MOG-Ab disease patients *do not have* ***damage outside of lesions and no increasing lesions burden over time,*** *supporting the clinical observation of good recovery and no background progression*

Lesions, brain volume and normal appearing white matter in demyelinating diseases

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BACKGROUND AND AIMS

Previous non-conventional imaging studies comparing Neuromyelitis Optica Spectrum disorder (NMOSD) and Multiple Sclerosis (MS), has yielded differing results, partly explained by cohort heterogeneity (i.e. antibodies status). No studies are available in MOG- Ab disease (MOGAD).

METHODS

Eighteen relapsing-remitting MS, 18 MOGAD, 19 NMOSD-AQP4 and 18 HC were included. We performed 3T structural-brain-MRI and multi-shell DWI. The brain volume was calculated using SIENAX and FA-voxel-wise statistical analysis was carried out using Tract-Based-Spatial-Statistic (TBSS), both part of FSL. Lesions were segmented manually on an axial-FLAIR.

RESULTS

Table 1: clinical and demographic characteristics of the enrolled participants

	MOGAD	MS	NMOSD-AQP4	HC
Patient, n	18	18	19	18
Mean age at onset ± SD	41.7±11	44.3±6.4	55.6±13.2	38.9±13.4
Female, %	52	50	68.4	53
Median Disease duration (range)	2 (0-24)	11 (1-24)	11 (0-24)	NA
Median number of relapse (range)	2 (1-7)	2 (1-6)	2 (1-11)	NA
Median EDSS (range)	1.5 (0-7)	2.3 (0-6)	3 (0-7)	NA
Patients with brain lesions, (%)	70	100	100	NA

Figure 1: Pearson correlation between disease duration and number of lesions

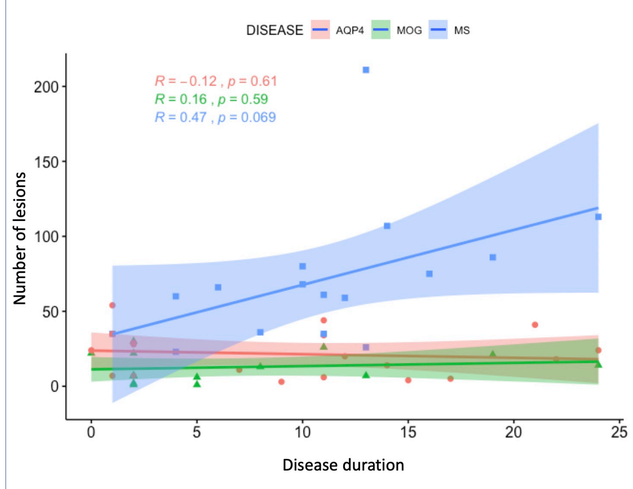


Figure 2: total brain volume

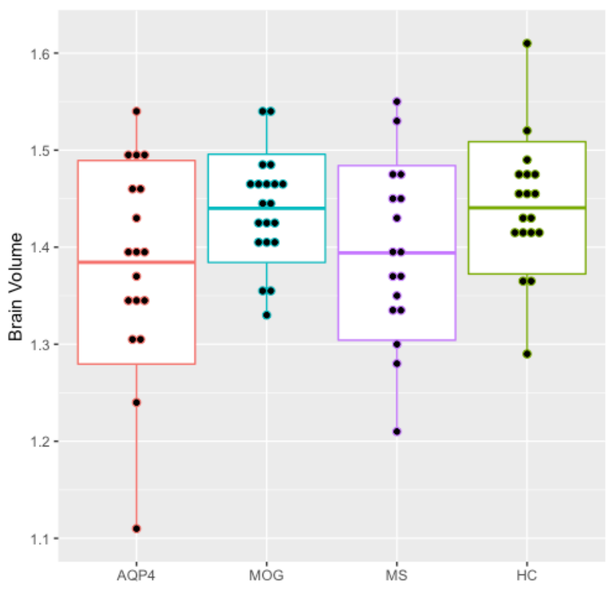
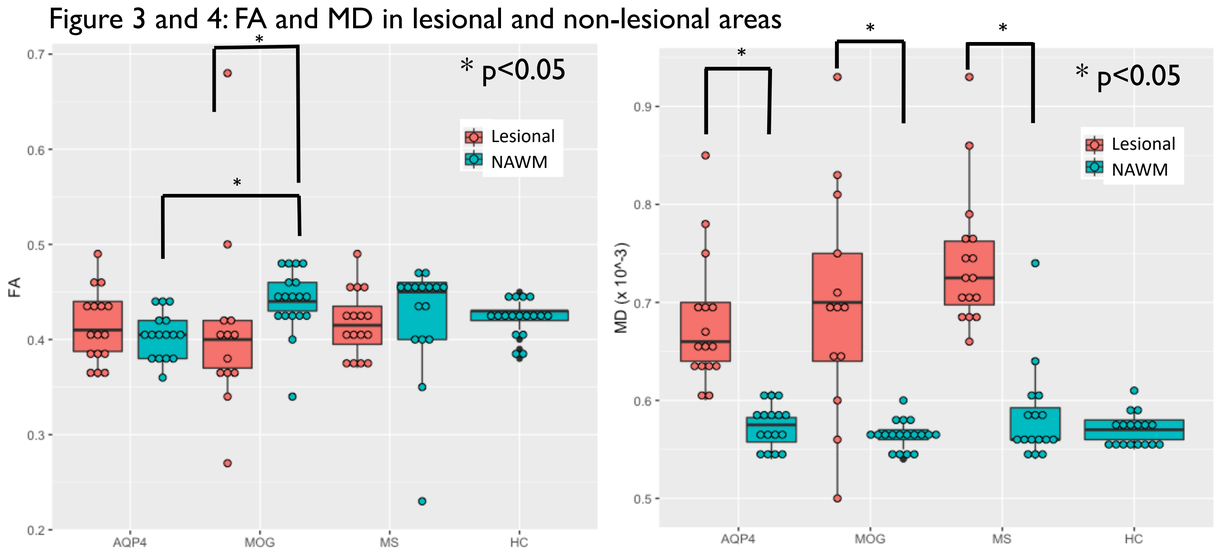
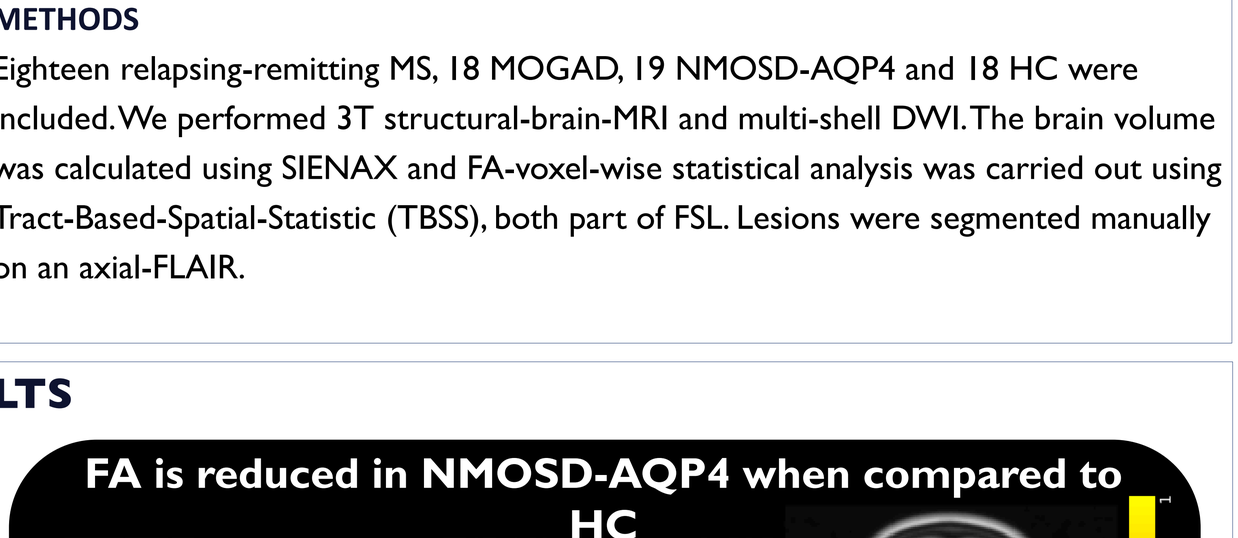
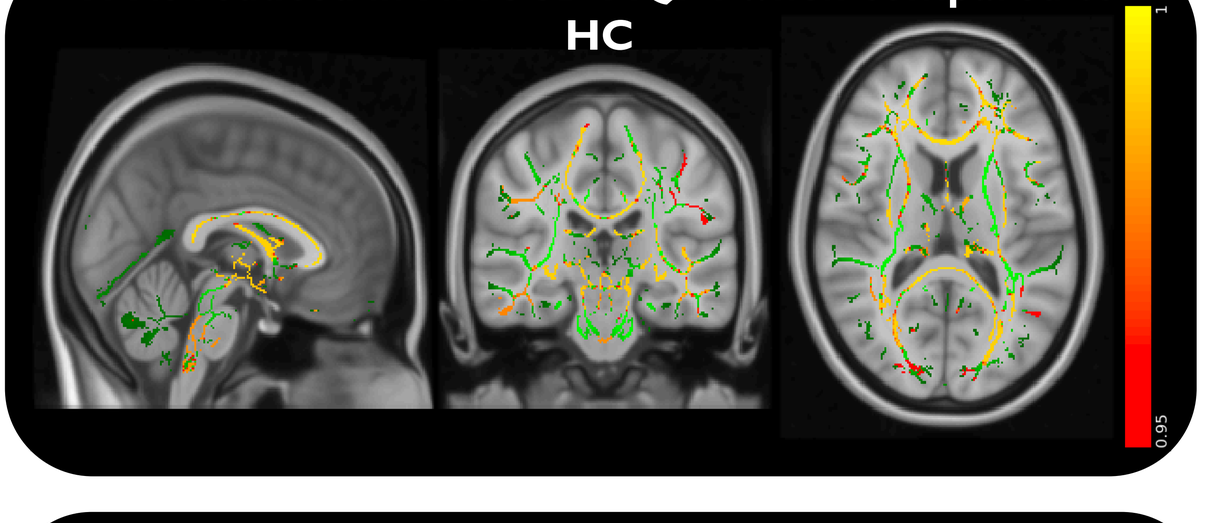


Figure 3 and 4: FA and MD in lesional and non-lesional areas







No FA differences in MOGAD disease vs HC

CONCLUSIONS

MOGAD showed normal brain volume, NAWM integrity and fewer lesions, compared to other diseases. FA is able to discriminate between lesional and non-lesional area only in MOGAD. The lack of lesion-load increase with disease duration points towards antibody-mediated disease.

DISCLOSURES AND REFERENCE

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Reference: Juryńczyk M et al, Pract Neurol. 2019 Jun;19(3):187-195. Myelin oligodendrocyte glycoprotein (MOG) antibody-associated disease: practical considerations

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