Methods: Two cohorts of HC, have been compared with a cohort of pwMS without clinical or radiological signs of acute inflammation. The absence of inflammation was defined as the absence of relapses OR brain MR gadolinium enhanced lesions (GEL), in the three months before and after the NFL determination. Serum NFL have been determinate by the SIMOA technology. The OCMB in the cerebrospinal fluid(CSF) were analyzed by isoelectric focusing and immunoblotting.
Results: 254 people have been studied: 124 healthy voluntary controls and 130 pwMS. In pwMS with OCMB in the CSF, NFL in absence of inflammation was higher than in pwMS without OCMB and HC (11.4 pg/mL, 8.9 pg/mL and 9.0 pg/mL, respectively). Exponential correlation between the age and the NFL was demonstrated, with accelerating increases in patients with progressive MS, and with OCMB.
Conclusions: In absence of evident inflammatory activity, pwMS and OCMB exhibit higher NFL levels. Thus, OCMB could portray an underlying inflammatory process not detected by conventional MRI studies and may explain the poorer prognosis of these patients.
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No conflict of interest by authors are declarated

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Scoring methods of cognitive fatigability in people with multiple sclerosis

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Background: Cognitive fatigability (CF) is considered as the measurable change in the performance within cognitive tasks due to fatigue. Currently there is no consensus on the scoring methods that should reflect CF within different tests. Therefore the aim of this study is to explore different methods of the Symbol Digit Modalities Test (SDMT) and Paced Auditory Serial Addition Test (PASAT) to assess CF.
Methods: A sample of people with MS (PwMS) and healthy controls (HC) is collected using convenience sampling at the local MS Center. All participants completed in following order the: SDMT, PASAT2 and -3 (PASAT with respectively 2 or 3 seconds interstimuli interval). Besides the absolute scores reflecting the amount of correct answers, also the dyad scores (two or more consecutive correct answers)are calculated solely for the PASAT2 and -3. To detect changes throughout the test performance, each administration was split in two and three equal segments.
Results: A sample of 48 PwMS and 49 HC was collected. Absolute scores decreased significantly when using the split in three segments for the SDMT within the group of PwMS (part1:19.50±4.07; part3:17.29±4.25; z=-4.29; p<.001) and in HC (part1:20.47±3.86; part3:19.24±4.04; z=-2.98, p=.002); and for the PASAT2 in the group of PwMS (Part1:14.35±3.39; part3:11.02±3.57; z=-5.50, p<.001) and in HC (part1:15.04±3.26; part3:12.96±3.96; z=-3.82, p<.001); and for the PASAT3 scores in the group of PwMS (part1:16.90±2.69; part3:15.15±3.60; z=-4.64, p<.001) and in HC (part1:17.98±2.33; part3:16.71±3.21; z=-3.24, p=.001). The PASAT dyad scores decreased significantly for the PASAT2 in PwMS (part1:10.35±4.79; part3:5.94±3.89; z=-5.63; p<.001) and HC (part1:11.33±4.24; part3:8.63±5.03; z=-3.71; p<.001); and the PASAT3 in PwMS (part1:13.71±4.30; part3:11.38±4.92; z=-4.53; p<.001) and HC (Part1: 15.57±3.56; part3: 13.49±4.62; z=-3.49; p<.001).
Conclusion: A decline in performance within cognitive tasks, is found with scoring methods using absolute and dyad scores in both the SDMT and the PASAT3 and -2. Suggesting cognitive fatigability in PwMS and HC.

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The relationship between swallowing function, pulmonary functions and respiratory muscle strength in patients with multiple sclerosis

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Introduction: Patients with Multipe Sclerosis (MS) experience respiratory muscle weakness, impaired lung functions, and swallowing disturbances even in the early stages of the disease.
Aim: To investigate the relationship between swallowing function, pulmonary functions and respiratory muscle strength in subjects with MS.
Methods: Twenty-one patients diagnosed with MS (mean age:41.52±10.06, 11 women, 10 male, mean EDSS: 1.73±1.14, disease duration MS: 1.38±1.77/year) were included in the study. Pulmonary functions (%$FEV1_{pred}$, %FVC_{pred}, %FEV1/FVC_{pred}, %PEF_{pred},%$FEF25\text{-}75_{pred}$) of the patients evaluated using MicroQuark Spirometer (COSMED) and respiratory muscle strength (maximal inspiratory pressure-MIP, maximal expiratory pressure-MEP) assessed with "MD Diagnostics RP Check" . Swallowing function was evaluated with "Questionnaire for the Assessment of DYsphagia in Multiple Sclerosis (DYMUS)" and "EAT-10".
Results: The averages of respiratory muscle strength, respiratory functions, DYMUS and EAT-10 were as follows; MIP: 79.80±30.19 cmH2O, MEP: 101.85±26.90 cmH2O, %FEV1pred: