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Clinical and radiologic correlates of quality of life measures in patients with relapse-onset multiple sclersosis

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Objectives: Several studies have reported reduced quality of life (QOL) scores in patients with multiple sclerosis (MS) even in absence of physical disability. Thus QOL measures could be served as an adjunct endpoints for clinical trials. In this study we assessed the relationship between QOL scores and brain structures' volume and magnetization transfer ratio (MTR) in patients with MS.

Design and methods: One hundred and twenty two patients with relapse-onset MS were recruited in the study. They underwent clinical examination and structural magnetic resonance imaging (MRI). QOL was evaluated using SF- 36 questionnaire. Brain structure segmentation on lesion- filled T1-weighted images was performed using a multi-atlas algorithm, MAGeT Brain. Correlation between SF-36 physical and mental scores and expanded disability status scale (EDSS), brain structures' volumes (adjusted to intracranial volume) and MTR were assessed using general linear model (GLM) with age and gender as covariate.

Results: SF-36 physical score (PCS) was negatively correlated with EDSS (P40.001), cerebellar (P = 0.020) and pyramidal (P = 0.001) Kurtzke functional system scores and multiple sclerosis functional composite (MSFC) score (P = 0.006). Physical and mental Scores of SF-36 showed no significant correlation with total brain volume, volume of right and left thalamus, hippocampus, right and left hemi- spheres of cerebellum, corpus medullare of cerebellum and lesion load. The correlation between physical and mental subscores of SF-36 and MTR of corona radiate, internal capsule and corpus callosum were also non-significant.

Conclusion: Clinical measures predicted physical components of QOL. Neither clinical nor radiological measures of MS severity contribute significantly to mental QOL.