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Multiple Sclerosis in Thailand

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Abstract

The first autopsy proven case of multiple sclerosis in a Thai patient was reported in 1970. To-date, there has been no community-based epidemiological study of the disease in Thailand, but the prevalence rate was estimated to be about 2 per 100,000 population. Clinical studies showed a high female to male sex ratio of 4:1. There was a report of 17 paediatric MS patients from Ramathibodi Hospital, Bangkok, in 10 of the cases, the onset of illness was below 10 years old, suggesting that paediatric MS may be relatively more common among Thai patients. The frequency of clinical sites of lesions among Thai MS patients is similar to that of the Japanese, but different from the US, with more frequent involvement of the spinal cord and optic nerve and less frequent involvement of the cerebellum and brainstem. Paroxysmal tonic spasm is a prominent clinical feature seen in 44% of the patients. Magnetic resonance imaging was abnormal in over 90% of cases and human leukocyte antigen (HLA) studies showed a strong association with HLA DR_2 and DW_2, similar to studies from elsewhere in the world.

Key words: Multiple sclerosis, Thailand, clinical features, HLA

INTRODUCTION

Although recognized as a pathological entity since 1835[1] and found to be highly prevalent among Caucasians, multiple sclerosis (MS) is often regarded to be very rare among the Oriental population. In Thailand an autopsy proven case was first documented in 1970[2]. Further studies[3,4] including those by neurologists from Japan and other Asian countries[5] have shown that there is some difference in the clinical manifestations of MS between the Caucasian and non-Caucasian populations. The purpose of this article is to review what has been known about MS in Thailand during the last 30 years.

PREVALENCE

No community-based epidemiological study has been carried out to determine the incidence and prevalence of MS in Thailand. During a two year period (1965-67), 865 in-patients were personally examined by the author at the Neurological Unit of the Chulalongkorn University Hospital. There were 6 patients with amyotrophic lateral sclerosis and 3 patients with MS.[6] By comparing the hospital admissions of the two diseases, the prevalence of MS in Thailand is estimated to be about 2 per 100,000. In Japan, despite being in the temperate zone, the prevalence of MS is low, being about 1.6 to 3.9 per 100,000 population[7] as compared to 20 in the Southern States of America[8] and 85 in the UK.[9] In Hong Kong, the prevalence was reported to be 0.88 per 100,000.[10] It thus seems certain that multiple sclerosis is much rarer among Orientals than in Caucasians, a fact substantiated earlier by an epidemiological study in Los Angeles, where the prevalence of MS among the non-Japanese outnumbered the American-born Japanese by 4 to 1.[11]

CLINICAL FEATURES

Although rare, MS has been known to affect children as young as 2 years old. Using Poser's criteria (except for the age), Chiemchanya and Visudhiphan[12] reported 17 paediatric MS patients seen during a 15-year period from September 1977 to July 1993 at the Ramathibodi Hospital, which is a teaching hospital in Bangkok. In 10 of the patients, the onset of illness was below 10 years old. In 5 of the cases, the onset was 5 years old. The disease occurrence was about one in 300-400 paediatric neurological admissions. In another study by Jitpimolmard and Vejjajiva also from the Ramathibodi Hospital involving 50 adult patients over a 20 year period[13], the age of onset ranged from 13 to 68 years; the mean was 30.4years. The distribution of the age of onset was: <20 years (9 patients), 20-39 years (35 patients), >50 years (5 patients).

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Thus, paediatric MS may be relatively more common among Thai patients. The other unusual feature seen among the Thai MS patients is a high female to male sex ratio. In both the adult clinical series reported by Vejjajiva in 1974[4] and Jitpimolmard and Vejjajiva in 1994[13], the female to male sex ratio was 4:1, in the paediatric series by Chiemchanya and Visudhiphan quoted above[12], the ratio was 3.3:1.

Lesions responsible for the initial onset among the 50 Thai MS patients reported by Jitpimolmard and Vejjajiva[13] are set out in Table 1. Optic neuritis was the most common presenting symptom seen in 36% of patients. In most of the cases, it was unilateral. Myelopathy was the second most common presenting symptom seen in 26%. This was followed by optic-spinal involvement in 22%, and brainstem involvement in 6%. After an average follow-up of 6.7 years (ranging from 2 to 12 years), there was involvement of the spinal cord in 84% of patients, optic nerve in 76%, brain stem in 30% and cerebellum in 10%. The frequency of the clinical site of lesions among Thai MS patients is somewhat similar to that of the Japanese[14] but different from that reported from the U.S[15], with more frequent involvement of the spinal cord and optic nerve and less frequent involvement of the cerebellum and brainstem as in Table 2.

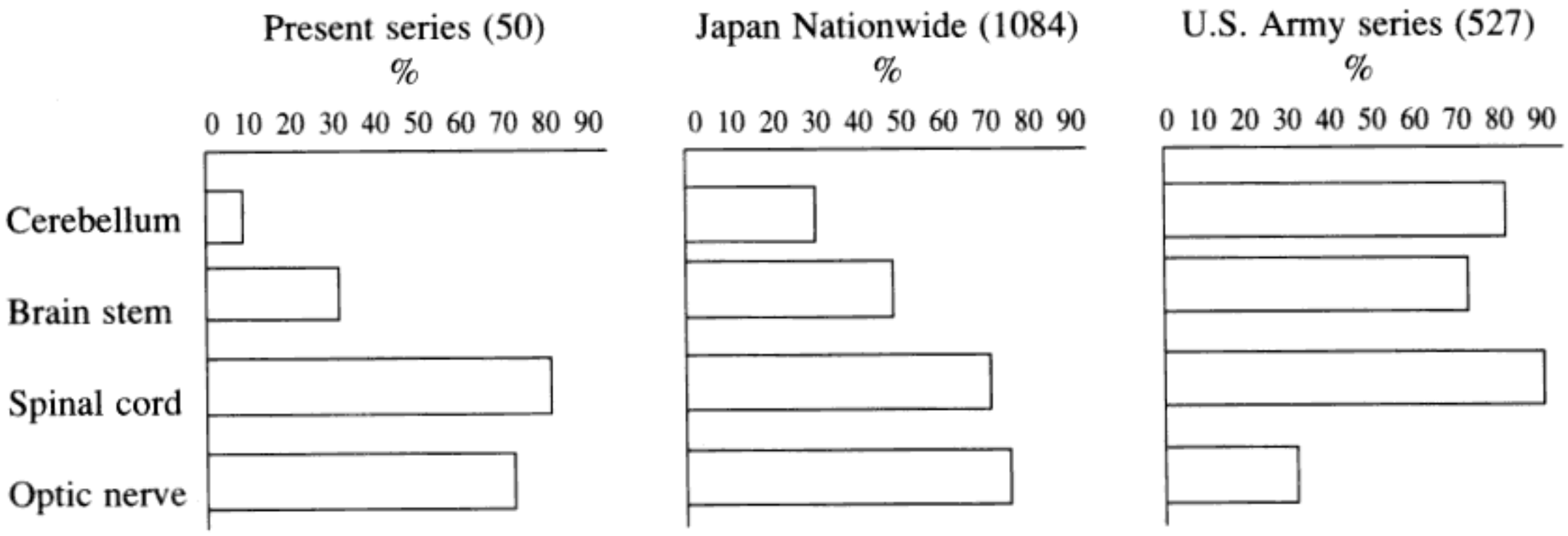
A unique symptom highly prevalent among Oriental MS is paroxysmal tonic spasm (PTS), which was first described by Matthews from UK[16] in 4 female patients. The symptom is typically rapid in onset, of brief duration and may occur many times a day. It is usually unilateral, often involving the arm, the leg and less often the face. The spasm may be precipitated by truncal movement, sensory stimulation and hyperventilation. Consciousness was preserved during the attack. PTS were present during the course of illness in 22 out of 50 Thai patients (44%)[13] as compared with about 4% in the British series[17,18]. Its frequent occurrence among Oriental MS patients[14] was first noted by Shibasaki and Kuroiwa from Japan.[19] The attack is effectively prevented by carbamazepine.

The clinical course of the 30 adult MS patients from the series by Jitpimolmard and Vejjajiva [13] who could be traced showed a high mortality rate of 33.3% (10 patients), with a mean duration of illness of 8.08 years (range 1-21 years). Three patients (10%) were bed-ridden, three (10%) were chair-bound and five patients (16.7%) had restricted activity. 9 patients (30%) had minor disability and were still able to work. The long-term prognosis of the patients is thus guarded.

TABLE 1: Lesion at initial onset in Thai multiple sclerosis patients

Lesions		No. of patients		per cent
Optic nerve				
Alone	Unilateral	14		
	Bilateral	4		
+ Spinal cord	Unilateral	5		
	Bilateral	6	34	68%
+ Brain stem	Unilateral	0		
	Bilateral	2		
+ Spinal cord + Brain stem	Unilateral	1		
	Bilateral	1		
+ Cerebral	Unilateral	1		
	Bilateral	0		
Spinal cord			13	26%
Brain stem			3	6%
Total			50	100%

TABLE 2: Frequency of clinically-estimated sites of lesions.



MAGNETIC RESONANCE IMAGING (MRI)

The high-sensitivity of MRI in demonstrating subclinical white matter lesion and its availability in Bangkok and other cities throughout the country have been responsible for the recent increased rate of case detection. In a clinical study by Suavansri et al involving 31 patients[20], 13 patients had MRI and abnormalities were present in 12 patients. The abnormalities were: increased signal intensity in T-2 weighted image either in the brain or spinal cord or both (8 patients), spinal cord enlargement (2 patients) and spinal cord atrophy (2 patients). MRI is the most sensitive ancillary aid to clinical diagnosis of MS among our patients.

ELECTROPHYSIOLOGICAL STUDIES

Visual and brainstem auditory evoked potentials are available in some of the major teaching hospitals in Thailand. In the clinical study by Suavansri et al quoted above[20], visual evoked potential was done in 19 patients, out of which 11(58%) were abnormal. Of the 11 patients with abnormal studies, 3 were subclinical. Brainstem auditory evoked potential was done in 7 patients. Of the 4 patients with clinical brainstem involvement, 2 were abnormal. Of the 3 patients with no brainstem symptom, all were normal.

CSF PROTEIN AND IMMUNOGLOBULINS

In about half of the patients in the study by Suavansri et al[20], CSF protein levels were abnormally raised to between 40 and 80mg%. CSF IgG to serum total protein ratio was abnormal in one-quarter of the patients examined.

HLA

It is well recognized that susceptibility to MS is determined partly by genetic factors. In Caucasatients, out of which 11(58%)ians, association with the HLA complex on the short arm of chromosome 6 have been demonstrated.[21] In European and North American MS patients, association with HLA DR_2, especially the HLA class II haplotypes DR_{15}, DQ_6 and DW_2[22] are well established. In Japan, associations with DR_2, DW_2, DR_6[23,24] and in Hong Kong Chinese[9], association with DW_2 were reported. In Thai MS patients, a recent study by Boonyakarnjanakorn et al from Ramthibodi Hospital[25] showed similar findings with DW_2 and DR_2 as predominant haplotypes.

CONCLUSION

Clinical studies during the past 30 years have clearly shown that MS is not as rare in Thailand as it was thought to be. With more neurologists and better diagnostic facilities, more cases is expected to be diagnosed.

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