

Nerve ultrasound characterization of a cohort of anti-MAG neuropathy and CIDP patients: a retrospective study

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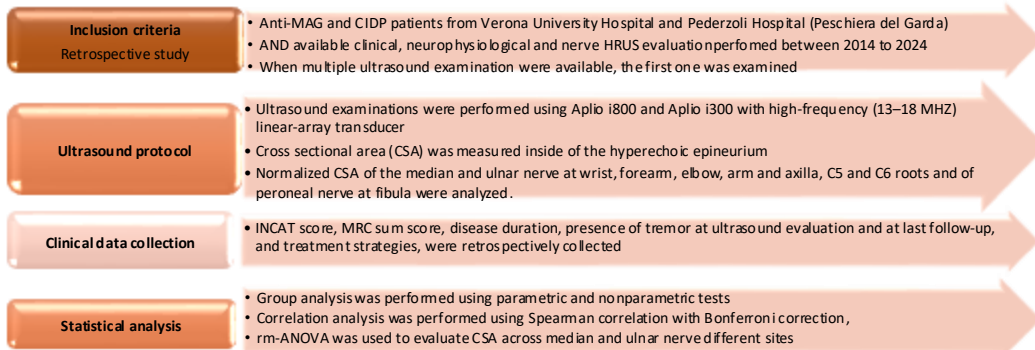
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Background

Ultrasound characteristics of patients with antibodies targeting myelin associated glycoprotein (MAG) are still poorly defined, with various findings including increased cross-sectional area (CSA) in the most distal regions, enlargement at entrapment sites, and more widespread changes across studies.

Aim of the study was to characterize the nerve high resolution ultrasound (HRUS) features of a cohort of patients with anti-MAG neuropathy and to compare them with those with CIDP.

Methods



Results

22 anti-MAG patients and 16 CIDP patients (14 typical CIDP, 2 multifocal CIDP) were included. Median age at onset was higher in anti-MAG patients (75.8 IQR [67.9-81.7] vs 58.1 [55.5-83.8], $p < 0.001$). Disease duration at ultrasound examination was similar between the 2 groups (45.8 months IQR [26.5-98.5] in anti-MAG patients vs 80.6 IQR [26.5-80.6] in CIDP patients, $p = 0.683$). Disease severity according to MRC sum score ($p = 0.170$) and INCAT score was ($p = 0.724$) not statistically different in the two groups.

All CIDP patients had at least one site with nerve enlargement outside compression sites, compared to only 68.4% of anti-MAG patients ($p = 0.014$).

CSA was increased of more of 50% in at least one site in 72.4% of anti-MAG patients vs 89.6% of CIDP patients ($p = 0.068$) while CSA in entrapment site was similar in anti-MAG and CIDP patients ($p = 0.129$). Rm-ANOVA for the ulnar nerve showed significant effect of the factors site ($p < 0.001$) and significant site x group ($p < 0.001$) interaction, while rm-ANOVA for the median nerve showed significant effect for factor site ($p < 0.001$) and a trend on site x group interaction ($p = 0.050$).

No correlation was found between CSA across different sites and disease severity at ultrasound evaluation or at last follow-up.

Intra-nerve variability was higher CIDP patients than in anti-MAG patients (left ulnar nerve $p = 0.003$, right median nerve $p = 0.024$).

Conclusions

Anti-MAG neuropathy has less widespread ultrasound abnormalities compared to CIDP. The enlargements are predominantly located at the cervical roots, with no evidence of nerve enlargement at entrapment sites.

Contact

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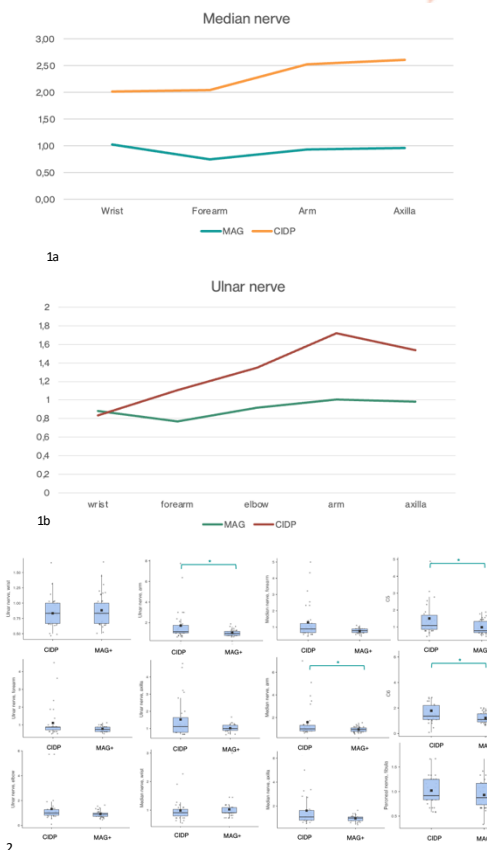


Figure 1. Normalized CSA of the median (1a) and ulnar nerve (1b) across different sites in anti-MAG and CIDP patients
Figure 2. Comparison of normalized CSA of the ulnar and median nerve in different sites, of peroneal nerve at fibula and of C5 and C6 in anti-MAG and CIDP cases