Oligoclonal bands in relation to paraclinical features in patients with the clinically isolated syndrome

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INTRODUCTION

Multiple sclerosis (MS) usually manifests as a clinically isolated syndrome (CIS). Positive cerebrospinal fluid (CSF) oligoclonal bands (OCBs) is a well-established predictor of CIS conversion to MS [1]. Given MS subtle and heterogeneous onset [2], establishing a clear association between positive OCBs

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AIM

To determine the relation between OCBs in CSF and paraclinical features among CIS patients.

METHODS

Medical records were collected in the Hospital of Lithuanian University of Health Sciences Kaunas Clinics (1st January 2015 - 1st January 2020). It included patients with International Classification of Diseases Version 10 codes G37.8 and G37.9, which are considered as CIS in a clinical setting. Prevalence of related to MS magnetic resonance (MRI) lesions, findings of evoked potentials tests was determined and analyzed in relation to OCBs findings. Chi-squared test and independent-samples t-test were used for comparison between groups and categorical variables. Results were interpreted as statistically significant, when p-value< 0.05.

RESULTS

138 CIS patients were enrolled in the study: 92 (64.5%) females and 46 (35.5%) males. 49 patients converted to MS, 89 patients either remained with CIS diagnosis or were diagnosed with other diseases. Patients with positive OCBs in CSF were also more likely to present with positive OCBs in blood serum (χ2 =8.587, p=0.003).

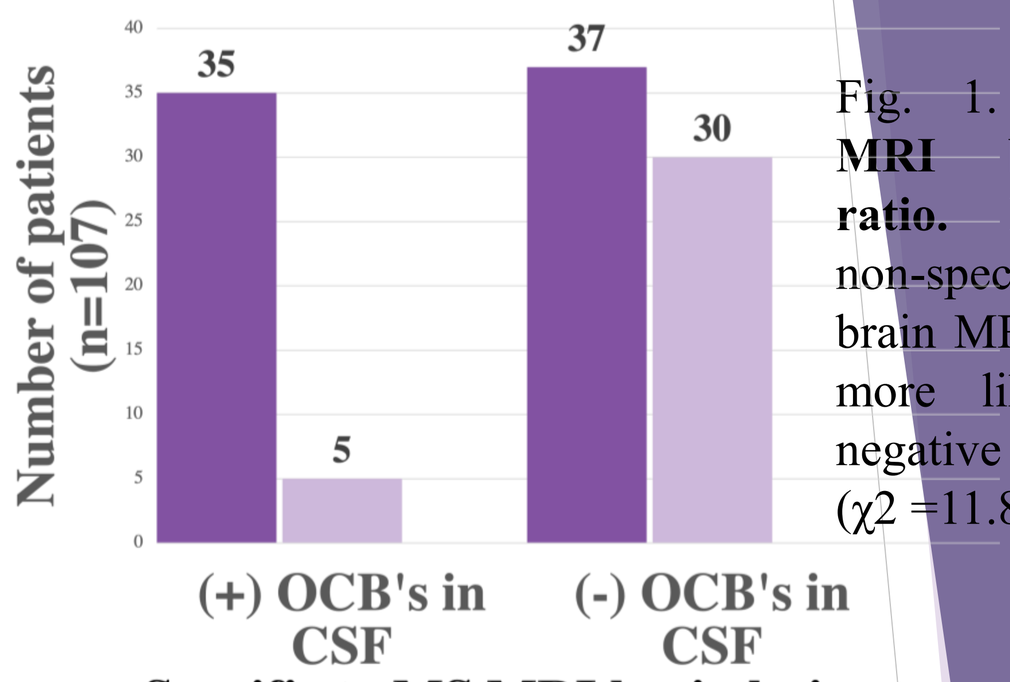

Fig. 1. **OCB's and MRI brain lesion ratio.** Patients with non-specific to MS brain MRI lesions were more likely to have negative OCBs in CSF (χ2 =11.854, p < 0.001).

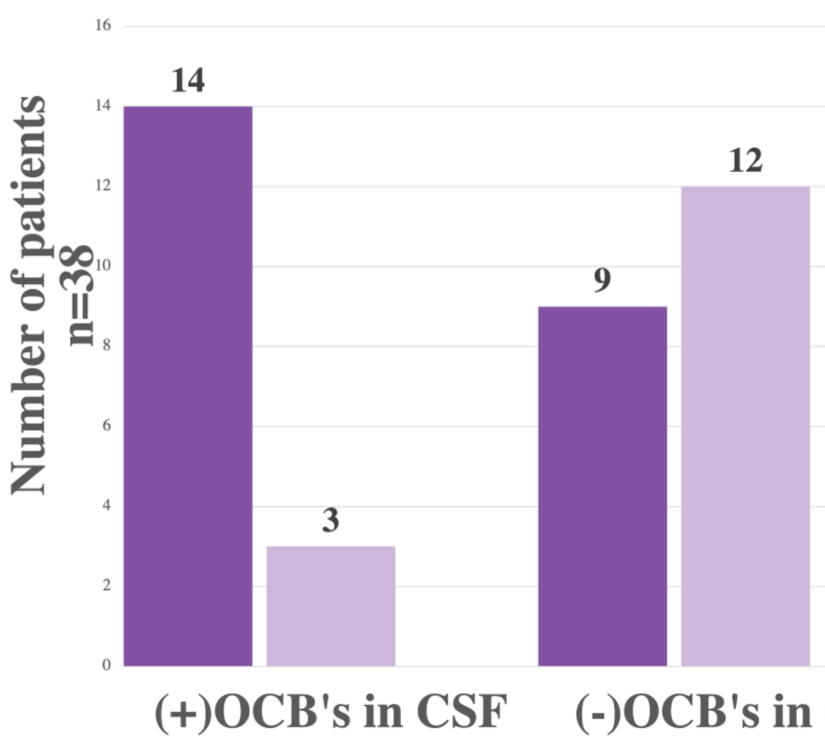

Fig. 2. **OCB's and MRI spinal lesion ratio.** Spinal lesions in MRI were associated with positive OCBs in CSF (χ2 =6.134, p=0.013).

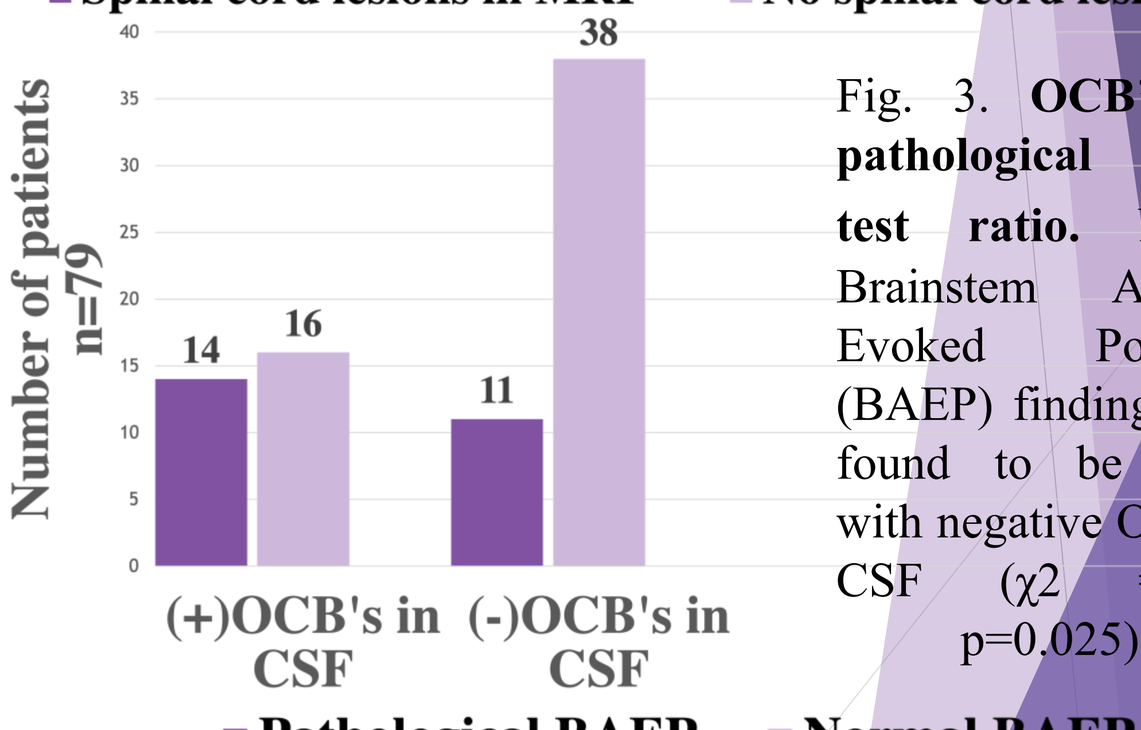

Fig. 3. **OCB's and pathological BAEP test ratio.** Normal Brainstem Auditory Evoked Potentials (BAEP) findings were found to be linked with negative OCBs in CSF (χ2 =5.045, p=0.025).

CONCLUSIONS

Spinal lesions in MRI and positive OCBs in the blood serum are linked with positive OCBs in CSF, whereas non-specific brain lesions in MRI and normal BEAP findings are associated with negative OCBs in CSF.

1. Mantero V, Abate L, Balgera R, la Mantia L, Salmaggi A. Clinical application of 2017 McDonald diagnostic criteria for multiple sclerosis. Journal of Clinical Neurology (Korea). 2018 Jul 1;14(3):387–92.
2. Rzepiński Ł, Zawadka-Kunikowska M, Maciejek Z, Newton JL, Zalewski P. Early clinical features, time to secondary progression, and disability milestones in Polish multiple sclerosis patients. Medicina (Lithuania). 2019 Jun 1;55(6).