Neuroimmunology

PP4220

Neuromyelitis optica spectrum disorder in a patient with myasthenia gravis

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Introduction: Neuromyelitis optica (NMO) spectrum disorders are restricted forms of NMO with either recurrent optic neuritis or relapsing transverse myelitis and positive anti-aquaporin 4 (AQP4) antibodies. Both NMO and MG are known to be associated with other autoantibodies and autoimmune disorders.

Case report: We report the case of a healthy 70-year-old woman, diagnosed in her mid twenties with generalized MG (diplopia, bilateral ptosis, dysphagia, breathing difficulties, bilateral arm weakness and positive AChR antibodies). She underwent thymectomy and remained stable with a low dose of acetylcholinesterase inhibitors. At the age of 70, she presented with an acute longitudinally extensive transverse myelitis (LETM), from C6 to T6 level, with inflammatory CSF. She was started on high-dose IV corticosteroids and a diagnosis of Idiopathic Transverse Myelitis was assumed. During the following 4 months, she had another two relapses that manifested as acute transverse myelitis. She had a normal brain MRI, normal visual evoked potentials and a positive serum anti-AQP4 antibody, so she was diagnosed as having a NMO spectrum disorder. Under oral corticosteroids and azathioprine there were no further relapses.

Conclusions: Few patients with both MG and NMOSD have been reported so far. A recent review reported that MG is more commonly associated with AQP4 antibody positive NMOSD than previously thought. It is still unclear how thymectomy contributes to the development of NMOSD in patients with MG as most of the patients reported had undergone thymectomy prior to the onset of NMOSD.

Disclosure: Nothing to disclose

PP4221

Evaluation of neurofilament heavy chain levels in progressive multiple sclerosis patients: preliminary results

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Introduction: Primary Progressive Multiple Sclerosis (PPMS) and Progressive Relapsing MS (PRMS) are the least common forms of MS. They are mainly characterized by progression from the onset of the disease. Axonal degeneration is the likely cause of the disease progression in MS. Neurofilament proteins which are heteropolymers composed of three subunits, light (NfL), medium (NfM) and heavy (NfH) chain are scaffolding proteins of axons. Therefore, levels of neurofilament proteins can potentially be a good surrogate marker for quantifying axonal damage.

Methods: In this study, MS patients with progressive disease from onset who were followed-up in Hacettepe University, Neuroimmunology Unit were evaluated. CSF NfH measurements were evaluated as the neuroaxonal damage markers. Patients with progressive onset (PPMS and PRMS) were compared with the other subgroups of MS patients and controls. NfH levels were studied in PPMS (n=19), PRMS (n=8) and Relapsing Remitting MS (RRMS) (n=7) patients.

Results: NfH levels in progressive MS patients (PPMS, PRMS and SPMS) were significantly higher than patients with RRMS (p=0.000a). There was no significant difference between PPMS and PRMS sub-groups. “CSF NfH level” was positively correlated with the “EDSS score” (p=0.008) whereas disease duration and NfH concentration were not significantly correlated (p=0.398).

Conclusions: The significant higher values of “CSF NfH concentration” in progressive patients, convincingly demonstrate the presence of axonal injury in the progressive form of the disease. No significant difference was detected between PPMS and PRMS groups. CSF NfH levels may serve as appropriate candidate to distinguish clinical subtypes of MS.

Disclosure: Nothing to disclose
Clinical and neuroradiological profile of acute disseminated encephalomyelitis in 13 children at a tertiary center in Saudi Arabia

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Introduction: Acute Disseminated Encephalitis (ADEM) is usually a monophasic polysymptomatic inflammatory condition of the central nervous system with an underling autoimmune pathology that principally involves the white matter although the grey matter may also be affected.

Methods: A 10-year (2000-2010) retrospective chart review of children with the diagnosis of ADEM was conducted at King Khalid University Hospital.

Results: 13 patients were identified. The age of presentation range between (10 months - 11.6y). History of preceding upper respiratory tract infection was noted in 69%. Polysymptomatic presentation was seen in all patients. The most often presenting signs were pyramidal signs in 92%, cranial nerve palsies in 84.6%, and altered sensorium in 53.8%.

Brain magnetic resonance imaging (MRI) identified white matter lesions in all patients. Deep grey matter involved in 23%, and spinal cord lesions in 28.6%.

<table>
<thead>
<tr>
<th>Presenting FEATURES of ADEM (13 cases)</th>
<th>No. of cases (%)</th>
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<tbody>
<tr>
<td>pyramidal signs</td>
<td>12 (92%)</td>
</tr>
<tr>
<td>cranial nerve palsy</td>
<td>11 (84.6%)</td>
</tr>
<tr>
<td>altered sensorium</td>
<td>7 (53.8%)</td>
</tr>
<tr>
<td>cerebellar signs</td>
<td>5 (38.5%)</td>
</tr>
<tr>
<td>meningeal signs</td>
<td>5 (38.5%)</td>
</tr>
<tr>
<td>spinal cord involvement</td>
<td>1 (7.7%)</td>
</tr>
<tr>
<td>extrapyramidal signs</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MRI Findings</th>
<th>No. of cases (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hemisphere/region</td>
<td></td>
</tr>
<tr>
<td>frontal</td>
<td>9 (69%)</td>
</tr>
<tr>
<td>temporal</td>
<td>4 (30.7%)</td>
</tr>
<tr>
<td>parietal</td>
<td>8 (61.5%)</td>
</tr>
<tr>
<td>occipital</td>
<td>5 (38.5%)</td>
</tr>
<tr>
<td>periventricular</td>
<td>6 (46%)</td>
</tr>
<tr>
<td>corpus callosum</td>
<td>4 (30.7%)</td>
</tr>
<tr>
<td>basal ganglia</td>
<td>3 (23%)</td>
</tr>
<tr>
<td>thalami</td>
<td>3 (23%)</td>
</tr>
<tr>
<td>midbrain</td>
<td>3 (23%)</td>
</tr>
<tr>
<td>brain stem</td>
<td>8 (61.5%)</td>
</tr>
<tr>
<td>cerebellum</td>
<td>4 (30.7%)</td>
</tr>
<tr>
<td>spinal cord</td>
<td>2 (out of 7pt)</td>
</tr>
</tbody>
</table>

Three patients achieved spontaneous clinical remission. Favorable outcome with steroids was observed in 10 patients. Out of those 3 received additional intravenous immunoglobulin. All patients survived except for one. 41.6% had excellent recovery, 41.6% had mild neurologic sequel with high functional level, and 16.6% had moderate to severe neurologic sequel.

Conclusions: The epidemiological data was consistent with the previous reported studies. MRI remains the imaging method of choice. Prognosis for survival and outcome was favorable with the use of corticosteroids and or IV immunoglobulin in all such cases.

Disclosure: Nothing to disclose
PP4223
Humoral response against neural precursor cells (NPCs) in the central nervous system (CNS) of experimental autoimmune encephalomyelitis (EAE)


Introduction: Multiple sclerosis (MS) is considered a T-cell mediated disease, but recent data revealed that autoantibodies may contribute to its pathogenesis. In the present study we examined their potential to target CNS progenitor cells.

Methods: MOG35-55-EAE was induced in C57bl/6 mice and blood-sampling was performed on day 17 (acute phase) along with naive group. The presence of autoantibodies was examined using Western blotting. We used total protein extract from NPCs and normal spinal cord (SC) as substrates stained with MOG-EAE antiserum (EAE-AS) and naive antiserum (Naive-AS) as primary antibodies. Additionally, immunohistochemistry (IHC) and double immunofluorescence (dIF) was performed on normal mouse brain sections from neonates, postnates and adults (P3, P17 and 3months) stained with antisera. Commercially available MOG antibody (anti-MOG) was used as positive control and anti-BrdU as NPCs marker.

Results: Western blot indicated specific bands (60KDa and 40-46KDa) in NPCs substrate using EAE-AS, none of which corresponded to MOG. IHC exhibited EAE-AS-though not Naive-AS-positive cells in subventricular zone and periventricularly in all three ages (p<0.0001). In addition, EAE-AS revealed significantly higher affinity to BrdU(+) cells, with dIF, when compared with anti-MOG: P3: 45.43±8.112% versus 10.92±4.225% (p<0.0027); P17: 50.64±9.207% versus 10.13±2.519% (p<0.0005); 3months: 88.54±7.542% versus 19.49±11.43% (p<0.0035), respectively.

Conclusions: Activation of the immune system against MOG35-55 induces the production of antibodies which may recognize epitopes other than MOG on NPCs. The role of autoantibodies both in EAE and MS remains controversial and further research is required.

Disclosure: Nothing to disclose

PP4224
P-ANCA isolated cranial pachymeningitis: a case report

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Pachymeningitis (PM) is a rare disorder, characterized by inflammatory process that thickens the dura mater. It may occur in association with a number of underlying disorders, but most cases have been considered to be idiopathic. We present a case of a patient who developed perinuclear antineutrophil cytoplasmic antibody (p-ANCA) PM. A 51-years old female patient was admitted to our department because of severe headache and multiple cranial neuropathies (IX., X., XII. nerve). Magnetic resonance imaging (MRI) showed thickening of dura mater, highly enhanced after gadolinium administration. Full blood count, biochemical profile, sedimentation rate and C reactive protein were normal. Lumbar puncture demonstrated clear watery cerebrospinal fluid (CSF) with lymphocytic pleocytosis and elevated level of protein and negative culture. The level of MPO-ANCA was elevated, 115 U/L. With extensive investigation, we excluded impairment of other organs, lung, kidney and eyes. A biopsy of dura mater showed area of granulomatosis inflammation with no sign of vacuities. A course of methylprednisolone was initiatted, followed by oral corticosteroid and intravenous injection of cyclophosphamide once a month for 6 months. There was a rapid improvement in headache and in the level MPO-ANCA, 52U/L. In our case, diagnosis of PM was made on the basis of MRI data, clinical presentation, elevated MPO-ANCA and results of biopsy of dura mater. In conclusion, in a patient who is P-ANCA positive, complains of headache, the MRI is necessary to role out PM. Early recognition and treatment is necessary to prevent definitive neurological impairment.

Disclosure: Nothing to disclose
PP4225

Adult post-streptococcal basal ganglia encephalitis

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Introduction: Post-streptococcal central nervous system disease comprises a wide range of clinical pictures, including extrapyramidal movement disorders. There is increasing evidence that these disorders are autoimmune, mediated by antibodies that bind and cause dysfunction specifically in the basal ganglia.

Case report: A 27-year-old female with no relevant medical history presented with headache, vomiting, right leg and perioral involuntary movements, and marked mental status deterioration progressing over hours. One week before she and her 9-month-old daughter suffered from a mild febrile syndrome. Neurological examination revealed upward gaze limitation, mild right hemiparesis, oral myoclonic movements, sialorrhoea, chorea on left abdomen and right leg. Initial analytic work-up, CSF analysis and head CT were normal. Electroencephalogram showed diffuse encephalopathy. An extensive laboratory investigation was performed revealing persistent elevated anti-streptolysin O titer and excluding other infectious, metabolic, hormonal and autoimmune etiologies, including NMDAR encephalitis. Brain MRI showed swelling hyperintense T2-signal of lentiform and caudate nuclei and hippocampi. Despite high doses intravenous steroids, she continued worsening. Intravenous immunoglobulin G (IVIG) was initiated and progressive clinical improvement was observed. Anti-basal ganglia antibodies (ABGA), tested after steroids and IVIG treatment, were negative. After three months, she regained full previous cognitive and functional status. There was also significant imaging improvement.

Conclusions: We discuss a case of basal ganglia encephalitis of probable post-streptococcal origin. Although ABGA was undetectable, the elevation of anti-streptolysin O titer and the distinct neuroimaging pattern suggests that the underlying pathophysiology might involve a selective autoimmune process against the striatum triggered by streptococcus epitope cross-reactivity.

Disclosure: Nothing to disclose

PP4226

Seronegative autoimmune encephalitis after CHOP-Rituximab in a patient with non-Hodgkin lymphoma

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Introduction: Autoimmune limbic encephalitis is a rare immune-mediated inflammatory condition of the CNS. Increasing evidence suggests that previously considered seronegative autoimmune encephalitis have in fact an undetected immune-mediated pathophysiology.

Case report: We report the case of a 63-year-old woman with a low grade mandibular non-Hodgkin lymphoma, submitted to chemotherapy with CHOP and Rituximab with progression into hematologic remission, that six months later insidiously developed apathy, hypersomnolence and memory impairment. On clinical examination there was severe amnestic compromise, and temporal and spatial disorientation. MRI showed bilateral temporal and diencephalic T2 hyperintensities. EEG revealed diffuse slowing and FIRDAs. Cytological and immunologic CSF evaluation was normal, and no malignant cells were observed. PCR detection of neurotropic and JC viruses were negative. There was no evidence of lymphoma relapse or other neoplasia, including whole body PET. Systemic autoimmune disease markers, as well as cytoplasmic and membrane anti-neuronal antibodies were negative. After 5 days of IV methylprednisolone and 21 days of IV acyclovir, no clinical response occurred and MRI showed extensive bilateral temporal pole involvement. Five sessions of plasmapheresis were performed with sustained clinical and electroencephalographic improvement, without further imagiologic progression.

Discussion: Despite this, an infectious origin cannot be completely ruled out and no markers of an immune-mediated disorder were found, the neuroimaging pattern and response to plasmapheresis are highly suggestive of an autoimmune paraneoplastic etiology. Our case prompts consideration of plasmapheresis as a therapeutic option even without determined autoantibodies. The role of prior immunomodulation with Rituximab probably deserves to be further elucidated.

Disclosure: Nothing to disclose
PP4227

Clinical correlation of single fibre electromyography parameters in patients with MG

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Introduction: Predicting the clinical course of myasthenia gravis (MG) at the time of diagnosis could be useful. Single fibre electromyography (SFEMG) is a routine and sensitive investigation for the diagnosis of MG. We explored the relationship between SFEMG parameters and clinical course in our MG patients. This study is to determine the correlation of baseline SFEMG parameters with the clinical course in patients with MG.

Methods: Seventy seven MG patients followed up in the Neurology clinic were retrospectively studied. All had a baseline diagnostic SFEMG done within 4 to 6 weeks of MG diagnosis. The severity of MG was scored from 1 to 7 depending on the extent of weakness. The clinical course in terms of severity of MG and requirement of immuno-suppressants were studied and correlated with the baseline SFEMG parameters.

Results: Patients with higher clinical scores had significantly higher mean jitter (MJ) and percentage of abnormal fibres (POAF) (MJ=90.2 µsec and POAF=89.6%) as compared to patients with lower clinical scores (MJ=51.5 µsec; POAF=59.9%) [p=0.0001 for both MJ and POAF]. The MJ and POAF in patients requiring immunosuppressants (MJ=77.0 µsec; POAF=82%) were significantly higher as compared to patients who required pyridostigmine only. (MJ=58.5 µsec; POAF=62.7%) [p=0.02 and 0.003 for MJ and POAF respectively].

Conclusions: Baseline SFEMG parameters seem to correlate with the severity of MG. A further prospective study to explore this relationship would be useful to establish the prognostic value of SFEMG in MG patients at the time of diagnosis.

Disclosure: Nothing to disclose

PP4228

Role of Anti GQ1b antibodies in ophthalmoplegia and optic neuropathy unrelated to Miller-Fisher syndrome spectrum

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Introduction: Antigangliosides GQ1b antibodies (GQ1bAbs) are known to be significantly elevated in Miller-Fisher syndrome spectrum (MFS). While sensitivity of GQ1bAbs in MFS is well recognized (>90%), data about specificity are lacking. Since GQ1b gangliosides localize on oculomotor and optic nerves sheaths, we hypothesized that other causes of acute ophthalmoplegia (AO) and optic neuritis (ON) than mere MFS could be accompanied by an increase in GQ1bAbs.

Methods: We searched for GQ1bAbs in serum and CSF of patients with AO, ON and MFS. GQ1bAbs were measured by standard assays and expressed in percentage (100%=12,000 U; range associated with MFS: 50-100%). Cutoff values above 30% were used to define a positive test result.

Results: Clinical and biological findings from 22 AO (22 serum, 9 CSF) and 13 ON (13 serum, 13 CSF) are shown in table 1 and 2. 5/6 MFS had elevated GQ1bAbs >140% either in serum or in CSF (4 serum, 5 CSF). More than 95% AO presented serum GQ1bAbs below 30%; only one patient had a slightly elevated titer (30.1%) in serum (CSF not available) and one had highly elevated values (>160%) in serum but not in CSF (which was considered to be aspecific). None of the ON subjects presented elevated GQ1bAbs in serum nor in CSF. Specificity of GQ1bAbs in serum was 91% in AO group (95% CI: 71-98 %) and 100% in ON group (95% CI: 75-100 %).

Conclusions: GQ1bAbs seem not to be increased in aetiologies of AO and ON other than MFS.

Disclosure: Nothing to disclose
PP4229
Cerebral venous thrombosis as the first manifestation of isolated antiphospholipid syndrome
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PP4230
α-galactosylceramide enhanced TNF-α and decreased anxiety-like behaviors in post-weaning social isolation
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PP4231
Atypical Devic disease as first manifestation of Sjögren syndrome: a case report
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PP4232
Trigeminal neuralgia in Behçet’s disease
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PP4233
VGKC-complex-LGI1-antibody encephalitis: clinical course and immunotherapy influence on seizure control and long-term cognitive prognosis
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PP4234
An atypical phenotype of anti-GQ1b antibody syndrome in an 81-year-old woman
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PP4235
Abstract withdrawn

PP4236
The role of plasmapheresis when treating neurological symptoms associated with inflammatory bowel disease: a case report
M. Fernandez-Fournier, Y. Llamas, I. Puertas, A. Tallon
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PP4237
Steroid responsive leukencephalopathy in cerebral amyloid angiopathy without bioptical evidence of vasculitis
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PP4238
Anti-NMDA receptor encephalitis (case report)
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PP4239

Late onset recurrent longitudinal myelitis with autoantibodies to aquaporin-4 with first manifestation in an 88-year-old patient

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PP4240

Limbic encephalitis, hyponatremia, faciobrachial dystonic seizure associated with voltage-gated potassium channel antibodies

V. Ibarra, A. JaureguiBerry, C. Torres, G. Moretta, G. Lazzarini, R. Ceruzzi, E. Reich
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PP4241

Acute disseminated encephalomyelitis after oral therapy with herbal extracts: a case report

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PP4242

Hemorrhagic pontine stroke associated with Hashimoto encephalopathy: a case report

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PP4243

Abstract withdrawn

PP4244

Localization and viability of neural stem cells after therapeutic intrathecal transplantation in experimental autoimmune encephalomyelitis

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PP4245

Effect of pregabalin and diclofenac on tactile alldynia, mechanical hyperalgesia and increase in pro-inflammatory cytokines induced by chronic constriction injury of the infraorbital nerve

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PP4246

Severe reversible paraneoplastic encephalitis

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PP4247

Evidence based medicine changes the approach to the Rx of myasthenia gravis

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PP4248

Abstract withdrawn
PP4249  
Interleukin-17 impedes Schwann cell-mediated myelination  
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PP4250  
Three cases of autoimmune encephalitis  
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Teaching and Medical Research Center, Ankara, Turkey

PP4251  
Diagnostic role of immunological characteristics in chronic brain ischemia  
D. Usmanova  
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PP4252  
Biochemical markers of the chronic brain ischemia  
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