

eTable 1**A**

	HC (n = 12)	MS (total) (n = 58)	MS (not in relapse) (n = 51)	MS (relapse) (n = 7)	NMOSD (n = 10)	
Age (mean [SD])	37.8 [6.2]	41.7 [11.0]	42.0 [11.6]	39.3 [5.2]	51.9 [16.1]	
M : F	7 : 5	20 : 38	18 : 33	2 : 5	2 : 8	
Disease duration (years) (mean [SD])	NA	9.5 [8.0]	9.6 [8.3]	8.5 [5.1]	10.1 [8.9]	
EDSS (median [range])	NA	3 [1 - 8.5]	3 [1 - 8.5]	4 [1 - 8]	4 [2-6.5]	
RRMS : SPMS : PPMS	NA	46 : 10 : 2	39 : 10 : 2	7 : 0 : 0	NA	
maintenance treatment	GA	NA	1	1	0	0
	IFN-b	NA	15	13	2	0
	fingolimod	NA	1	1	0	0
	natalizumab	NA	8	7	1	0
	steroid	NA	27	25	2	7
	IS	NA	11	9	2	5

B

eTable 1. Demographic of all the participants

(A) The participants for Figure 1, 2 and eFigure 2A, B. One of ten patients with NMOSD was in a relapse state. The details of IS drugs are as follows: MS (not in relapse): azathioprine 4, methotrexate 3, tacrolimus 1, tocilizumab 1; MS (relapse): azathioprine 2; NMOSD: tacrolimus 3, bucillamine 1, mizoribine 1 (B) The participants for Figure 3, 4, and eFigure 2C, D, 3. Control: idiopathic normal pressure hydrocephalus, delirium, attention-deficit hyperactivity disorder, bipolar disorder with old intracranial hemorrhage; acute inflammation (in an acute state): bacterial meningitis, varicella zoster virus (VZV) meningitis, VZV myelitis, aseptic meningoencephalitis, myelitis, clinically isolated syndrome (CIS), optic neuritis (MOG antibody-associated disease), neurosarcoidosis; Chronic inflammation (not in an acute state): CNS-lupus, PPMS, anti-VGKC antibody encephalitis, Japanese encephalitis, recurrent myelitis; AD: four patients with AD and four with MCI due to AD. The samples were analyzed in Kyoto University for the left six categories, and in National Center of Neurology and Psychiatry for the right MS category (MS^{*}). All four patients in MS^{*} category were not in a relapse state. HC: healthy control; MS: multiple sclerosis; RRMS: relapsing-remitting MS; SPMS: secondary progressive MS; NMOSD: neuromyelitis optica spectrum disorder; GA: Glatiramer acetate; IS: immunosuppressant; CSF: cerebrospinal fluid; PD: Parkinson's disease; AD: Alzheimer's disease; MCI: mild cognitive impairment; ALS: amyotrophic lateral sclerosis; MMSE: mini-mental state examination.