ORIGINAL ARTICLE

Modes of Presentation of Multiple Sclerosis in Pakistani Population

KHURRAM SALEEM, ATIF MASOOD, ZAHID HUSSAIN SHAH

ABSTRACT

Objective: The objective of this descriptive study was to present and compare different modes of presentation of multiple sclerosis in Pakistani population and to acknowledge the fact that multiple sclerosis is not an unusual moiety in Pakistan and should be brought in differential diagnosis.

Material and Methods: This descriptive one time observational study was conducted in medical and neurology wards of Mayo Hospital, Lahore. Patients were selected for interview, based on convenient sampling. The data was collected on a specially designed proforma. Thirty patients were included in this study. All patients were evaluated through clinical examination, blood tests, CSF examination and MRI. The data was analyzed using SPSS version 8*.*

Results: Mean age was 29.43 years. Up to 57% of the patients were female. Only 16% of patients presented for the first time, while the rest had history of previous episodes. Most of the patients had more than one symptom at presentation. Visual disturbance alone or along with other symptoms was the presentation 63% of thepatients. Another 80% of patients presented with weakness. Urinary incontinence occurred in 40% of patients. Cerebellar signs were present in 17% of patients. In 13% of the patients, multiple sclerosis manifested with paraesthesias.

Conclusion: Visual disturbance was the most common presentation of multiple sclerosis, either alone or in combination with other symptoms. Most patients presented with relapse after a remissions of 1-2 years.

Key word*:* MS Presentation

INTRODUCTION

Multiple sclerosis (MS) is an inflammatory, demyelinating, neurodegenerative disorder of the central nervous system of unknown etiology. The peak onset is between age 20 and 40 years; it may develop in children and has also been identified in persons over age 60 years.[1]The past decade has brought improved understanding of the immuno pathogenesis of multiple sclerosis; this has led to plethora of clinical trials and the resultant emergence of various new drugs in different stages of development.

MATERIAL AND METHODS

This was a hospital-based descriptive study conducted at medical and neurology floor of Mayo Hospital Lahore for one year from June 2009 to June2010. Thirty consecutive cases of multiple sclerosis were included with convenience sampling technique. Patients were evaluated through detailed history, examination and investigations (CSF& MRI),entered on the proforma. Data analyzed on computer based SPSS program version 8.0.

Inclusion criteria

1. Patients with onset of the disease between 15 to 60 years of age.
2. Examination and history revealed involvement of two or more areas of brain
3. MRI was used for the documentation of second lesion if examination and history revealed only one lesion site.
4. Patient's neurological condition could not better be explained by another disease.
5. (Patients who full filled all the above criteria were labeled as definite multiple sclerosis and included in this study)

Exclusion criteria

1. Patients age less than15 or more than 60 years.
2. Posterior fossa, cranio-cervical or spinal cord exclusively localized involvement symptoms.
3. Patients without sensory, visual or bladder symptoms.
4. Aphasia, extra-pyramidal syndromes (Parkinsonism), chorea,Isolated dementia, amyotrophy with fasciculation, peripheral neuropathy, fever headache, seizures or coma.
5. Small Vessel Vasculitis

Department of Medicine, King Edward Medical University/Mayo Hospital, Lahore
Correspondence to Dr. Khurram Saleem, Senior Registrar Email: khurramsaleem@hotmail.com

RESULTS

The mean age of the patients was 29. 43 years ±10.15. Age ranged between 15 to 55 years. Of these 57% (17) were females with age range of 15 to 47 years with their mean age of 27.18 ± 8.20. The remaining 43% (13) patients were male with an age range of 20 to 55 years and a mean age of 32.38 ±11.95. (Graph1). Most patients had history of previous episodes i.e. 84% (24) patients presented with relapsing and remitting disease.

Weakness of a part of the body was the presenting complaint in 80% of patients. This weakness was further segregated in to para-paresis, quadri-paresis, hemi-paresis and mono-paresis (Graph 2). Power was assessed with grading from 2/5, 3/5, 4/5, to 5/5 (Table-I)

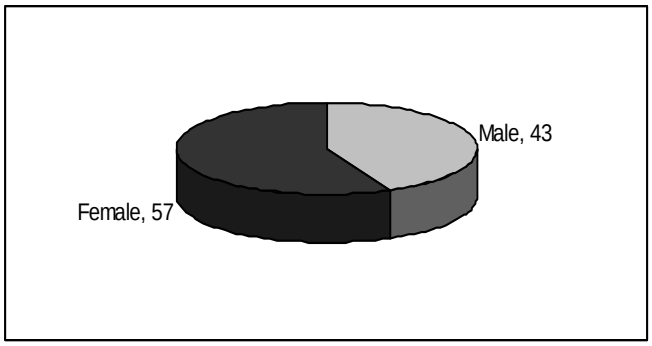
Table I: Signs & symptoms reported in our study

	Male	Female	Total
Mean age	32.38 ±11.95	27.18±8.20	29.43±10.15
Weakness	69% (9)	88% (15)	80% (24)
Power	69% (9)	88% (15)	80% (24)
Grade I	15% (2)	12% (2)	13% (4)
Grade II	15% (2)	23% (4)	20% (6)
Grade III	38% (5)	53% (9)	47% (14)
Grade IV	31% (4)	12% (2)	20% (6)
Visual disturbance	26% (8)	37% (11)	63% (19)
Unilateral	46% (6)	35% (6)	40% (12)
Bilateral	15% (2)	29% (5)	23% (7)
Optic neuritis	61%(8)	41%(7)	50%(15)
Nystagmus	15%(2)	11%(2)	13%(4)
Urinary incontinence	38% (5)	41% (7)	40% (12)
Dysarthria	8% (1)	35% (6)	23% (7)
Paraesthesias	15% (2)	12% (2)	13% (4)
DTR brisk	62% (8)	88% (15)	77% (23)
Babinski	85% (11)	82% (14)	83% (25)
MRI	85% (11)	76% (13)	80% (24)
Mono-symptomatic	15% (2)	35% (6)	27% (8)
Multi-symptomatic	85% (11)	65% (11)	73% (22)
High Proteins CSF>54 = high proteins	38% (5)	65% (11)	53% (11)

The second presentation was visual disturbance, which we found in 63% (19) of patients. Visual disturbance was either unilateral or bilateral (Table-I). The other symptoms found were urinary incontinence, dysarthria and paraesthesias; (Table-I)

Amongst signs, Brisk deep tendon reflexes and extensor planters was a frequent finding in our study population (Table-I). We found 80 %(24) patients of our study had abnormal MRI and 20% (6) patients had unremarkable MRI. Some patients had more than one plaque. There was variety of sites involved in brain and spinal cord (Table 2).

Graph 1: Multiple sclerosis in two sexes in our study



Graph 2: Prevalence of weakness in our study

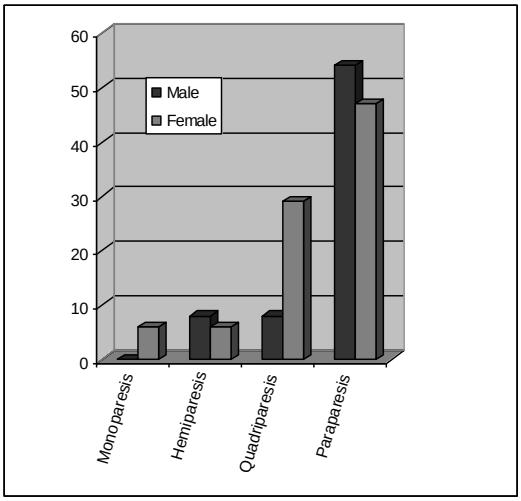


Table 2: : MRI lesion predilection in our study

MRI Site of Lesion	*Male*	*Female*	*Total*
Periventricular lesion	54% (7)	59% (10)	57%(17)
Spinal cord lesion	23% (5)	18% (3)	27%(8)
Optic nerve lesion	8% (1)	23% (4)	17%(5)
Cerebellar lesion	8% (1)	23% (4)	17%(5)
Brain stem lesion	8% (1)	5% (1)	7% (2)

DISCUSSION

Multiple studies were carried out on multiple sclerosis mostly in the West; Medline includes over 13000 articles on multiple sclerosis since 1966 excluding chapters and other book references.[2] Being a rare entity in tropical countries, this condition is not extensively studied in Pakistan; Paucity of resources may be another reason that common neurological disease of the West is understudied in Pakistan. Although we did not find new or unusual

presentations of MS because of a relatively small study population, we were able to match our results with other national and international studies. Being in a tropical zone it is commonly understood that Pakistani population is immune of this disease while the fact is that, this disease comes in differential diagnosis very late or not at all. Current opinion on treatment encourages early intervention with well-tolerated disease-modifying treatments (DMTs) in order to optimize long-term clinical outcomes.[3]

Clinical features, genetics, pathology, and immunological phenotype show a high degree of variability between individuals and ethnicities. Notably, no single pathway, reliable biomarker, diagnostic test, and specific treatment have yet been identified for all MS patients.[4]

The range of ages we found in our population was between 15-55 years overall, female ages were between 15-47 years and males were in 20-55 years range. In addition to female preponderance, we found that females tend to present early with the symptoms of multiple sclerosis. Our finding was supported by the observations of VoskuhlR, which found that worldwide women are affected more commonly.[5]

History of relapses and remissions was encountered so frequently that only five patients had history of persistent symptoms or first ever episode. It may be attributed to improper referrals and delay in diagnosis at non-specialized centers.Amongst symptoms weakness of limbs was more common and we found para-paresis, quadri-paresis, hemi-paresis and mono-paresis in descending order of frequency Shahid-J et al andRaza-S-Q et al reported weakness as the major complaint in a much larger group.[6,7]However, in their study specific segregation according to area involved was not found. This may be due to the fact that their study was based on MRI findings and not concerned with symptomatology.

Visual disturbance was next to weakness and we found it in more than half of the patients andnystagmus not uncommon. Jennifer et al found visual dysfunction in multiple sclerosis frequent and often irreversible and nearly half of the patients developing optic neuritis.it is heralding event in 15-20 % patients.[8]In acute ON, visual function generally spontaneously improves over weeks, and 95% of patients return to visual acuity of at least 6/12 within 12 months.[9]

In our study, a good number of patients had urinary incontinence. Bulent et al reported incidence of voiding dysfunction in 33-52% of MS patients.[10]Bladder dysfunction includes hesitancy, urgency, frequency and incontinence. These occur commonly in spinal cord involvement in males and are often associated with impotence, a symptom that the patient may not report unless specifically questioned in this regard.[11]

We found that the majority of our patients had plaques revealed by MRI; only a few patients had unremarkable MRI study. In these patients, we solely depend on history and clinical features. This pit fall may be because MRI was done too early or patients were treated. Werrings' findings indicate that new focal lesions associated with frank blood brain barrier leakage are preceded by subtle progressive alteration in tissue integrity beyond the resolution of conventional MRIs[12].

Peri-ventricular plaques were revealed by MRI in approximately half of the population.This was followed by spinal cord lesion, cerebellar lesion, optic nerve involvement and brainstem hyper-intensity signals in decreasing frequency. Tan-I-L states "MS lesions follow a specific pattern with most of the lesions in the peri-ventricular region and in deep white matter".[13]

CSF proteins were increased in around half of the patients. Raza-S-Q and Shahid-J et al had findings in accordance with ours[6,7].

CONCLUSION

The overall pattern of presentation of multiple sclerosis in our study was comparable to that reported from Western countries. We need a multicenter, large sample sized study to ascertain better picture of disease existence in Pakistan especially Northern areas

Early diagnosis is very important for the sake of management. No curative treatment is available. Aim of treatment is to delay relapses and prolong remissions andthese aims can be accomplished only if treatment is instituted early.

REFERENCES

1. Noseworthy JH, Lucchinetti C, Rodriguez M, Weinshenker BG. Multiple sclerosis. N Engl J Med. 2000; 343:938–52
2. Weinshenker-B-G, Bass-B, Rice-G-P, The natural history of multiple sclerosis: a geographical based study. Clinical course and disability.Brain 1989; 112:133-46.
3. Gold R, Wolinsky J, Amato M ,ComiG.Evolving expectations around early management of multiple sclerosisTherAdvNeurolDisord. 2010; 3(6): 351–67.
4. Disanto G, BerlangaA, Handel A, MorahanJ,Heterogeneity in Multiple Sclerosis: Scratching the Surface of a Complex DiseaseAutoimmune Dis. 2011; 2011: 932351.
5. VoskuhlR Sex differences in autoimmune diseases Biol Sex Differ. 2011; 2: 1
6. Shahid-J, Irshad-N, Parvaiz- K, Masood-U-R; Multiple sclerosis case report; JPMI Vol 8 no2 1994: 88-90.

7. Raza-S-Q, Anjum-M-N, Bakhtiari-M, Rasool-F. MR clinical correlation: Multiple sclerosis in tropical population. Pakistan journal of neurology, Vol4, No 1 Jan-Jun1998.
8. GravesJ, Laura J Eye disorders in patients with multiple sclerosis: natural history and management. Clinical ophthalmology 2010:4 1409 -22
9. Optic neuritis More than a loss of vision chur ,chens. australian Family physician 2009;39:789-93
10. onalB,siva A, buldu I, demirkesenO,cetinel B. voiding dysfunction due to multiple sclerosis: a large scale retrospective analysisintbraz j urol. 2009; 35: 326-33
11. Adam -D-R, Victor-M, Roper-H-.A. Other variants of MS- Multiple sclerosis In: Principles of neurology.6th ed. McGraw-Hill.1997; 36-913.
12. Werring-D-J, Brassat-D, Droogan-A-G, Clark-C-A, Symms-M-R, Barkur-G-J et al. The pathogenesis of lesions and normal –appearing white matter changes in multiple sclerosis: A serial diffusion MRI study. Brain.2000Aug, 123(Pt 8)1667-76.
13. Tan-I-I, et al. MR Venography of multiple sclerosis.AJNR-Am-J-neurolradiol.2000 Jun-Jul; 21(6): 1039-42.