

Original Paper

Signal intensity of basal ganglions in T2 magnetic resonance imaging in multiple sclerosis

Farshchian N (MD)¹, Razazian N (MD)², Rezaei M (PhD)³, Livani S (MD)*⁴

¹Assistant Professor, Department of Radiology, Medicine College, Kermanshah University of Medical Sciences, Kermanshah, Iran. ²Assistant Professor, Department of Neurology, Medicine College, Kermanshah University of Medical Sciences, Kermanshah, Iran. ³Assistant Professor, Department of Biostatistics, Medicine College, Kermanshah University of Medical Sciences, Kermanshah, Iran. ⁴Resident in Radiology, Medicine College, Kermanshah University of Medical Sciences, Kermanshah, Iran.

Abstract

Background and Objective: Although multiple sclerosis is a disease affecting white matter of brain and spinal cord, but involvement of basal ganglions in some studies demonstrated a decrease in T2 sequence signals. This study was done to assess signal intensity of basal ganglions in T2 magnetic resonance imaging (MRI) in multiple sclerosis

Materials and Methods: This case – control study was done on 30 multiple sclerosis patients and 30 controls in Imam Reza hospital, Kermanshah, Iran, during 2010. MRI images of multiple sclerosis of patients and control group were matched according to age and sex. The basal ganglia signals were identified based on involvement areas, number of plaques, and brain atrophy in T2 and flair sequences. Data were analyzed using SPSS-16, Chi-Square, Fisher exact test and independent t-tests.

Results: Among the case group, 10 patients (33.3%) demonstrated low signals in right thalamus and 14 patients (46.7%) in left thalamus, which was statistically significant compared with control group ($P < 0.001$). The presence of plaques in right and left globus pallidus was observed in 4 (13.3%) and 7 patients (23.3%) respectively. The presence of plaques in right and left thalamus was observed in 10 patients (33.3%) and 14 patients (46.7%) respectively, which was significant compared with control group ($P < 0.001$). The presence of brain atrophy was observed in 18 patients (60%) in case groups and in one patient (3.3%) in control group ($P < 0.001$).

Conclusion: This study indicated that reduction of T2 signals in thalamus is a valuable finding in multiple sclerosis patients and it may facilitate the diagnosis of multiple sclerosis.

Keywords: Multiple sclerosis, Diagnostic imaging, Magnetic resonance imaging

* Corresponding Author: Livani S (MD), E-mail: dr_slivani@yahoo.com

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