The first anniversary issue

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It has been 1 year since the first issue of *Neurology® Neuroimmunology & Neuroinflammation* (N2) was launched. Since then, there has been a steady growth in the number of manuscripts received and an increasing number of manuscripts included in each bimonthly issue. The current issue contains 26 manuscripts: 6 related to multiple sclerosis (MS), 7 to antibody-associated encephalitis, 3 to aquaporin-4 (AQP4) antibody–related disorders, and 10 to other inflammatory or autoimmune neurologic disorders. Three of these manuscripts are updates on optic neuritis, AQP4 autoimmunity, and biomarkers of neuromyelitis optica.

Bridel et al.[1] investigated the hematologic modifications in the peripheral blood of 44 patients with relapsing-remitting MS treated with natalizumab for 18 months. They found that the mean total white blood cell, lymphocyte, and eosinophil counts were significantly higher 1 month after treatment initiation and remained stable thereafter. In contrast, the monocyte counts increased progressively during the 18-month treatment. In addition, erythroblasts and neutrophil precursors that were absent before treatment initiation became evident in 16% and 6.8% of patients, respectively, 1 month after treatment onset. None of these changes were associated with malignancy, although longer follow-up is needed to rule out this possible complication. Recognition of these changes in patients treated with natalizumab prevents unnecessary diagnostic procedures. In another study, Pérez-Miralles et al.[2] investigated the association between brain volume loss during the first year of interferon treatment and clinical outcome at 4 years in patients with MS. They found that whole-brain and white matter volume changes in the first year of treatment were independent predictors of worsening disability.

Among the manuscripts focused on antibody-associated encephalitis, Hilderink et al.[3] describe a newborn with anti–NMDA receptor (NMDAR) encephalitis due to intrauterine transfer of maternal NMDAR antibodies. The mother did not have active disease during pregnancy (she had had anti-NMDAR encephalitis 4 years earlier), and no other problems occurred during the pregnancy. The child improved spontaneously along with a progressive decrease of antibody titers. This represents the first unambiguous case of anti-NMDAR encephalitis in a newborn. Elamin et al.[4] describe a patient with anti–α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptor (AMPAR) encephalitis who, after prodromal symptoms of headache, developed progressive confusion, paranoia, and hallucinations. The MRI showed fluid-attenuated inversion recovery/T2 abnormalities symmetrically involving the cortex and subcortical white matter in the posterior temporal and parieto-occipital regions. No tumor was identified, but the patient had 2 clinical relapses in 8 months; treatment with IV immunoglobulin was effective in all episodes. This case emphasizes the previous observation that anti-AMPAR encephalitis can present with predominant psychiatric symptoms.[5] In a recent study of 22 patients with anti-AMPAR encephalitis, only 55% had classic MRI findings of limbic encephalitis.[6] Glover et al.[7] describe 2 patients with high titers of glutamic acid decarboxylase (GAD) antibodies who underwent resective surgery for intractable temporal lobe epilepsy with hippocampal sclerosis. In both patients, pathologic studies showed International League Against Epilepsy type 3 hippocampal sclerosis or "end folium sclerosis." After surgery, one patient's convulsive seizures resolved but she continued to have complex partial seizures, and the other patient became seizure free. Both patients subsequently developed other syndromes related to GAD antibodies, including stiff person syndrome and cerebellar ataxia. Only one patient responded to immunotherapy for these syndromes. These 2 cases illustrate the complexity of neurologic syndromes related to GAD autoimmunity.[8]

Bogoch et al.[9] report 2 HIV-positive patients who developed a novel syndrome characterized by an acute, painful, unilateral lower motor neuron paralysis affecting the distal portion of the upper limb.

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Both patients had segmental T2-hyperintense lesions in the central gray matter of the spinal cord. The pathogenesis of this disorder is unknown. It is interesting that the symptoms developed when the patients were on antiretroviral therapy with stable CD4 counts and undetectable serum HIV by PCR. No opportunistic infections were identified, leading the authors to suspect a parainfectious immune mechanism triggered by the HIV infection. Treatment with steroids resulted in recovery in one patient and symptom stabilization in the other. Schuh et al.[10] investigated the frequency of the cryoporin/*NLRP3* low-penetrance mutations V198M and Q703K in 108 patients who reported at least 2 symptoms compatible with cryoporin-associated periodic syndromes (CAPS). CAPS are a group of hereditary systemic autoinflammatory diseases, including one called chronic infantile neurological, cutaneous, and articular syndrome that results in frequent neurologic symptoms. They found that 17 patients (16%) tested positive for either of the 2 mutations; 11 of these patients (65%) had headache syndromes and 9 (53%) had a concomitant diagnosis of MS. Among the non-MS mutation carriers, 7 of 8 had recurrent cranial nerve dysfunction. This study raises awareness for CAPS, a rare but treatable and commonly misdiagnosed group of autoinflammatory syndromes. In addition, it establishes a link between CAPS and MS. Alshehri et al.[11] investigated the pathologic features of 49 patients with acquired myopathies associated with serum antibodies to 3-hydroxy-3-methylglutaryl-coenzyme A reductase, a biomarker frequently associated with statin-induced necrotizing myopathy. The authors found statin use in only 38% of the patients; the syndrome was characterized by predominant proximal symmetric weakness, muscle discomfort, and high serum levels of creatine kinase. Pathologic studies showed frequent damage to both perimysial connective tissue and muscle fibers, with necrosis and myonuclear pathology. The absence of lymphocytic inflammation suggested humoral mechanisms, but because the autoantigen is intracellular, the authors found it difficult to implicate the antibodies as the main pathogenic effectors.

I hope this brief summary of a few manuscripts will bring your interest to these and the other equally interesting articles in this issue of N2. On this 1-year anniversary of the journal, I thank the authors, reviewers, editorial staff, and others whose work has contributed to the growth and success of N2. I look forward to working with all of you as we continue to address the clinical and basic issues of neuroinflammation and neuroimmunology.

DISCLOSURE

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REFERENCES

1. Bridel C, Beauverd Y, Samii K, Lalive PH. Hematologic modifications in natalizumab-treated multiple sclerosis patients: an 18-month longitudinal study. Neurol Neuroimmunol Neuroinflamm 2015;2:e123. doi: 10.1212/NXI.0000000000000123.
2. Pérez-Miralles FC, Sastre-Garriga J, Vidal-Jordana A, et al. Predictive value of early brain atrophy on response in patients treated with interferon β. Neurol Neuroimmunol Neuroinflamm 2015;2:e132. doi: 10.1212/NXI.0000000000000132.
3. Hilderink M, Titulaer MJ, Schreurs MWJ, Keizer K, Bunt JEH. Transient anti-NMDAR encephalitis in a newborn infant due to transplacental transmission. Neurol Neuroimmunol Neuroinflamm 2015;2:e126. doi: 10.1212/NXI.0000000000000126.
4. Elamin M, Lonergan R, Killeen RP, O'Riordan S, Tubridy N, McGuigan C. Posterior cortical and white matter changes on MRI in anti-AMPA receptor antibody encephalitis. Neurol Neuroimmunol Neuroinflamm 2015;2:e118. doi: 10.1212/NXI.0000000000000118.
5. Graus F, Boronat A, Xifró X, et al. The expanding clinical profile of anti-AMPA receptor encephalitis. Neurology 2010;74:857–859.
6. Höftberger R, van Sonderen A, Leypoldt F, et al. Encephalitis and AMPA receptor antibodies: novel findings in a case series of 22 patients. Neurology 2015;84:2403–2412.
7. Glover RL, DeNiro LV, Lasala PA, Weidenheim KM, Graber JJ, Boro A. ILAE type 3 hippocampal sclerosis in patients with anti-GAD–related epilepsy. Neurol Neuroimmunol Neuroinflamm 2015;2:e122. doi: 10.1212/NXI.0000000000000122.
8. Gresa-Arribas N, Ariño H, Martínez-Hernández E, et al. Antibodies to inhibitory synaptic proteins in neurological syndromes associated with glutamic acid decarboxylase autoimmunity. PLoS One 2015;10:e0121364.
9. Bogoch II, Wilson MR, Chad DA, Venna N. Acute lower motor neuron syndrome and spinal cord gray matter hyperintensities in HIV infection. Neurol Neuroimmunol Neuroinflamm 2015;2:e113. doi: 10.1212/NXI.0000000000000113.
10. Schuh E, Lohse P, Ertl-Wagner B, et al. Expanding spectrum of neurologic manifestations in patients with *NLRP3* low-penetrance mutations. Neurol Neuroimmunol Neuroinflamm 2015;2:e109. doi: 10.1212/NXI.0000000000000109.
11. Alshehri A, Choksi R, Bucelli R, Pestronk A. Myopathy with anti-HMGCR antibodies: perimysium and myofiber pathology. Neurol Neuroimmunol Neuroinflamm 2015;2:e124. doi: 10.1212/NXI.0000000000000124.