

Clinical and epidemiological profile of patients with multiple sclerosis in Uberaba, Minas Gerais, Brazil

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ABSTRACT

Multiple sclerosis (MS) is an immune-mediated disease that affects the central nervous system. Clinical presentation and prevalence vary widely around the world. **Objective:** To describe the clinical and epidemiological aspects of patients with MS in Uberaba (MG). **Method:** We conducted a transversal descriptive study, with data analysis of 35 patients with MS. **Results:** Prevalence of MS was 12.5 cases/100,000 inhabitants, with a predominance in females (71.4%) and Caucasoid (85.7%). The current average age was (43.8 ys). The most common initial symptom was sensory (40%), followed by optical neuritis (25.7%). Expanded Disability Status Scale average score was 2.4. The relapsing-remitting form was predominant (88.6%), most (74.3%) were on immunomodulatory treatment and (40%) had college education. **Conclusion:** Prevalence of MS in Uberaba (MG) is considered average in accordance to Kurtzke and Page and clinical features are consistent with most Brazilian studies.

Key words: multiple sclerosis, epidemiology, prevalence.

Perfil clínico e epidemiológico dos pacientes com esclerose múltipla na cidade de Uberaba (MG), Brasil

RESUMO

A esclerose múltipla (EM) é uma doença imunomediada que acomete o sistema nervoso central. Seus aspectos clínicos e prevalência variam consideravelmente em todo o mundo. **Objetivo:** Descrever a prevalência, os aspectos clínicos e epidemiológicos dos pacientes com EM na cidade de Uberaba (MG). **Método:** Realizado estudo descritivo transversal, com análise dos dados de 35 pacientes com EM. **Resultados:** A prevalência de EM foi de 12,5 casos/100.000 habitantes, com predomínio no sexo feminino (71,4%) e etnia caucasóide (85,7%), idade média atual de 43,8 anos. Do total, 40 possuem curso superior. O sintoma inicial mais frequente foi o sensitivo (40%), seguido de neurite óptica (25,7%). A média dos escores da Escala de Status de Incapacidade Expandida foi de 2,4. A forma evolutiva recorrente-remitente foi predominante (88,6%), com (74,3%) dos pacientes em uso de imunomodulador. **Conclusão:** A prevalência de EM no município de Uberaba (MG) é considerada média, de acordo com Kurtzke e Page. Os aspectos clínico-epidemiológicos estão em consonância com a maioria dos estudos brasileiros.

Palavras-chave: esclerose múltipla, epidemiologia, prevalência.

Multiple sclerosis (MS) is an inflammatory demyelinating disease affecting the central nervous system (CNS), with presumed autoimmune etiology^{1,2}. It affects

mostly young adults, leading to the emergence of various signs and symptoms, often disabling, with no estimated duration and possible remission². The neuro-

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logical symptoms of this disease are manifestations of inflammatory reaction of the central nervous system (CNS) and, over the long term they reflect the degenerative aggression against a variety of functional neurological systems³. Genetic and environmental factors are unequivocally related to susceptibility and expression of the disease⁴. MS displays an unimodal distribution between 20-40 years of age, with a higher incidence in females and Caucasians^{2,5}.

The prevalence of MS varies considerably around the world, being higher in regions located between the parallels 44 and 64N. Areas considered as of high prevalence are those with more than 30 cases per 100,000, average prevalence areas with 5 to 30/100,000, and low prevalence areas less than 5/100,000^{2,3,5-7}. MS seems to be a relatively rare disease in South American in comparison with Northern hemisphere Countries^{2,6}. Brazil is considered a low prevalence area, however, there are medium-prevalence areas, as shown in studies from cities such as São Paulo⁸, Belo Horizonte⁹, Santos¹⁰, Botucatu¹¹ and Sorocaba¹².

Uberaba is located in the state of Minas Gerais, with a latitude of 19°45'27 West and longitude of 47°55'36. The climate in this region according to Köppen's raking is AW, that is characterized by two seasons: a cold and dry winter and a hot and wet summer, with an average annual temperature of 23.2°C, an annual average humidity of 64% and an altitude of 764 meters¹³. According to the Brazilian Institute of Geography and Statistics (IBGE)¹³,

the city occupies 256 Km² of urban area, with a total area of 4,512.14 Km². Its population is of 287,760 inhabitants, with an annual growth rate of 1.96%, urbanization rate of 96.9%, a population density of 55.4 inhabitants/Km², a HDI (Human Development Index) of 0.834, and a life expectancy of 73 years¹³. The main economic activities are industry, commerce, agriculture and cattle breeding (IBGE)¹⁴. The city has 2 teaching hospitals, 6 private hospitals, 2 radiological clinics with MRI, 2 CSF laboratories, 1004 physicians, of which 16 are neurologists and 6 neurosurgeons.

METHOD

This is a transversal descriptive study, with patients from the Grupo de Estudo e Pesquisa em Esclerose Múltipla (GEPEM), outpatients from the Universidade Federal do Triângulo Mineiro (UFTM) and from the Associação Uberabense de Amigos e Portadores de Esclerose Múltipla (AUAPEM), private clinics, radiological clinics, and data from Uberaba's Health Department¹³.

A cross-sectional study was held from August to December 2008. The patients were classified in accordance with the criteria of Poser³ and McDonald¹⁵ and only those with defined multiple sclerosis were registred.

Data was collected according to the method proposed by LACTRIMS (Latin American Committee for Treatment and Research in Multiple Sclerosis)¹⁶ from patients' medical files, with prior knowledge and signature of a term of clarification and free consent. This study was

Table 1. Distribution of epidemiological data from patients with multiple sclerosis in Uberaba (MG).

| Epidemiological data | Gender | | | | Total |
|----------------------|--------|------|--------|----|-------|
| | Male | | Female | | |
| | N | % | N | % | |
| Current age | | | | | |
| >20 years | 1 | 10 | – | – | 1 |
| 20-30 years | 1 | 10 | 6 | 24 | 7 |
| 31-40 years | 3 | 33.3 | 4 | 16 | 7 |
| 41-50 years | 1 | 10 | 9 | 36 | 10 |
| 51-60 years | 2 | 20 | 3 | 12 | 5 |
| >60 years | 2 | 20 | 3 | 12 | 5 |
| Ethnic group | | | | | |
| White | 7 | 70 | 23 | 92 | 30 |
| Black | – | – | – | – | – |
| Pheodermic | 3 | 30 | 2 | 8 | 5 |
| Level of education | | | | | |
| Elementary school | 4 | 40 | 3 | 12 | 7 |
| High school | 3 | 33.3 | 11 | 44 | 14 |
| University studies | 3 | 33.3 | 11 | 44 | 14 |

Source: patients with MS-GEPEM-UFTM, AUAPEM, private clinics.

Table 2. Distribution of epidemiological data from patients with multiple sclerosis in Uberaba (MG).

| Epiemiological data | Gender | | | | Total |
|-----------------------|--------|----|--------|----|-------|
| | Male | | Female | | |
| | N | % | N | % | |
| Disease duration | | | | | |
| <1 year | 2 | 20 | – | – | 2 |
| 1 a 5 years | 5 | 50 | 13 | 52 | 18 |
| 6 a 10 years | 1 | 10 | 9 | 36 | 10 |
| >10 years | 2 | 20 | 3 | 12 | 5 |
| Clinical forms | | | | | |
| Relapsing remitting | 9 | 90 | 22 | 88 | 31 |
| Secondary progressive | – | – | 2 | 8 | 2 |
| Primary progressive | 1 | 10 | 1 | 4 | 2 |
| Initial symptom | | | | | |
| Optical neuritis | 1 | 10 | 8 | 32 | 9 |
| Brainstem/cerebellum | 2 | 20 | 3 | 12 | 5 |
| Sensory | 4 | 40 | 10 | 40 | 14 |
| Motor | 1 | 10 | 2 | 8 | 3 |
| Others | 2 | 20 | 2 | 8 | 4 |

Source: patients with MS-GEPEM-UFTM, AUAPEM, private clinics.

approved by the Research Ethics Committee of UFTM, under protocol number 884/2007. The epidemiological variables were: gender, age, ethnicity, initial symptom, clinical forms, use of immunomodulators, elapsed time of disease, EDSS (expanded disability status scale)¹⁷, and level of education.

RESULTS

A total of 35 patients with MS were identified in Uberaba, resulting in a prevalence of 12.5 cases/100,000 inhabitants. Among these 35 patients, 25 (71.4%) were female, ratio 2.5:1; 30 (85.7%) White; an mean age at onset was 43.8 years for females and 44 for males. Regarding level of education, 7 patients (20%) completed elementary school, 14 (40%) high school and 14 (40%) concluded university studies. The epidemiologic data are described on Table 1. At the time of diagnosis, the average age was 37.3 years for males and 37.4 for females. Mean disease duration was of 6.7 years, ranging from 3 months to 35 years. The average current EDSS was 2.4, with values between 1 and 7.5. Details about data related to the disease are found in Table 2.

DISCUSSION

In Uberaba the prevalence of MS is of 12.5 cases/100,000 inhabitants, configuring an average prevalence in accordance to findings by Kurtzke⁷, and in agreement with studies conducted in São Paulo⁸, Belo Horizonte⁹, Santos¹⁰, Botucatu¹¹ and Sorocaba¹². However, this prev-

alence is above other estimates¹⁸. The reasons for this discrepancy between Brazilian regions may be linked to genetic, environmental, ethnic, and socio-economical factors and differences in access to health services. Besides, MS is a disease whose diagnosis requires an extensive list of complementary tests, neurological expertise, in addition to a vast list of differential diagnosis. All these features underscore the importance of epidemiological studies and the necessity for reference centers, in order to implement more reliable diagnoses and to demonstrate as closely as possible the real prevalence of MS. The medium age at the time of diagnosis for both genders is above averages obtained in similar studies^{19,20}.

The White ethnic group was predominant, in agreement with most Brazilian statistics^{21,22}, except in a survey conducted in Recife, Brazil, in which the African Brazilian ethnic group was responsible for (93.3%) of cases¹⁸. In this aspect, classifying patients according ethnic factors is a difficult task because of extensive racial miscegenation in Brazilian communities as well as the existence of many classifications.

The most common initial symptom was sensory (40%), followed by optical neuritis (25.7%) and brainstem/cerebellum symptoms (14.3%), in accordance to other studies²³. As to educational status, 40% concluded university studies, an intriguing fact in a country where the vast majority does not even finish high school. The evolution form relapsing remitting occurred in most (88.6%) patients, in accordance to Brazilian and inter-

national literature²⁴. Out of all patients with MS in this study, 25.7% were not receiving immunomodulatory treatment. There are some possible reasons for this apparent delay in the implementation of treatment, considering that the ultimate decision on beginning medication is also made by the patient, after presentation of current medical knowledge. This study aimed to demonstrate the epidemiological profile of patients with MS in Uberaba, where there is a reference center in MS (GEPEM) and good quality public and private health system when compared to other less developed regions in Brazil, facilitating diagnoses of diseases that require expensive complementary tests and medical specialists.

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