of MRI abnormalities but is not effective in resolving pituitary dysfunction. Our patient had already received this treatment when she developed the CNS findings. This case demonstrates that cerebral involvement is often resistant to classic therapy, and one should be vigilant in looking for CNS inflammation in these patients.

P.027

Efficacy of a fourth alemtuzumab course in RRMS patients from CARE-MS II who experienced disease activity after three prior courses

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doi: 10.1017/cjn.2018.129

Background: In RRMS patients with inadequate response to prior therapy, 2 alemtuzumab courses (12 mg/day; baseline: 5 days; 12 months later: 3 days) significantly improved outcomes versus SC IFNB-1a over 2 years (CARE-MS II [NCT00548405]). Efficacy remained durable in a 4-year extension (NCT00930553); patients could receive as-needed alemtuzumab retreatment (≥12 months apart) for disease activity, or another disease-modifying therapy (DMT). Through Year 6, 88% remained on study; 50% received neither alemtuzumab retreatment nor another DMT; 16% received ≥4 courses; 3% received ≥5 courses. We evaluated Course 4 (C4) efficacy in patients receiving ≥4 courses. **Methods:** Annualized relapse rate (ARR); improved/stable Expanded Disability Status Scale (EDSS) score (versus baseline); 6-month confirmed disability improvement (CDI). 11% of patients met inclusion criteria: ≥4 courses within 60 months of baseline; no DMT. Those receiving C5 were censored at that time. **Results:** ARR decreased after C4 (12 months pre-C4 [-12M]: 0.75; 12 months post-C4 [+12M]: 0.19; $P<0.0001$), remaining low (0.23) at Year 3 post-C4. More patients had stable/improved EDSS scores +12M (67.5%) versus at C4 administration (53.5%). Percentage with CDI increased post-C4 (-12M: 10.0%; +12M: 26.7%). **Conclusions:** C4 reduced relapses and stabilized/improved disability in patients with disease activity after initial treatment (C1, C2) plus one additional course (C3).

P.028

Each revision of the McDonald diagnostic criteria for multiple sclerosis allow earlier diagnosis in more patients

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doi: 10.1017/cjn.2018.130

Background: The 2005, 2010, and 2017 McDonald diagnostic criteria for multiple sclerosis (MS) were compared at baseline in participants of a Canadian multicentre clinical trial of minocycline in clinically isolated syndrome (CIS). **Methods:** The cohort included 142 participants. Baseline clinical and imaging data were used to determine if participants met criteria for dissemination in space (DIS) and time (DIT) as required for each version of the criteria. We also explored the impact of permitting a clinical diagnosis of transverse myelitis to represent a spinal cord lesion, and for multifocal clinical onset to represent DIS. **Results:** The clinical trial excluded patients meeting the 2005 McDonald criteria at baseline. The 2010 criteria were met by 28.9% (41/142) of participants. If a multifocal clinical presentation was considered evidence of DIS 29.6% (42/142) met the 2010 criteria. The 2017 criteria were met by 36.7% (52/142). Allowing a clinical diagnosis of transverse myelitis to confirm a spinal lesion, or multifocal onset to confirm evidence of DIS, led to a diagnosis in 38% (54/142) and 38.7% (55/142), respectively. **Conclusions:** This study confirms that each revision of the McDonald diagnostic criteria allowed an MS diagnosis in more CIS patients at onset. Exploration of other modifications suggests further improvement may be possible.

P.029

Case report: pediatric enterovirus encephalitis - a rare complication of rituximab therapy

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doi: 10.1017/cjn.2018.131

Background: Opportunistic infection should be considered when seeing neurological complications in the setting of immunosuppression. Accumulating evidence that enteroviral meningoencephalitis can occur after rituximab administration exists but differentiating it from non-infectious conditions can be challenging. **Methods:** Case report **Results:** We describe a 4 year-old-boy with a history of pulmonary capillaritis, treated with immunosuppressive therapy including steroids, rituximab, and azathioprine. He developed mutism and ataxia after 18 months on rituximab. MRI Brain/Spine revealed extensive T2/FLAIR hyperintensities in the deep subcortical white matter, temporal lobes, globus pallidi, thalami, brainstem, and cerebellum; and swelling of the dorsal cervical cord, showing primarily grey matter involvement. IgG levels had a decreasing trend over the course of Rituximab. CSF, and subsequent brain biopsy, were both positive for enterovirus RNA by RT-PCR. He was thought to have enterovirus encephalitis secondary to rituximab therapy, and was treated with IVIG and fluoxetine. **Conclusions:** One should consider chronic opportunistic CNS infections in children treated with immunosuppressive therapy, and to consider chronic enterovirus infection when B-cell suppression has occurred. As rituximab is being increasingly used in the pediatric population, and is generally