

# Clinical Profile of Multiple Sclerosis in Kashmir (India): A Tertiary Care Hospital Based Study

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## Abstract

**Background:** Multiple sclerosis is chronic inflammatory demyelinating disorder of central nervous system occurring worldwide. It is believed to be an autoimmune disorder with variability in frequency, severity and chronicity.

**Materials and Methods:** Demographic and clinical records of 25 multiple sclerosis patients were reviewed which included; age, sex, marital and occupation states, presenting symptoms, time of on set, type of MS, family history and history of autoimmune or other disease.

**Results:** In total, 25 patients of multiple sclerosis (MS) diagnosed on the basis of Poser's criteria from Kashmir (India) were studied. The mean age of onset was 33.5 in males and 26.40 years in females. Male to female ratio was 1:1.57. Most of the patients were between second and third decade. Definite MS comprised of 64%, while remaining 36% were clinically probable. Visual involvement was seen in 40%, weakness of limbs (35%), sphincter involvement (20%), sensory symptoms (10%) and trigeminal neuralgia (10%) were the most common presenting symptoms. Pyramidal tract involvement (70%), spinothalamic and posterior column involvement (50%), cerebellar (25%), optic nerve (20%), internuclear ophthalmoplegia (8%), and optospinal involvement (12%) were common signs. Relapsing and remitting MS was found (72%), secondary progressive MS (20%) and primary progressive MS (8%) cases. Magnetic resonance imaging brain showed positive results in 60% cases. Cerebrospinal fluid was positive for oligoclonal bands in 8% of cases. Visual evoked potentials and brainstem auditory evoked response were positive in 20% and 16% of cases respectively.

**Conclusion:** Findings in this study revealed that the clinical profile of MS in Kashmir (India) was similar to that in other parts of the India and Asia.

**Key words:** Internuclear ophthalmoplegia, Multiple sclerosis, Oligoclonal bands

## INTRODUCTION

Multiple sclerosis (MS) is a chronic inflammatory demyelinating disorder of the central nervous system occurring worldwide resulting from immune response to myelin and to some extent to axons also. It is well recognized since the early description of Charcot. It is believed to be an autoimmune disorder with variability in frequency, severity and chronicity. MS was considered to be non-existent in Kashmir (India) till 1994.<sup>2</sup> There has been an increase in the number of diagnosed

cases in recent times with the growth of neurology as a sub-speciality in Kashmir (India) and availability of modern diagnostic tools like magnetic resonance imaging (MRI). Optic nerve and spinal cord involvement are more common in the Asian variety of MS.<sup>3</sup> In present study we studied clinical pattern of MS in Kashmir (India).

## MATERIALS AND METHODS

This study was conducted in Inpatient and Outpatient Departments of Neurology, Government Medical College and associated Hospitals Srinagar Kashmir (India). Totally 25 patients with varying clinical presentation were analyzed. Relevant investigations were done to diagnose MS and to exclude other MS mimicking conditions.

Complete hemogram, X-ray chest, erythrocyte sedimentation rate, blood chemistry comprising of kidney

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function test, blood sugars, collagen vascular profile, venereal disease research laboratory, and sarcoidosis profile were studied. Cerebrospinal fluid (CSF) for oligoclonal bands (OCBs), visual evoked potentials and brainstem auditory evoked response were done in some cases. MRI brain was done in all cases and MRI spinal cord in most of the cases. The cases were diagnosed according to Poser's diagnostic criteria (Table 1). No case of Devic's disease was included in the study.

## RESULTS

The patients enrolled in the study were categorized as definite or probable MS. The mean age of onset was 33.5 years in males and 26.40 years in females. The youngest patient was 18 years and the oldest 55 years of age. Maximum number of cases were found in the second and fourth decade. Male: female ratio was 1:1.57. The proportion of definite and probable cases was 64% and 36%, respectively.

### Demographic characteristics

Mean age at onset (males)	33.50 years
Mean age at onset (females)	26.40 years
Youngest patients age	18 years
Oldest patients age	55 years
Female to female ratio	1:1.57
Definite MS cases	64%
Probable MS cases	36%

MS: Multiple sclerosis

As far as clinical course of MS is concerned relapsing-remitting MS was seen in 72% cases, followed by secondary progressive MS in 20% and primary progressive MS in 8% and none of progressive relapsing MS was seen (Figure 1).

The most common presentation of MS was pyramidal tract involvement in 70% of cases, followed by sensory symptoms in 50%, visual symptoms in 40% of cases, bladder involvement in 20%, cerebellar in 25% and trigeminal neuralgia in 10% of cases (Figure 2).

Investigations including haemogram, biochemistry, and other relevant investigations were normal. CSF examination revealed OCB positivity in 8% of cases only. MRI was compatible with MS in 60% of cases. MRI cervical and dorsal spine were compatible with MS in 16% of cases (Figure 3).

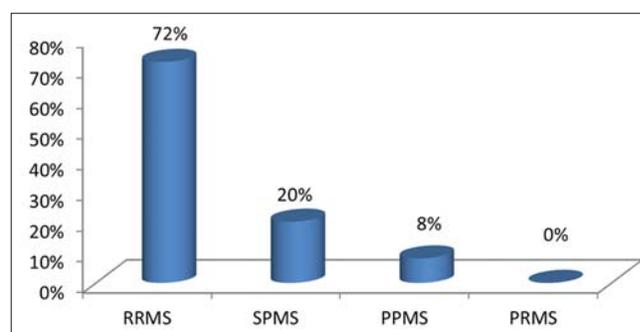
## DISCUSSION

MS is less common in tropical countries.<sup>2-5</sup> Epidemiological data are unavailable. Existing data have been obtained from small often retrospective studies from different parts of the country. Consideration of illness as insignificant by

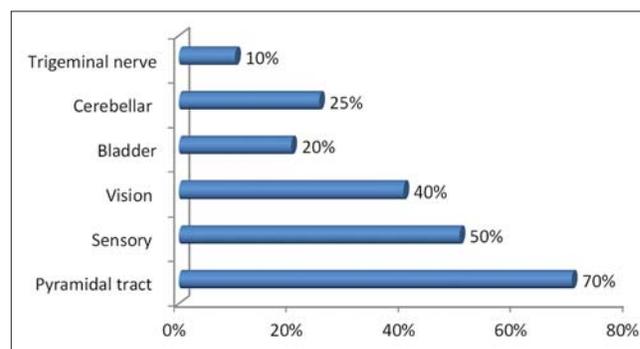
**Table 1: Poser criteria**

Diagnostic category	Number of lesions		Paraclinical	CSF
	Relapses	Clinical		
Clinical definite				
CDMS A1	2	2	NA	NA
CDMS A2	2	1	1	NA
Laboratory-supported definite				
LSDMS B1	2	1	1	(+)
LSDMS B2	1	2	NA	(+)
LSDMS B3	1	1	1	(+)
Clinical probable				
CPMS C1	2	1	(-)	(-)
CPMS C2	1	2	(-)	(-)
CPMS C3	1	1	1	(-)
Laboratory-supported probable				
LSPMS D1	2	(-)	(-)	(+)

MS: Multiple sclerosis, CSF: Cerebrospinal fluid



**Figure 1: Topography of multiple sclerosis**

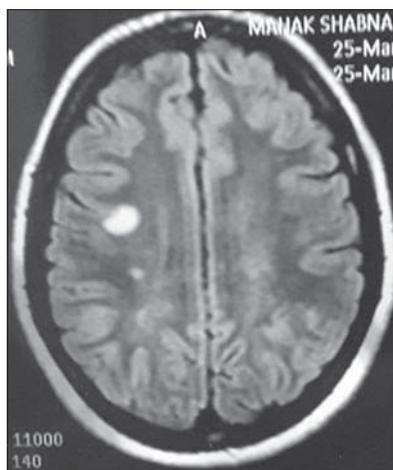


**Figure 2: Distribution by signs/symptoms**

the patients or reluctance on the part of treating doctor to consider the diagnosis of MS because of low frequency may be contributory for reported lower incidence.<sup>1</sup>

The present study has documented female to male ratio of 1:1.5. Five studies<sup>6-10</sup> have shown male preponderance (range 1.25-2), and one study<sup>11</sup> has shown female preponderance.

Kurtzke *et al.*<sup>12</sup> have shown female predominance (female: male - 1.8:1) among US veterans.



**Figure 3: Magnetic resonance imaging showing fresh hyperintense lesions**

Sahraian *et al.*<sup>13</sup> reported in Iran that mean age of onset was similar to other studies but the calculated prevalence of early onset MS was increased. The cumulative data indicate that the female to male ratio is increasing annually.

Börü *et al.*<sup>14</sup> reported that clinical features and course of MS patients in Turkey were typical of European MS. Turkey is a high-risk MS area. The present study has shown similar clinical features and course.<sup>15</sup>

Deleu *et al.*<sup>15</sup> reported that Qatar is a medium to high-risk area for MS in some different clinical characteristics as compared to other countries. Present Etemadifer *et al.*<sup>16</sup> reported that MS rate in Isfahan Iran is highest in the middle east. A possible explanation could be enhanced diagnosis of MS with MRI, revised MacDonald criteria, increasing number of neurologists and increasing younger population, etc.

Same criteria are responsible for diagnosing and identifying MS patients in our study as previously before MRI era and scarcity of neurologists MS was considered almost non-existent in Kashmir (India).

Browne *et al.*<sup>17</sup> reported that number of MS cases increased 2.1 million in 2008 to 2.3 million in 2013 reasons being improved health care, support services, inequity in the availability of services, number of MS groups and organizations worldwide have increased.

Orton *et al.*<sup>18</sup> reported that substantial increase in the female to male sex ratio in Canada seems to result from a disproportional increase in the incidence of MS in women.

Koch-Henriksen and Sørensen<sup>19</sup> reported that in even distribution of MS across populations can be attributed to differences in genes and the environment and their inter-relationship.

Cerreta<sup>20</sup> reported that MRI findings have proved to be useful diagnostic test in the initial evaluation and monitoring of patients with MS. It provides quantitative assessment of the disease and progression during clinical trials. The present study also revealed MRI positivity in significant number of patients and this diagnostic entity has revolutionized the diagnosis of MS.

Pugliatti *et al.*<sup>21</sup> reported prevalence rates are higher for women for all countries considered. Highest prevalence rates have been estimated from the age group 35-64 years for both sexes and all countries.

Singhal and Wadia<sup>6</sup> in their study of 30 patients from the Bombay region observed that MS patients were mostly from higher socio-economic status. The present study revealed patients belonging to different social strata.

Heydarpour *et al.*<sup>22</sup> reported that recent advances in MS registries will allow nationwide studies and temporal comparisons between countries provided that age and sex standardized estimates are available.

## CONCLUSION

We conclude that MS is not uncommon in Kashmir (India). There was a greater preponderance of women as seen worldwide. However clinical pattern conforms more to the “Asian variety” of MS. MRI positivity was lesser as compared to western series. The OCBs in CSF were less seen than in other Asian and western countries.

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