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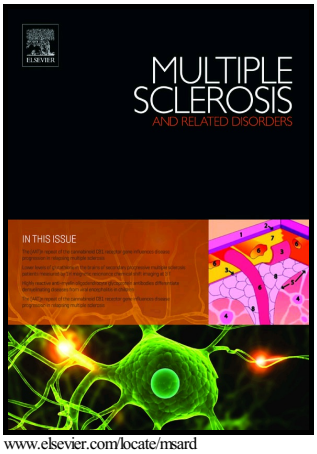

www.elsevier.com/locate/msard

PII: S2211-0348(18)30091-9
DOI: https://doi.org/10.1016/j.msard.2018.03.004
Reference: MSARD799

To appear in: *Multiple Sclerosis and Related Disorders*

Received date: 16 January 2018
Revised date: 22 February 2018
Accepted date: 1 March 2018

Cite this article as: G. Fenu, L. Lorefice, L. Loi, V. Sechi, F. Contu, G. Coghe, J. Frau, G. Spinicci, M.A. Barracciu, M.G. Marrosu and E. Cocco, Adult brain volume in multiple sclerosis: The impact of paediatric onset, *Multiple Sclerosis and Related Disorders,* https://doi.org/10.1016/j.msard.2018.03.004

Adult brain volume in multiple sclerosis: The impact of paediatric onset

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Abstract

Background

Paediatric onset multiple sclerosis (POMS) is associated with reduced brain and deep grey matter volume in comparison with that in healthy controls and individuals with adult onset multiple sclerosis (AOMS). The aim of our study was to evaluate the impact of POMS on adult brain volume with adjustment for other parameters, such as disease duration.

Patients and methods

We recruited 20 POMS and 40 AOMS patients and 20 healthy controls matched for age and sex. All study participants were adults at the time of inclusion in the study. All study subjects underwent brain magnetic resonance imaging (MRI) to evaluate whole brain, white matter, grey matter, cortical, and deep grey matter volumes. Clinical features, such as the Expanded Disability Status Scale (EDSS) score and disease duration, were also assessed.

Results

Brain ($p = 0.01$), grey matter ($p = 0.01$), and deep grey matter volume ($p = 0.03$) was significantly lower in POMS patients than in AOMS patients, while no differences were detected in the volume of white matter or cortical grey matter. A multiple linear regression analysis showed a relationship between brain volume (dependent variable) and the independent variables age ($p < 0.000$) and paediatric onset ($p < 0.001$), while other independent variables, including disease duration, sex, and disability, were not significantly

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