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Prevalence of Late-Onset Multiple Sclerosis in Fars Province, Southern Iran

Sadegh Izadi¹, Maryam Sharifian^{1,2}, Alireza Nikseresht¹, Shima Rafiee²

¹Clinical Neurology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.

²Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran.

Abstract

Background: Multiple Sclerosis (MS) is the most common demyelinating and inflammatory disease of the central nervous system especially in young adults, but in a subgroup of patients the first clinical symptoms present after the age of 50. This clinical presentation is defined as Late-Onset Multiple Sclerosis (LOMS). The incidence and prevalence of MS including LOMS vary geographically. The aim of this study is to determine epidemiological characteristics of LOMS in Fars province, South of Iran. **Materials and Methods:** All patients aged over 50, known to have had definite MS according to MC Donald's criteria, being members of Shiraz University Multiple Sclerosis Database (SUMSD), were evaluated in this study. The following data were recorded via a questionnaire indicating gender, age at the time of diagnosis, clinical course and details of disease-modifying therapies (Beta-Interferon). **Results:** Among a total of 1705 patients, 7.2% were identified as having LOMS and 3.1% identified as having very late-onset MS (VLOMS). Mean age of the patients with LOMS at the time of diagnosis was 58.81 ± 2.6 years (20.8% were male and 107 (79.2%) were female). 8.9 % had EDSS 6 and more. 89.1% of patients received Beta-Interferon as a disease-modifying treatment including Avonex (16.3 %), Cinovex (32.6%), Rebif (14.1%) and Betaferon (26.1 %). **Conclusion:** In our study, 7.2% of all MS patients were identified as LOMS. In LOMS subgroup, clinical history and para-clinical data should be thoroughly evaluated to exclude more common conditions like cerebrovascular disease. [GMJ. 2014;3(4):228-31]

Key Words: Late-Onset Multiple Sclerosis; Prevalence; Epidemiological Characteristic; Fars; Southern Iran

Introduction

Multiple sclerosis (MS) is the most common demyelinating and inflammatory disease of the central nervous system (CNS). After trauma, MS is the second cause of neurological disability in young adults [1,2]. MS is a heterogeneous disorder with variable clinical and pathologic characteristics [3]. Commonly, MS has been considered as a dis-

ease of young adults, mainly women, with the peak of incidence beginning from the second to fourth decades of life. In a subgroup of patients, the first clinical symptoms present after the age of 50. This late clinical presentation is defined as Late-Onset Multiple Sclerosis (LOMS) [3,4].

Moreover, presentation at or over the age of 60 is identified as Very Late-Onset Multiple Sclerosis.

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Fax: +98 731 2227091
PO Box 7461686688
Email: info@gmj.ir



Correspondence to:

Maryam Sharifian, Resident of Neurology, Department of Neurology, Namazi Hospital, Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran.
Telephone Number: (+98) 9177133608
Email Address: maryam_sharifian@yahoo.com

rosis (VLOMS) in some studies [3,4]. Genetic and environmental factors could influence the age of onset [5]. Previously LOMSC was thought to be rare, but now prevalence rate is estimated to be between 6-13% as reported in some studies [6,7].

Diagnosis of LOMS may be difficult and challenging because a large number of other diseases come into differential diagnosis in elderly patients including CNS and vascular diseases, so initial misdiagnosis in this case is rather common [5-7].

The incidence and prevalence of MS including LOMS vary geographically [6]. The aim of this study was to determine epidemiological characteristics of LOMS in Fars province, southern Iran.

Materials and Methods

Between 2010 and 2013, all patients aged over 50 known to have had definite MS according to MC Donald's criteria [8] alive, resident of Fars (a large province of South Iran) and members of Shiraz University Multiple Sclerosis Database (SUMSD) were introduced into this retrospective study.

Patients diagnosed with RIS (Radiologic Isolated Syndrome) were excluded from this study.

All these patients referred to MS committee of Shiraz University of Medical Sciences by neurologists from southern Iran, were then reevaluated by three expert neurologists for definite diagnosis. Vividly, all of these patients had definite MS.

This is the only referral center for MS patients in Fars province, southern Iran. Approximately most cases with MS are registered in this committee.

Patients' whose first clinical symptoms present after the age of 50, were defined as LOMS and presentations of first clinical symptoms over the age of 60 were identified as VLOMS in our study.

The following data were recorded via a questionnaire indicating gender, age at time of diagnosis, clinical course and details of disease-modifying therapies (Beta-Interferon). With the cooperation of an epidemiologist, data were collected from this database and

then analyzed by SPSS (Version 15). A p-value of less than 0.05 was considered to be statistically significant.

Results

Among 1705 patients diagnosed with clinically definite MS or CIS (Clinically Isolated Syndrome), 138 patients (7.2%) were identified as having LOMS (time at onset of presentation over 50), 60 patients (3.1%) identified as having VLOMS.

The mean age of the patients with LOMS at the time of diagnosis was 58.81 years (with SD 2.6 years and 95% C.I 57.5-59.6). The oldest patient was 72 years old. Thirty one patients (20.8%) were male and one hundred seven (79.2%) were female with female to male ratio of 3.4. The mean age of onset in females and males was not significantly different ($P>0.05$). Seventy seven patients (61.6 %) had remitting-relapsing MS, forty patients (32%) had progressive MS and 6.4% diagnosed as CIS.

Twelve patients (8.9 %) had EDSS (Expanded Disability Status Scale) of 6 and more.

89.1% of patients received Beta-Interferon as a disease-modifying treatment including Avonex (16.3 %), Cinovex (32.6%), Rebif (14.1%) and Betaferon (26.1 %).

Discussion

LOMS presenting over 50 is a rare contradictory to early onset MS. There have been a few studies conducted on this group. But in limited published studies, variable frequencies were reported especially in Iran [8-10].

In a study conducted in Isfahan (central part of Iran), only 1.1% of patients had LOMS [9]. In current study, 7.2% of patients were identified as having LOMS. Therefore, it seems that in the south of Iran, especially Fars province, this rate is significantly higher than it is in Isfahan which is located in the central part of Iran ($P<0.05$).

VLOMS is another subgroup of MS patients with presentation of disease beginning over the age of 60. Presentation and diagnosis of these patients are even more difficult and challenging because in this age group, other

neurological diseases including cerebrovascular disease are the major cause of neurological problems [4-6].

In our study, 3.1% of patients had VLOMS. In our opinion, among patients over 60, MS can be a leading cause of focal neurological deficit and high index of suspicion is needed for due diagnosis.

Female to male ratio in this study was significantly higher than the study reports from Isfahan ($p < 0.05$), (3.4 and 0.8 respectively).

In our study, 61.1% of patients had remitting-relapsing MS and 32% progressive MS. This frequency is relatively lower than some previous studies in which the majority of these patients had primary progressive MS [5,12,13]. For example in a study from Germany, 83% of LOMS patients had primary progressive MS [4] but Polliack and his colleagues reported 50% remitting-relapsing MS in their study [13].

Regarding disease course, the rate of remitting-relapsing type was approximately equal in both areas of Iran (61.6% in Fars and 60% in Isfahan); although, a major proportion of our cases such as studies done abroad [15-17] had secondary progressive form. In Isfahan, this rate was significantly lower than the one reported in our research (20% and 32% respectively).

In our study, 89.1% of patients received Beta-Interferon as a disease-modifying treatment; 32% of these patients had progressive course though. Beta-Interferon was relatively

ineffective in them [14]. But it seems that in the remaining cases, a higher-than-expected proportion of patients received Beta-Interferon. The use of disease-modifying therapies in patients with LOMS was significantly lower in other areas compared to southern Iran (for instance 47.1% in Western Australia) [15].

It seems that cases with progressive course should be reevaluated regarding their continuation or discontinuation of treatment.

In summary, frequency of 7.2% LOMS in Fars province is similar to the frequency of 6.88% reported in Polliack and Tremlett studies [12,13] but is significantly higher than 1.1% in Isfahan ($p < 0.05$) [9]. Why was this significant difference observed in Isfahan (center of Iran) and Fars (South of Iran)? We have no clear explanation for this discrepancy. Answer to this question requires further cross-institutional studies.

Conclusion

Overall, It appears that prevalence of LOMS is higher in south of Iran (Fars province) than in central parts of Iran (Isfahan province).

The present study was confined to the evaluation of patients in Fars Province, south of Iran. Accordingly, for a better evaluation and detection of geographical distribution of LOMS and VLOMS, conducting a survey of other provinces in southern parts of Iran is of prime importance.

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