Interferon treatment for multiple sclerosis patients in Hong Kong

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We report on nine patients with multiple sclerosis who had received interferon beta-1a treatment for 6 months or more. Seven patients were Chinese and two were Caucasian. Seven patients had the relapsing-remitting type of multiple sclerosis, one had the primary-progressive type, and one had the progressive-relapsing type. Among the six compliant patients with the relapsing-remitting type of disease, four had less frequent relapses after treatment. This study could not show whether or not the use of interferon beta-1a was beneficial to non-compliant patients, or patients with other types of multiple sclerosis.

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Key words: Interferon-beta/therapeutic use; Multiple sclerosis/drug therapy; Treatment outcome

Introduction

The difficulty of managing multiple sclerosis (MS) in Hong Kong is mainly because of two factors. The first is the small number of patients: there were only approximately 50 patients with MS in Hong Kong in 1989.[1] The second factor is the difference in clinical features between Chinese and western MS patients, which may imply different responses to interferon beta-la (IFNB) treatment. There is no large study of IFNB treatment among Chinese MS patients, whereas IFNB treatment among western MS patients has been studied and used successfully.[2-5] There is thus an urgent need to study the response of Chinese MS patients to IFNB treatment. Furthermore, the cost of IFNB is high, and the treatment is life-long. Hence, studies showing efficacious treatment of MS patients in Hong Kong are needed. It is practically impossible, however, to place all MS patients in one centre for treatment. Hence, we requested all 33 neurologists of the Hong Kong Neurological Society and two paediatric neurologists to participate in this study. A postal questionnaire was used and the investigations were supplemented through telephone correspondence where necessary.

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Case reports

The questionnaire response rate was approximately 90%, with a coverage of all 11 major hospitals in Hong Kong. Up to July 1997, there were 16 MS patients in Hong Kong who were known to have received IFNB treatment. Three patients had received this mode of treatment for less than 6 months. The duration of drug treatment was not known for four patients. The characteristics of the remaining nine MS patients and effects of treatment are shown in Tables 1 and 2, respectively. Seven of the nine patients were Chinese; the remaining two were Caucasian. Patient age ranged from 15 to 42 years and no patients had a family history of MS. Most (7/9) of the patients had the relapsing-remitting (RR) type of disease; one had the primary-progressive type, and one had the progressive-relapsing type. Of the six compliant RR-type MS patients, four had less frequent relapses after receiving IFNB treatment.

Discussion

Multiple sclerosis is a chronic disabling neurological disease. The questionnaire responses showed that the

Table 1. Characteristics of patients with multiple sclerosis

Patient No.	Sex/Age (years)	Ethnicity	Type of disease	Symptoms and signs at disease onset
1	F/26	Chinese	RR[¶]	Brainstem lesion
2	M/28	Chinese	RR	Eye symptoms[‡‡], spinal cord lesion
3	F/22	Chinese	RR	Eye symptoms
4	M/32	Caucasian	RR	Eye symptoms, cortical lesion, Spinal cord lesion, sphincter dysfunction
5	M/28	Chinese	RR	Cerebellar lesion
6	F/24	Chinese	RR	Eye symptoms
7	M/42	Chinese	PP**	Spinal cord lesion, sphincter dysfunction
8	F/33	Caucasian	PR[††]	Eye symptoms
9	F/15	Chinese	RR	Eye symptoms, spinal cord lesion

* VEP visual evoked response
† BAER brainstem auditory evoked response
‡ SSEP somatosensory evoked potential
§ CSF cerebrospinal fluid
‖ IgG immunoglobulin G
¶ RR relapsing-remitting
** PP primary-progressive
†† PR progressive-relapsing
‡‡ Blurring, diplopia, or loss of vision

Table 2. Patient response to interferon treatment

Patient No.	Type of disease	Duration of disease before treatment (months)	Duration of IFNB* treatment (months)[†]	Dosage (million-units/wk)
1	RR[‖]	99	10	9
2	RR	168	34	9
3	RR	12	12	6
4	RR	124	8	6
5	RR	72	6	6
6	RR	39	9	6
7	PP[¶]	15	7	3
8	PR**	14	7	18
9	RR	56	18	6

* INFB interferon beta-1a
† As at the end of July 1997; all patients except patient 9 were compliant; the Hospital Authority paid for the treatment of patients 6 and 9,
‡ EDSS expanded disability status scale
§ MRI magnetic resonance imaging
‖ RR relapsing-remitting
¶ PP primary-progressive
** PR progressive-relapsing
†† Score at last follow-up

number of MS patients in Hong Kong was approximately 50, of whom 16 had been given IFNB treatment. The patient characteristics had many similar features to those of western MS patients: young adult–age onset, predominant eye symptoms and signs at the onset of disease, and predominantly the RR-type of disease.[6] There were also some features not commonly seen in western MS patients: low incidence (approximately 50 MS patients in Hong Kong's 6.4 million population), more spinal cord lesions, and fewer cerebrospinal fluid immunoglobulin G abnormalities.

The score on the Kurtzke Expanded Disability Status Scale (EDSS), exacerbation rate, and magnetic resonance imaging (MRI) were used to assess patients. A score of 0 on the EDSS represents normal results from a neurological examination, with increasing increments of 0.5 representing a worsening of a disability; a score of 10 represents death. A score of 4.0 represents full ambulatory state without aid, and the patient is self-sufficient for 12 hours a day. Patients 4, 6, 7, and 8 showed improvement in their EDSS scores when compared with their baseline scores. Among the six compliant patients with RR-type MS, four had fewer relapses and two had more relapses. Patient 9 was a non-compliant RR-type MS patient and continued to have frequent relapses. Five RR-type MS patients had MRI scans repeated; one scan showed improvement, whereas two showed increases in the T2-weighted lesion load.

The treatment dosage up to July 1997 ranged from 3 to 18 million-units per week. This variation in dosage was due to the fact that clinicians tried to give the maximal benefit to patients at the lowest treatment dosage. No patient received other forms of interferon and no patient received copolymer I (glatiramer acetate). Most (6/9) patients paid for the IFNB treatment themselves. One of the patients had previously received a course of cyclosporin without significant improvement. The side effects of IFNB were minimal: four patients had injection pain, two had myalgia, and two had mild headache.

Two recent large-scale studies of western MS patients have shown the efficacy of IFNB.[7,8] This

VEP*	BAER†	SSEP‡	CSF§-IgG‖	IgG : protein
Abnormal	Normal	Abnormal	Abnormal	Abnormal
Abnormal	Normal	Abnormal	-	-
Abnormal	Abnormal	Abnormal	-	-
-	-	-	-	-
Abnormal	Normal	Normal	Normal	Normal
Abnormal	Normal	Normal	Normal	Normal
Normal	Normal	Abnormal	-	-
Normal	-	Normal	Normal	Normal
Normal	-	Normal	Normal	Normal

Pretreatment				Post-treatment			
Baseline EDSS‡ score	No. of relapses	Annual relapse rate	MRI§ scan	EDSS score	No. of relapses	Annual relapse rate	MRI§ scan
4.5	6	0.7	Abnormal	4.5-6.0††	3	3.6	Not done
5.5	8	0.6	Abnormal	5.5	0	0	Not done
1.5	2	2.0	Normal	1.5	0	0	Same
2.0	20	1.9	Abnormal	0	0	0	Improved
8.0	8	1.3	Abnormal	8.0	0	0	Same
1.0	3	0.9	Abnormal	0 †† -2.0	1	1.3	Worse
7.0	1	0.8	Abnormal	6.5 †† -7.0	1	1.7	-
4.5	6	5.1	Abnormal	3.0 ††-7.0	2	3.4	-
2.0	6	1.3	Abnormal	2.5 †† -4.0	4	2.7	Worse

and a charity paid for that of patient 5; the remaining patients paid for treatment themselves

study showed a trend of improved EDSS scores during the follow-up of compliant patients with RR-type MS. This study could not show whether or not using INFB in non-compliant patients or those with other types of MS was beneficial. The only way to find the answer is to conduct multicentred randomised controlled clinical trials.

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