Neurol Res. 2017 Mar 1:1-5. doi: 10.1080/01616412.2017.1298279. [Epub ahead of print]

Abstract
Some studies suggest an inflammatory mechanism associated with the presence of depression in multiple sclerosis (MS); however, there is little data concerning these findings. The purpose of this study was to investigate the presence of brain structural changes in patients with MS and depression and to compare them with patients suffering from MS without depression and healthy controls.
METHODS:

A case-control study that included patients with relapsing-remitting MS (RRMS) defined by validated criteria, over 18 years of age, with less than three years from disease onset, EDSS = 3, with no history of previous depression and under immunomodulatory treatment with interferon beta, if any. A control group paired by age and gender was also included. Patients were clinically assessed to determine the presence of depression. Demographic clinical and structural aspects of parameters from the scan, such as lesion volume, total brain volume (TBV), white matter volume (WMV), neocortical gray matter volume (NGMV), and fractional anisotropy (FA) were analyzed.
RESULTS:

Sixty-five individuals were enrolled: 20 healthy controls, 22 patients with MS without depression, and 23 patients with MS with depression. Patients with MS and depression showed a lower TBV ($P = 0.01$), NGMV (0.01) together with an increase in lesion burden in T2 ($P < 0.01$) but not in T1 ($P = 0.09$) and no differences in global FA among groups ($P = 0.23$) and in WMV ($P = 0.12$).
CONCLUSION:

Patients with RRMS and depression had a reduced total brain volume and a significantly increased lesion burden at T2 MR than patients with RRMS without depression.
KEYWORDS:

Multiple sclerosis; brain volume; depression; magnetic resonance

PMID:
28245725
DOI:
10.1080/01616412.2017.1298279