

Supplementary Material

Granulocyte and astrocyte markers-distinguish MOG-antibody disease and neuromyelitis optica from MS

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Supplementary Results

Impact of immunomodulatory and corticosteroid therapy prior lumbar puncture on GAM levels

GAM levels both in acute and s/c stages showed a wide range that overlapped between those with vs without corticosteroid or immunomodulatory therapy prior LP among all three diseases (Supplementary Fig. 3). Similarly, this was the case for GFAP, S100B, and C5/C5a levels. None of the comparisons of biomarker levels between treated vs non-treated MOGAD and NMOSD patients were significant, or showed a trend supporting the hypothesis that chronic treatment decreased expression levels in acute or s/c phase. For NMOSD, these findings are congruent with those of our earlier study.¹ We therefore conclude that the higher GAM levels in MOGAD vs NMOSD (Fig. 1A) do not result from the higher percentage of NMOSD under pharmacological therapy.

Comparison of aAQP4⁺ vs aAQP4⁻ NMOSD patients

aAQP4⁻ patients in acute stage (n=8) had statistically lower levels of nEla and MPO than those being aAQP4⁺ (n=23), while for all other markers they were not different (Supplementary Table 4). The former results need to be interpreted with caution due to the low sample numbers available for this comparison. Further, in the earliest period after disease exacerbation, i.e. when levels of GAM are highest (Fig. 3), aAQP⁻ samples were underrepresented (between day 0 to 3 after exacerbation all six samples originated from aAQP4⁺ patients; at and below the 2nd quartile border (day 0 to 4.5 after exacerbation), only 1 out of 8 samples was from an aAQP⁻ patient (Supplementary Fig. 1). In s/c stage there was no difference in function of the aAQP4 serostatus for any marker (not shown).

Supplementary Table 1 Demographic and clinical data on 'symptomatic controls'

SC#	Age (years); sex	Symptoms	Final diagnosis	Relevant co-medication	Interval between symptom onset and LP (days)
1	32, F	dizziness	no neurological disorder	no	637
2	20, F	paraesthesia right body side	no neurological disorder	no	2
3	20, F	subjective vision loss	transient psychogenic vision loss	no	51
4	23, F	pain and walking impairment	acute low back pain, no neurological disease	no	16
5	54, F	diplopia	no neurological disease	no	13
6	32, F	dizziness	dizziness in migraine with aura	no	13
7	48, F	pain and walking impairment	fibromyalgia	no	n/a
8	21, F	asthenia	chronic fatigue syndrome	no	63
9	49, F	pain and walking impairment	somatic symptom disorder	no	n/av
10	24, F	right hemiparesis	somatic symptom disorder and panic disorder	no	n/av
11	29, M	intermittent vision decrease	drusen	no	14
12	36, M	blurred vision, temporal headache	no neurological disorder	no	15
13	36, F	focusing problem, headache	no neurological disorder	no	48
14	25, F	twitch upper eyelids, eye pain	no neurological disorder	no	35
15	31, F	moving spots in visual field	no neurological disorder	no	35
16	34, M	monosymptomatic blurred vision	no neurological disorder	no	37
17	26, F	pulse headache, periorbital pain	no neurological disorder	no	28
18	35, F	confluent vision, focus problem	anisometry	no	25
19	81, M	slowly fading colour vision	staphyloma	no	240

Abbreviation: n/av = not available

Supplementary Table 2 Statistical analysis of MOGAD, NMOSD, MS and SC in acute (A) and s/c (B) stages

A:

N	MOGAD 40	NMOSD 31	MS 45	SC ^a 19	MOGAD vs MS	NMOSD vs MS	MOGAD vs NMOSD	MOGAD vs SC	NMOSD vs SC	MS vs SC
	median [IQR]				P-value					
nEla	52.2 [18.8, 162.0]	19.5 [7.5, 48.8]	19.5 [6.2, 19.5]	3.9 [2.8, 5.8]	<0.001	0.153	0.034	<0.001	<0.001	<0.001
MPO	249.0 [59.3, 1541.0]	113.0 [32.1, 380.5]	22.1 [0.5, 215.5]	23.3 [2.7, 38.0]	<0.001	0.018	0.051	<0.001	0.002	0.651
MMP-8	42.4 [15.2, 83.1]	18.9 [11.1, 39.3]	8.7 [6.0, 14.7]	7.2 [4.2, 13.0]	<0.001	0.001	0.035	<0.001	0.008	0.246
NGAL	1360.0 [1062.0, 2072.8]	1217.0 [814.5, 1699.5]	617.0 [497.0, 912.0]	771.0 [629.0, 956.5]	<0.001	<0.001	0.348	0.001	0.004	0.078
MMP-9	114.5 [33.8, 828.5]	115.0 [18.6, 1815.0]	482.0 [233.0, 1716.0]	45.6 [14.7, 225.0]	0.017	0.042	0.903	0.061	0.130	<0.001
GFAP	358.5 [193.8, 567.2]	1307.0 [573.0, 7765.5]	497.0 [374.0, 626.0]	350.0 [268.0, 412.5]	0.039	<0.001	<0.001	0.929	<0.001	0.009
S100B	105.4 [66.3, 160.2]	194.0 [139.5, 309.0]	172.0 [139.0, 208.0]	162.0 [130.0, 269.5]	<0.001	0.146	<0.001	0.001	0.424	0.763
NfL	1282.0 [730.5, 2813.0]	2815.0 [1869.5, 6900.0]	2016.0 [1260.0, 4465.0]	378.0 [317.5, 856.5]	0.044	0.097	0.004	0.005	<0.001	<0.001
C5	53.2 [32.0, 180.0]	52.1 [25.3, 96.3]	26.7 [16.8, 40.8]	20.8 [12.9, 40.0]	<0.001	0.001	0.391	<0.001	0.001	0.314
C5a	80.6 [36.3, 301.0]	48.1 [26.8, 105.4]	32.0 [18.2, 42.6]	24.8 [15.3, 49.4]	<0.001	0.005	0.112	<0.001	0.010	0.562

B:

N	MOGAD 31	NMOSD 17	MS 80	SC ^a 19	MOGAD vs MS	NMOSD vs MS	MOGAD vs NMOSD	MOGAD vs SC	NMOSD vs SC	MS vs SC
	median [IQR]				P-value					
nEla	19.5 [4.5, 29.6]	10.8 [5.1, 19.5]	19.5 [4.3, 19.5]	3.9 [2.8, 5.8]	0.642	0.537	0.572	0.005	0.017	<0.001
MPO	25.9 [2.0, 103.0]	15.4 [0.0, 53.7]	19.2 [2.4, 67.9]	23.3 [2.7, 38.0]	0.792	0.654	0.479	0.404	0.936	0.659
MMP-8	10.1 [7.1, 30.0]	12.3 [5.8, 28.3]	7.8 [5.1, 11.8]	7.2 [4.2, 13.0]	0.018	0.058	0.872	0.095	0.141	0.793
NGAL	849.0 [678.0, 1248.5]	810.0 [619.0, 1075.0]	883.5 [704.8, 1114.0]	771.0 [629.0, 956.5]	0.750	0.553	0.525	0.250	0.646	0.248
MMP-9	134.0 [17.6, 426.5]	191.0 [19.6, 878.0]	470.0 [144.2, 1078.5]	45.6 [14.7, 225.0]	0.005	0.160	0.510	0.161	0.109	<0.001
GFAP	511.0 [292.5, 831.5]	551.0 [382.0, 841.0]	539.0 [376.0, 698.2]	350.0 [268.0, 412.5]	0.631	0.474	0.438	0.080	0.015	0.002
S100B	152.0 [91.2, 185.0]	137.0 [71.1, 198.0]	179.5 [143.8, 232.8]	162.0 [130.0, 269.5]	0.008	0.031	0.674	0.062	0.051	0.986
NfL	1871.0 [1024.5, 5392.5]	1051.0 [504.0, 2607.0]	1443.0 [886.8, 2690.5]	378.0 [317.5, 856.5]	0.264	0.333	0.215	<0.001	0.007	<0.001
C5	39.7 [23.9, 61.9]	50.5 [31.9, 184.0]	31.2 [21.1, 46.9]	20.8 [12.9, 40.0]	0.160	0.012	0.267	0.016	0.004	0.047
C5a	46.6 [30.0, 97.5]	58.1 [33.5, 210.0]	42.0 [26.2, 68.1]	24.8 [15.3, 49.4]	0.127	0.097	0.889	0.007	0.007	0.023

All biomarker levels are expressed as median [IQR] in pg/ml except for C5 (ng/ml). ^aThe SC group is identical in A and B. Background colour of P-values related to positive association: green: ≤0.05; yellow: 0.05-0.10; red: >0.10.

Supplementary Table 3 Correlation of C5 (A) and C5a (B) with other biomarkers by diagnosis in acute and overall or s/c stages

A:

	MOGAD		NMOSD		MS	
	acute 40	s/c 31	acute 31	s/c 17	acute 45	s/c 78
nEla	0.32 [0.01, 0.58], 0.041	0.07 [-0.29, 0.41], 0.705	0.19 [-0.18, 0.51], 0.315	-0.25 [-0.65, 0.27], 0.342	0.21 [-0.09, 0.47], 0.170	0.19 [-0.04, 0.39], 0.102
MPO	0.27 [-0.05, 0.53], 0.097	0.11 [-0.25, 0.45], 0.550	-0.02 [-0.37, 0.33], 0.899	-0.13 [-0.58, 0.37], 0.614	-0.37 [-0.60, -0.08], 0.014	0.04 [-0.18, 0.26], 0.704
MMP-8	0.43 [0.13, 0.65], 0.006	0.17 [-0.19, 0.50], 0.349	0.28 [-0.09, 0.57], 0.132	0.45 [-0.04, 0.77], 0.070	0.16 [-0.14, 0.43], 0.305	0.47 [0.28, 0.63], <0.001
NGAL	0.52 [0.25, 0.72], <0.001	0.27 [-0.09, 0.57], 0.138	0.53 [0.21, 0.74], 0.002	0.29 [-0.22, 0.68], 0.252	0.56 [0.32, 0.73], <0.001	0.20 [-0.02, 0.40], 0.079
MMP-9	0.14 [-0.18, 0.43], 0.400	-0.01 [-0.37, 0.34], 0.947	0.16 [-0.20, 0.49], 0.377	0.22 [-0.29, 0.63], 0.403	0.17 [-0.13, 0.44], 0.257	0.08 [-0.15, 0.30], 0.487
GFAP	0.02 [-0.29, 0.33], 0.907	0.08 [-0.29, 0.42], 0.682	0.07 [-0.29, 0.41], 0.706	-0.01 [-0.48, 0.48], 0.984	0.20 [-0.10, 0.47], 0.190	0.04 [-0.19, 0.26], 0.744
S100B	-0.22 [-0.50, 0.10], 0.169	-0.34 [-0.62, 0.01], 0.060	-0.17 [-0.49, 0.20], 0.365	-0.41 [-0.74, 0.09], 0.102	0.22 [-0.08, 0.48], 0.154	-0.22 [-0.42, -0.00], 0.049
NfL	0.05 [-0.27, 0.36], 0.760	-0.06 [-0.40, 0.30], 0.756	0.12 [-0.25, 0.46], 0.541	0.40 [-0.10, 0.74], 0.112	0.12 [-0.18, 0.40], 0.416	0.12 [-0.10, 0.34], 0.278

B:

	MOGAD		NMOSD		MS	
	acute 40	s/c 31	acute 31	s/c 17	acute 45	s/c 78
nEla	0.35 [0.04, 0.59] 0.029	0.05 [-0.31, 0.39] 0.806	0.18 [-0.19, 0.50] 0.332	-0.24 [-0.64, 0.28] 0.362	0.14 [-0.16, 0.42] 0.359	0.23 [0.01, 0.43] 0.045
MPO	0.27 [-0.04, 0.54] 0.090	0.07 [-0.29, 0.41] 0.710	-0.02 [-0.37, 0.33] 0.900	-0.11 [-0.56, 0.39] 0.682	-0.39 [-0.62, -0.11] 0.009	0.01 [-0.22, 0.23], 0.995
MMP-8	0.44 [0.15, 0.66] 0.005	0.14 [-0.22, 0.47] 0.444	0.29 [-0.07, 0.58] 0.117	0.48 [-0.00, 0.78] 0.053	0.12 [-0.18, 0.40] 0.437	0.43 [0.23, 0.59] <0.001
NGAL	0.52 [0.25, 0.72] 0.001	0.23 [-0.14, 0.54] 0.215	0.53 [0.22, 0.75] 0.002	0.32 [-0.19, 0.69] 0.215	0.55 [0.31, 0.73] <0.001	0.11 [-0.12, 0.32] 0.347
MMP-9	0.11 [-0.21, 0.40] 0.515	-0.06 [-0.41, 0.30] 0.748	0.16 [-0.20, 0.49] 0.385	0.21 [-0.30, 0.63] 0.412	0.14 [-0.16, 0.42] 0.342	0.10 [-0.13, 0.32] 0.383
GFAP	-0.06 [-0.36, 0.26] 0.716	0.01 [-0.35, 0.36] 0.970	0.05 [-0.31, 0.40] 0.786	0.04 [-0.45, 0.51] 0.884	0.22 [-0.08, 0.48] 0.142	-0.10 [-0.31, 0.13] 0.405
S100B	-0.27 [-0.54, 0.04] 0.086	-0.38 [-0.65, -0.03] 0.034	-0.19 [-0.51, 0.17] 0.296	-0.41 [-0.74, 0.09] 0.105	0.26 [-0.04, 0.51] 0.088	-0.30 [-0.49, -0.08] 0.008
NfL	0.01 [-0.31, 0.33] 0.947	-0.09 [-0.43, 0.27] 0.618	0.13 [-0.25, 0.46] 0.509	0.43 [-0.07, 0.75] 0.087	0.15 [-0.15, 0.42] 0.338	0.03 [-0.20, 0.25] 0.814

Numbers are ρ [CI] (first line) and P -values (second line) in each box. As shown in Supplementary Fig. 2 values of C5 and C5a are highly correlated and hence lead to the same pattern of correlation with referring markers. Background colour of P -values related to positive association: green: ≤ 0.05 ; yellow: 0.05-0.10; red: > 0.10 . Negative correlations are depicted in white background.

Supplementary Table 4 Levels of markers according aAQP4 serostatus

aAQP4 serostatus N	acute		P-value
	- 8	+ 23	
nEla	8.4 [5.3, 16.7]	19.5 [15.8, 88.8]	0.016
MPO	26.8 [5.4, 83.9]	168.0 [51.5, 512.5]	0.058
MMP-8	14.4 [9.7, 18.9]	20.2 [13.1, 65.2]	0.148
NGAL	857.0 [768.8, 1460.5]	1313.0 [925.0, 1867.0]	0.190
MMP-9	72.8 [0.0, 150.5]	192.0 [34.5, 2307.5]	0.220
GFAP	1017.5 [545.5, 1465.2]	1718.0 [663.5, 21945.0]	0.190
S100B	212.0 [125.5, 259.2]	194.0 [148.5, 498.0]	0.718
NfL	2094.0 [1449.0, 9063.0]	2860.0 [2032.0, 6656.0]	0.902
C5	37.8 [33.7, 57.5]	66.5 [24.4, 122.3]	0.588
C5a	41.2 [34.8, 57.8]	69.2 [24.5, 152.4]	0.619

Values represent median [IQR] in ng/ml for C5, and pg/ml for all other markers.

Background colour of P-values related to positive association: green: ≤0.05; yellow: 0.05-0.10; red: >0.10.

Supplementary Table 5 ROC analyses in acute disease phases to differentiate MOGAD and NMOSD from MS by GAM, and to differentiate NMOSD from MS and MOGAD by astrocyte damage markers

AUC [CI]		MOGAD/NMOSD vs MS	MOGAD vs MS	NMOSD vs MS	NMOSD vs MOGAD
nEla		0.676 [0.582, 0.770]	0.740 [0.628, 0.852]	0.592 [0.459, 0.726]	0.647 [0.518, 0.776]
MPO		0.721 [0.622, 0.819]	0.768 [0.666, 0.870]	0.661 [0.535, 0.786]	0.635 [0.506, 0.765]
MMP-8		0.780 [0.695, 0.865]	0.829 [0.732, 0.926]	0.718 [0.589, 0.846]	0.646 [0.515, 0.777]
NGAL		0.801 [0.716, 0.886]	0.810 [0.715, 0.905]	0.789 [0.685, 0.894]	0.565 [0.429, 0.701]
MMP-9		0.645 [0.544, 0.745]	0.650 [0.526, 0.774]	0.638 [0.498, 0.777]	0.492 [0.352, 0.631]
Composite 1 (nEla+MPO+MMP-8+NGAL+MMP-9) Sensitivity/Specificity identified as 'not MS' identified as 'NMOSD not MOGAD' identified as NMOSD of aAQP4 ⁻ patients	AUC [CI]	0.874 [0.808, 0.940]	0.923 [0.867, 0.979]	0.825 [0.724, 0.925]	0.690 [0.567, 0.814]
	%	87.3/79.5	92.5/81.8	74.2/86.4	77.4/62.5
	% (n/N)	87.3 (62/71) n/a 62.5 (5/8)	92.5 (37/40) n/a n/a	74.2 (23/31) n/a 50.0 (4/8)	n/a 77.4 (24/31) 75.0 (6/8)
Composite 2 (nEla+MPO+MMP-8+NGAL+MMP-9+C5) Sensitivity/Specificity identified as 'not MS' identified as 'NMOSD, not MOGAD' identified as NMOSD of all aAQP4 ⁻ patients ^a	AUC [CI]	0.880 [0.815, 0.945]	0.925 [0.870, 0.980]	0.837 [0.740, 0.935]	0.702 [0.581, 0.822]
	%	88.7/79.5	92.5/84.1	77.4/86.4	77.4/57.5
	% (n/N)	88.7 (63/71) n/a 75.0 (6/8)	92.5 (37/40) n/a n/a	77.4 (24/31) n/a 62.5 (5/8)	n/a 77.4 (24/31) 87.5 (7/8)
GFAP Sensitivity/Specificity identified as 'not MS' identified as 'not MOGAD' identified as NMOSD of all aAQP4 ⁻ patients ^a	AUC [CI]		0.630 [0.505, 0.755]	0.796 [0.676, 0.916]	0.844 [0.753, 0.934]
	%		40.0/91.1	64.5/97.8	71.0/87.5
	% (n/N)		40.0 (16/40) n/a n/a	64.5 (20/31) n/a 62.5 (5/8)	n/a 71.0 (22/31) 62.5 (5/8)
S100B Sensitivity/Specificity identified as 'not MS' identified as 'not MOGAD' identified as NMOSD of all aAQP4 ⁻ patients ^a	AUC [CI]		0.750 [0.640, 0.859]	0.599 [0.459, 0.738]	0.772 [0.661, 0.884]
	%		62.5/84.4	25.8/100	93.5/50.0
	% (n/N)		62.5 (25/40) n/a n/a	25.8 (8/31) n/a 1/8 (12.5%)	n/a 93.5 (29/31) 100 (8/8)
Composite 3 (GFAP+S100B) Sensitivity/Specificity identified as 'not MS' identified as 'not MOGAD' identified as NMOSD of all aAQP4 ⁻ patients ^a	AUC [CI]		0.746 [0.635, 0.857]	0.897 [0.829, 0.966]	0.843 [0.751, 0.934]
	%		62.5/84.4	74.2/91.1	71.0/87.5
	% (n/N)		62.5 (25/40) n/a n/a	74.2 (23/31) n/a 50.0 (4/8)	n/a 71.0 (22/31) 62.5 (5/8)

Numbers are AUC [CI] values per box. AUC values ≥ 0.80 (very good to excellent performance) are with green background. Numbers of aAQP4⁻ patients identified as NMOSD by algorithms are highlighted in blue. ROC curves are calculated on parameters based on a logistic model. Youden-index as estimated is used as cut-off. ^aPatients were identified by AUC score values above cut-off, defined by the Youden-index. Abbreviation: n/a = not applicable.

Supplementary Table 6 Correlation of EDSS scores with biomarker levels

A: Compounds with tissue damaging capacity, NfL and complement factors C5/5a

	MOGAD+NMOSD			
	all phases n=88		acute phases n=53	
	<i>rho</i>	<i>P</i> -value	<i>rho</i>	<i>P</i> -value
nEla	0.24	0.024	0.12	0.376
MPO	0.29	<0.01	0.24	0.085
MMP-8	0.32	<0.01	0.32	0.021
NGAL	0.39	<0.01	0.46	<0.01
MMP-9	0.21	0.051	0.28	0.041
NfL	0.34	<0.01	0.35	<0.01
C5	0.24	0.024	0.32	0.020
C5a	0.19	0.073	0.25	0.074

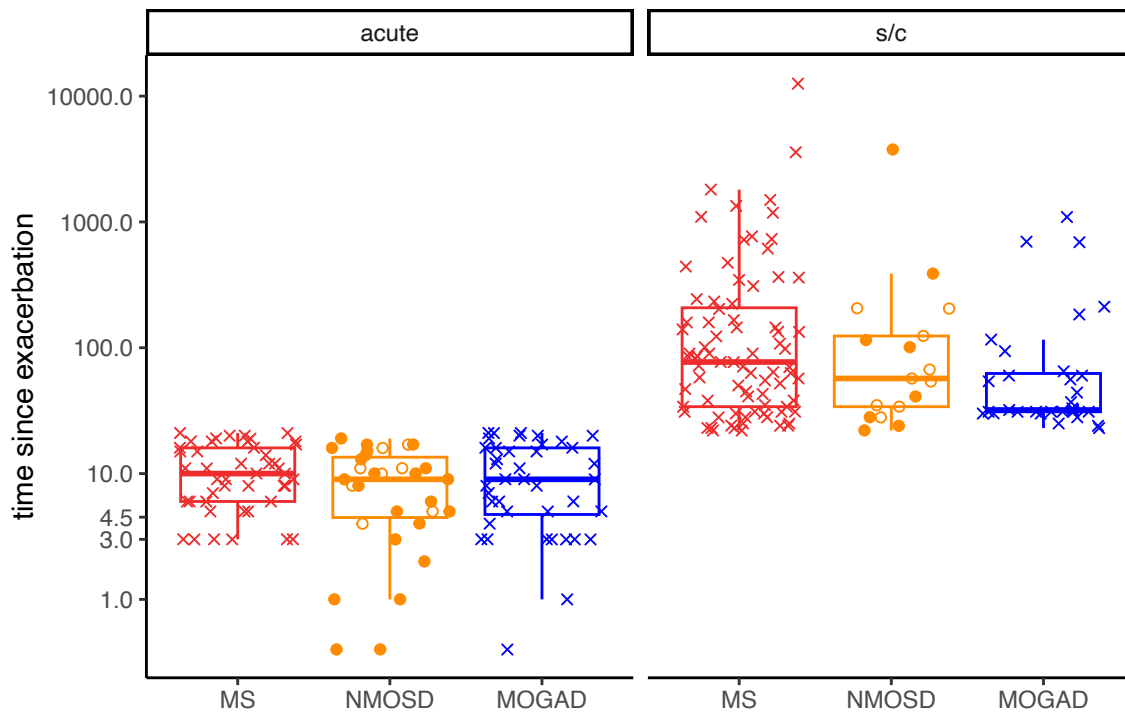
B: Astrocyte damage markers

	NMOSD n=29		MOGAD n=59		NMOSD n=18		MOGAD n=35	
	all phases				acute phase			
	<i>rho</i>	<i>P</i> -value	<i>rho</i>	<i>P</i> -value	<i>rho</i>	<i>P</i> -value	<i>rho</i>	<i>P</i> -value
GFAP	0.57	<0.01	0.24	0.065	0.41	0.089	0.33	0.056
S100B	0.57	<0.01	0.09	0.483	0.49	0.039	0.17	0.333

Patients with disease duration of ≤5 years at LP were compared.

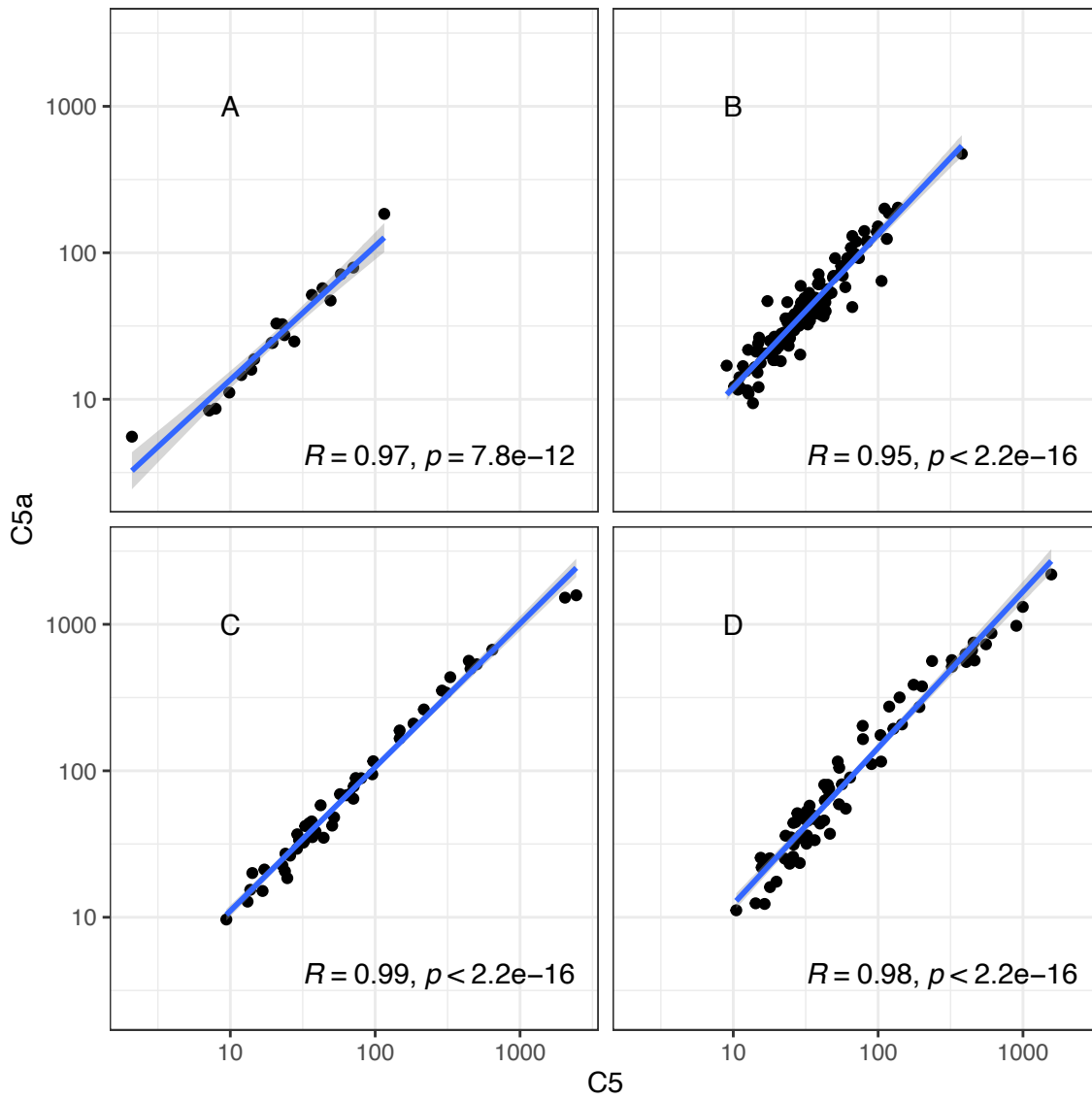
Background colour of *P*-values: green: ≤0.05; yellow: 0.05-0.10 ; red: >0.10.

Supplementary Figure 1 Time_between disease exacerbation and lumbar puncture



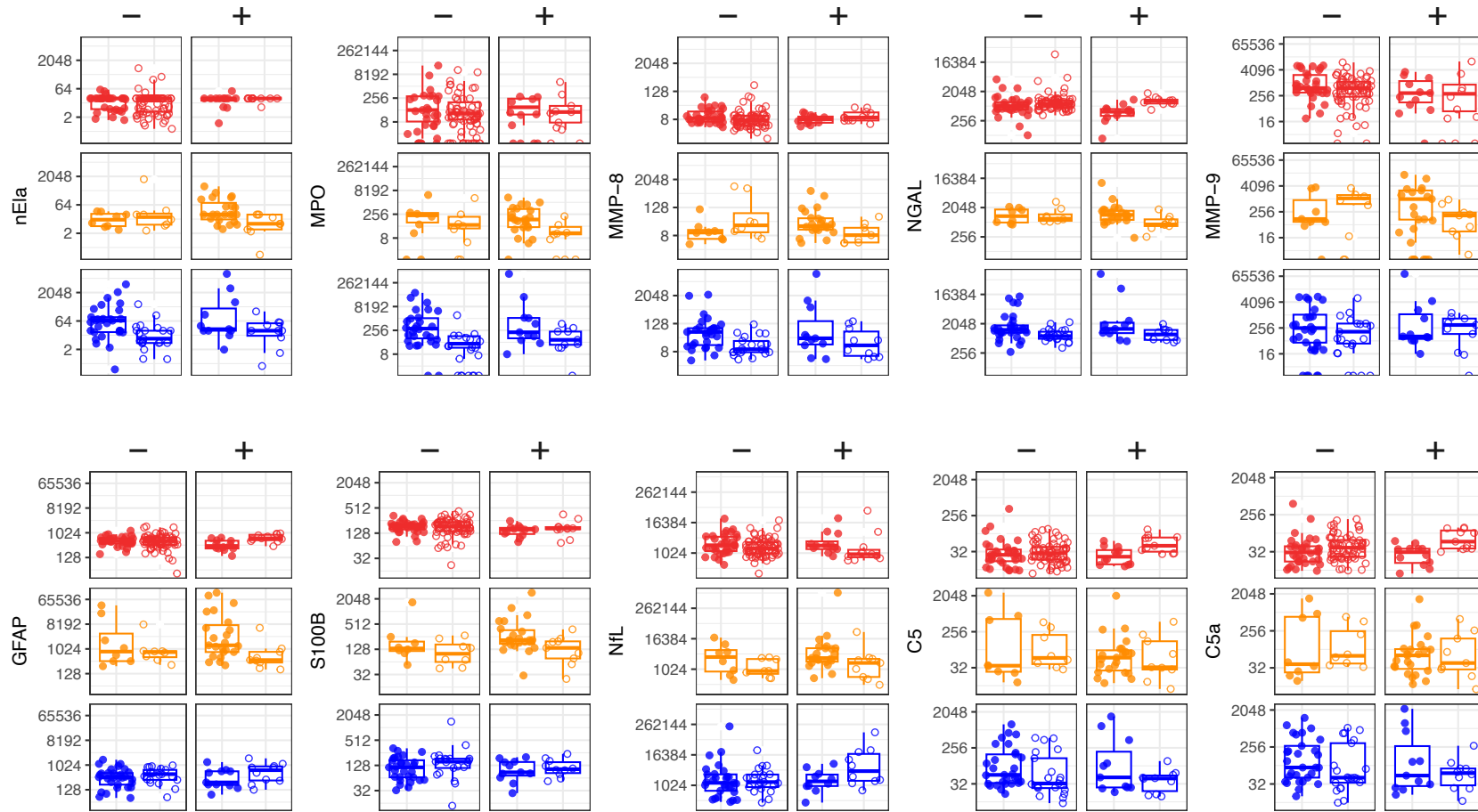
Distribution of intervals [days] between disease exacerbation and LP is similar across diseases for acute (left panel) and s/c (right panel) phase patients. For the acute phase group median intervals were 10 days for MS, and 9 days for NMOSD and MOGAD; the pairwise comparison of intervals was not significant (MS vs NMOSD: $p=0.141$, MS vs MOGAD: $p=0.513$, NMOSD vs MOGAD: $p=0.457$). For s/c patients median intervals were 77 days for MS, 57 days for NMOSD, and 32 days for MOGAD; the difference between MS and MOGAD was significant ($p=0.021$), but not for MS vs NMOSD ($p=0.506$) and NMOSD vs MOGAD ($p=0.280$). Note that in acute stage NMOSD \leq 1st quartile (0-4.5 days after disease exacerbation) 7 out of 8 patients were aAQP4⁺ (●) (aAQP4⁻: (○)); in the time of 0-3 days post exacerbation all 6 samples originate from aAQP4⁺ patients.

Supplementary Figure 2 Correlation of C5 and C5a by diagnosis



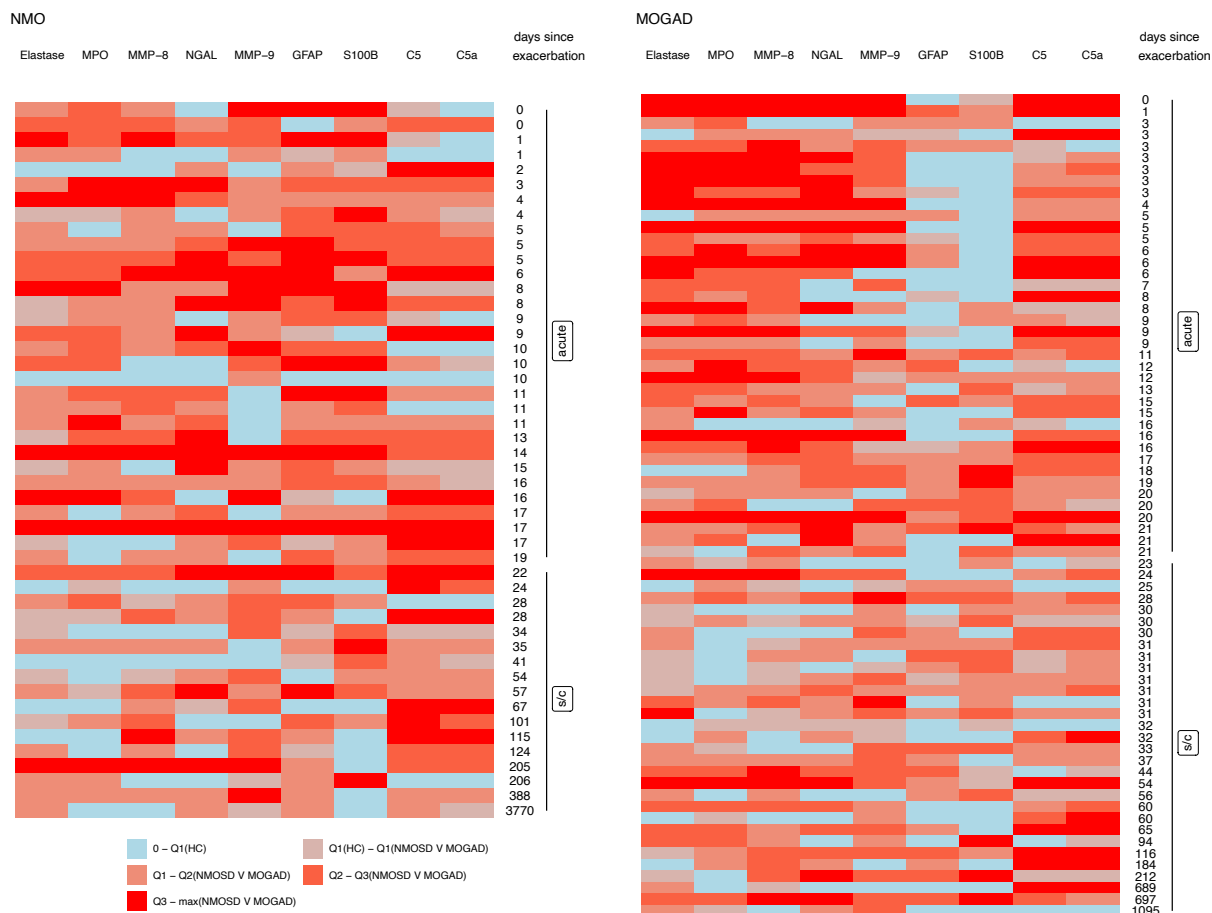
Correlation of C5a (y-axis) and C5 (x-axis) values in pg/ml and ng/ml, respectively, in (A) SC, (B) MS, (C) NMOSD, and (C) MOGAD.

Supplementary Figure 3 Biomarker levels categorised for disease stage and treatment in MS (●), NMOSD (●) and MOGAD (●)



Values of biomarkers (acute stage: ● ; s/c phase: ○ on y-axis are in pg/ml, except for C5 that are in ng/ml. Column headers determine patients without (-) or with (+) immunomodulatory therapy at LP.

Supplementary Figure 4 Temporal heatmaps of expression levels of biomarkers in individual NMOSD and MOGAD CSF samples



Heatmaps show biomarker levels of individual CSF samples from NMOSD (left) and MOGAD (right) patients, ordered by days between clinical exacerbation and lumbar puncture and by clinical stage (acute: ≤ 21 days; s/c: > 21 days). Note the low expression levels of GFAP and S100B in acute stages of MOGAD compared to NMOSD, while in function of time since disease exacerbation relatively higher levels occur in MOGAD. Quartiles for NMOSD and MOGAD were defined for each marker individually by the respective higher value, i.e. Q_n (NMOSD V MOGAD). Cut-off values for colour codes (all numbers are in pg/ml except for C5 which is in ng/ml):

Biomarker	Red (High)	Pink	Brown	Beige	Blue (Low)
nEla	>79.1	>19.5–79.1	>7.99–19.5	>3.5–7.99	0–3.5
MPO	>458	>95.4–458	>23.9–95.4	>9.2–23.9	0–9.2
MMP-8	>71.3	>24.1–71.3	>9.1–24.1	>6.0–9.1	0–6.0
NGAL	>1610	>1132–1610	>763.5–1132	>750.8–763.5	0–750.8
MMP-9	>1303	>145.5–1303	>24.7–145.5	>14–24.7	0–14
GFAP	>3703	>852.5–3703	>403.3–852.5	>319.5–403.3	0–319.5
S100B	>237.3	>183.5–237.3	>119.5–183.5	>105–119.5	0–105
C5 (ng/mL)	>147.6	>51.3–147.6	>29.0–51.3	>19.4–29.0	0–19.4
C5a (ng/mL)	>239.9	>62.7–239.9	>35.6–62.7	>24.4–35.6	0–24.4

Reference

1. Leppert D, Watanabe M, Schaedelin S, *et al.* Granulocyte activation markers in cerebrospinal fluid differentiate acute neuromyelitis spectrum disorder from multiple sclerosis. *J Neurol Neurosurg Psychiatry.* 2023; 94:726-737