

Multiple sclerosis (MS) is a chronic demyelinating disease of the central nervous system (CNS). Minor beta-thalassemia (MBT) is a common genetic disorder in the Mediterranean countries with a reported genetic distribution frequency as high as 5-10 % of the normal population in some countries such as Iran. MBT proposed to increase the risk of developing autoimmune disease.

Our aim in this study was to examine the prevalence of MBT among MS patients in a referral center in Fars Province, southern Iran.

MBT frequency was investigated in MS patients who were referred to our center as a referral center in Fars Province. The patients, who had Mean Corpuscular Volume (MCV) lower than 80 fL, Mean Corpuscular Hemoglobin level (MCH) less than 27 pg/L according to complete blood count (CBC) considered as MBT. Patients with history of other hematological disorders, patients with Pure Iron deficiency anemia and patients who received medications with effects on RBCs were excluded. The frequency of patients with MBT in MS patient group was compared with the prevalence of MBT in normal population of Fars Province (with the same method of screening as the method of our study).

863 MS patients were included (698 Females and 165 Males). According to inclusion criteria; 147(17%) patients had MBT (126 Females and 21 Males). Prevalence of MBT was significantly higher among MS patients than normal population of Fars Province. Prevalence of MBT among Female and Male patients was 18% and 12% which was significantly different.

MBT is associated with an increase in serum level of homocysteine. Elevated serum homocysteine levels exert its neurotoxic properties through different mechanisms. Moreover patients with MS have global cerebral hypo-perfusion which may be due to the reduced axonal activity. In the healthy individuals with MBT the mean hemoglobin level is on average 15% lower than normal persons of the same sex and age without beta-thalassemia. Accordingly, it could be hypothesized that MBT due to related Elevated serum homocysteine, anemia and hypoxemia may be related with MS plaque formation.

doi: [10.1016/j.msard.2019.11.003](https://doi.org/10.1016/j.msard.2019.11.003)

## Multiple Sclerosis and Related Disorders 37 (2020) 101529

### Assessment of Bone Mineral Density at the Distal Radius in Women with Multiple Sclerosis

Zohreh Abna

*Kerman University of Medical Sciences, Kerman, Iran*

Multiple sclerosis (MS) is a chronic autoimmune disease of nervous system leading to abnormalities in movement and affects bone homeostasis. Bone density decreases in patients with longstanding MS.

The aim of this study was to evaluate the bone mineral density at the distal radius in women diagnosed with MS.

In this study, 50 female MS patients aged less than 50 years presenting to an MS clinic of a university hospital (Shafa hospital-Kerman-Iran) were selected. Clinical data included age, body mass index (BMI), duration of the disease, expanded disability status scale (EDSS) and use or not-use of calcium and vitamin D supplementation. Bone density at the distal radius was measured via ultrasound waves, and its association with each of the clinical variables was evaluated by the Chi square test.

Our study showed a significant correlation between supplementation and bone density at the distal radius (PV: 0.008). There also was a significant correlation between osteoporosis at distal radius and supplementation (PV: 0.014). In addition, duration of the disease and osteopenia were significantly correlated (PV: 0.039).

Early bone health screening should be part of the evaluation of MS patients and portable ultrasound device is suitable for this purpose.

Moreover, supplementation with calcium and vitamin D is an effective strategy for prevention of osteopenia/osteoporosis in MS population.

doi: [10.1016/j.msard.2019.11.004](https://doi.org/10.1016/j.msard.2019.11.004)

## Multiple Sclerosis and Related Disorders 37 (2020) 101530

### The Prevalence of Familial Multiple Sclerosis in Shiraz, Southern Iran

Maryam Sharifian Dorche, Alireza Nikseresh

*Clinical Neurology Research Center, Department of Neurology, Shiraz University of Medical Sciences, Shiraz, Iran*

Multiple sclerosis (MS) is a demyelinating disease of the central nervous system (CNS). In this study we tried to determine the occurrence of familial MS cases and the frequency of MS among the biological relatives.

In this retrospective study, all patients with a definite diagnosis of MS (according to McDonald criteria) who visited at a referral neurology clinic between April 2004 and April 2018 were included. Familial cases of MS were selected. We tried to compare the natural history of the disease of sporadic and familial cases. SPSS 17 and Kaplan-Meier survival analysis were used for data evaluation.

We reviewed 871 MS patients' medical records. From these patients, 48 (5.5%) had history of MS in their family members. 18(37.5%) of patients had history of MS in their first degree relatives, 11 (22.9%) second-degree relatives, 10(20.8%) third-degree relatives and 9(18.7%) distant relatives. The average age of MS onset for men in sporadic MS group was 33.2 (SD = 11.1) years and 26.4 (SD = 9.7) years for familial group and 29.7 (SD = 8.8) years and 24.3 (SD = 10.5) years for women. Patients with family history of MS were significantly younger than sporadic patients.

This study reveals that prevalence of familial MS cases is significantly lower in southern Iran than the other parts of the world. This may be due to different underlying etiology in Iran. However, cultural aspects may be effective in the correct detection of the cases.

doi: [10.1016/j.msard.2019.11.005](https://doi.org/10.1016/j.msard.2019.11.005)

## Multiple Sclerosis and Related Disorders 37 (2020) 101531

### Effect of Smoking on Multiple Sclerosis Related Dysphagia

Nahla Aly Merghany Aly<sup>1</sup>, Wael Ibrahim Ezzat<sup>1</sup>,  
Shereen Mohamed Fathi<sup>1</sup>, Nervana Fayoumy<sup>1</sup>,  
Shaimaa Abo Al Futooh<sup>1,2</sup>

<sup>1</sup> Faculty of Medicine, Cairo University, Cairo, Egypt

<sup>2</sup> Faculty of Medicine, Zagazig University, Zagazig, Egypt

Dysphagia is an underestimated cause of morbidity and, in some occasions, mortality in multiple sclerosis (MS) patients. Although its prevalence in MS patients has reached 10-90% in recent systematic reviews, it still hasn't received enough attention yet. Smoking status is directly related to swallowing difficulties in general, but no data exists in MS.

The aim of our study was to assess the relationship between smoking status and MS related dysphagia.

Our study is an observational cross-sectional study that included a total of 100 clinically definite MS patients, diagnosed according to the 2017 revised McDonald Diagnostic Criteria. Such patients were randomly chosen within a definite time interval from Kasr Al Ainy Multiple Sclerosis outpatient clinic, and were further subdivided into 2 groups: dysphagic (study group) and non-dysphagic (control group) according to Dysphagia in Multiple Sclerosis questionnaire (DYMUS). Dysphagia group was subdivided into 2 groups: smokers and non-smokers. All