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WebPoster

The clinical spectrum of MOG antibody-associated demyelinating events: a case series.

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Objective: Myelin Oligodendrocyte glycoprotein (MOG) is a component of myelin, exclusively expressed in the CNS on the outermost surface of the oligodendrocytes. MOG antibodies might be associated with a broad spectrum of acquired human CNS demyelinating diseases. The presence of MOG antibodies at the first clinical episode suggestive of CNS demyelinating syndrome seems to predict recurrence and marks a quite good long-term prognosis. The aim of our study was to investigate clinical, CSF and MRI features of a cohort of patients at the first clinical episode suggestive of CNS demyelinating syndrome showing anti-MOG antibodies.

Patients and Methods: Eighty consecutive patients examined at the first clinical episode suggestive of CNS demyelinating syndrome (CIS) were included in the study. Serum anti-AQP4 and anti-MOG antibodies were assessed by using specific Cell-Based home made Assays.
Median follow-up period was:1.5 years (range:0.1-9).

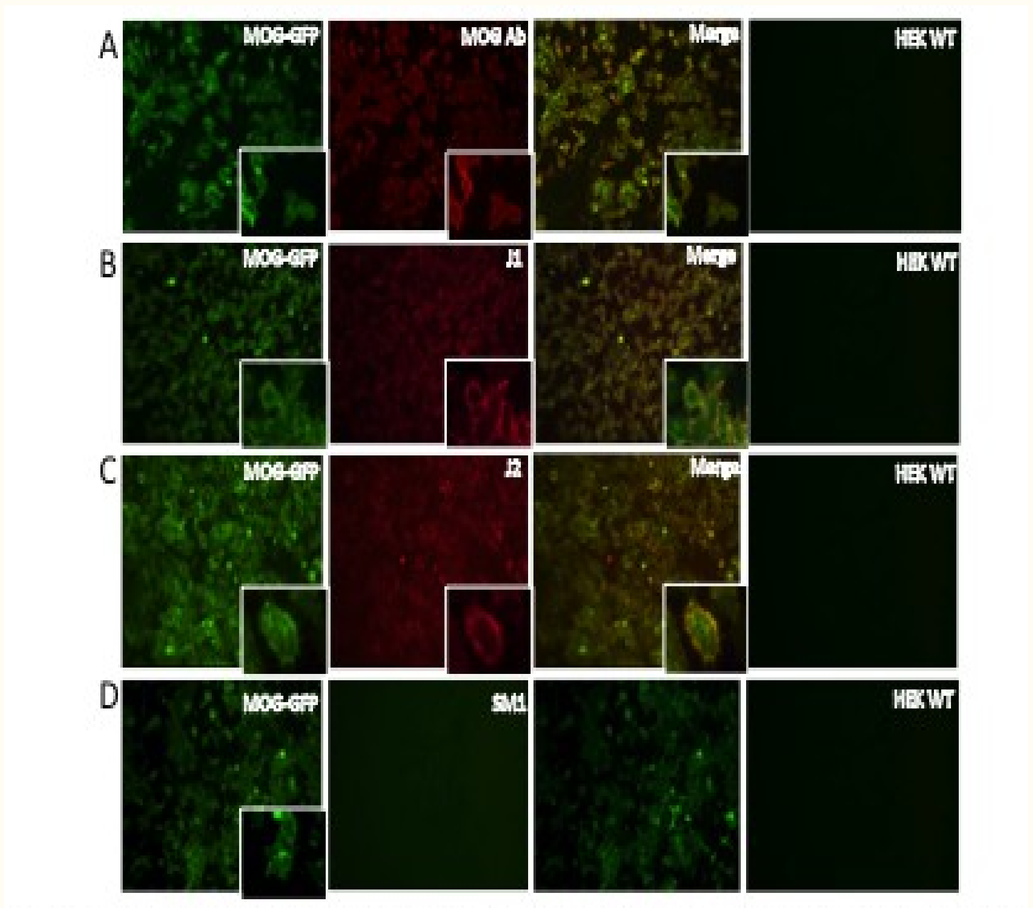

FIGURE. Cell Based Immunofluorescence Assay (CBA) performed on HEK 293 expressing human MOG Alpha-1 fused to GFP. The GFP tag was inserted to evaluate the expression levels of MOG (green staining). In red is shown the immunofluorescence staining using commercial antibody (A), two MOG-positive (J1, J2) patient's sera (B,C) and one negative serum of a MS patient (SM1). Non transfected cells (HEK WT) were used as negative control. Magnification 20X. *Inset* shows an higher magnification (100x) of the staining on a single transfected cell.

Results:

- 14/80 (17.5%) CIS patients showed serum anti-MOG antibodies.
- None of the anti-MOG positive patients was anti-AQP4 positive.

Table 1. Clinical and MRI characteristics of anti-MOG positive CIS patients at onset	
Sex (Female/Male)	8/6
Age (Mean±SD) (yrs)	32,3 ± 4,3
Clinical presentation - Optic Neuritis - Myelitis - Brainstem Syndrome - Diencephalic Syndrome	 4 (28.6%) 6 (42.8%) 2 (14.3%) 1 (7.1%)
Concomitant Encephalopathy (no of pts)	2 (7%)
MRI Dissemination in Space at onset (no of pts)	7 (50%)
EDSS [Median (Range)] at onset	1.5 (range:0-3.5)
Presence of CSF oligoclonal IgG synthesis (no of pts) CSF leucocytes count [Median (range)] CSF/serum albumin ratio [Median (range)]	5 (41,7%) 4.0 (range 1-50) 4.0 (range:2.1-47).
Patients relapsing during follow-up Evolution to NMOSD during follow-up	7 (50%) 2 (14.3%)

- All patients but two recovered after high-dose steroids. Rescue therapy of relapse with IgG iv and/or PLEX was required in 2 patients.
- The relapsing patients were treated with long-term steroids (no.1) or azathioprine (no.4). One relapsing pediatric patient received no long-term treatment still. One relapsing patient was lost at follow-up.
- One monophasic patient was treated with azathioprine because of severe residual visual deficit after first event. Mean follow-up period under DMDs therapy is too short to extrapolate treatment benefit.

Conclusion: The presence of serum anti-MOG antibodies is not a rare event at the onset of first clinical episode suggestive of CNS demyelinating syndrome. MRI and CSF characteristics of these patients may overlap with that of Acute Disseminated Encephalomyelitis, Multiple Sclerosis or NMOSD. Even if further studies are needed, the identification of CNS MOG-related demyelination is challenging since potentially claim B-cell specific therapeutic long-term strategy.
Long term follow-up are needed to evaluate prognosis.

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Polman, C. H., Reingold, S. C., Banwell, B et al. Diagnostic criteria for multiple sclerosis: 2010 Revisions to the McDonald criteria. Ann Neurol 2011, 69: 292–302 .