LETTER TO THE EDITOR

Interferon beta-1a as adjunctive treatment for multifocal motor neuropathy: an open label trial

Dear Editor,

Infusions of intravenous immunoglobulins (IVIg) are the only established therapy for patients with multifocal motor neuropathy (MMN) *(Umapathi et al., 2009)*, but the effects are transient and the infusions have to be repeated periodically *(Van den Berg, 2007)*. As two pilot trials with interferon beta-1a (INFβ-1a) as a monotherapy have suggested some benefit *(Martina et al., 1999; van den Berg-Vos et al., 2000)*, we conducted a pilot trial with INFβ-1a as adjunctive therapy to assess the effect on the IVIg dose requirement in patients with MMN who were responsive to IVIg but required chronic IVIg therapy.

We recruited three MMN patients who had been treated with IVIg on an average of 6 years with IVIg therapy at one infusion every 2–6 weeks *(Kuntzer et al., 2007)*. Prior attempts to wean the patients from IVIg by combining immunosuppressant agents (mofetil mycophenolate and intravenous cyclophosphamide) had failed. This study was a prospective, unblinded, uncontrolled, 6-month pilot study. INFβ-1a (Rebif®, sponsored by MerckSerono Inc., Switzerland) was administered at a 44 μg dose three times a week subcutaneously during 6 months whereas IVIg therapy was maintained. The patients could prolong INFβ-1a treatment by 3 months. Total IVIg dose was recorded in the 12 months prior, during, and 6 months after the introduction of INFβ-1a. We hypothesized that the addition of INFβ-1a would result in a reduction of IVIg dose or in prolonged intervals between IVIg. Secondary endpoints included: improvement of upper extremity INCAT score; improved strength in 15 muscles according to the Neurological Disability Scale; reduction of treatment costs; and improved quality of life by using the SF-36 questionnaire. Nerve conduction studies were obtained at baseline and at the end of the study.

Primary and secondary endpoints before, during, and after the introduction of INFβ-1a are reported in Table 1. The interval between each infusion was lengthened by 2 weeks in Patients 1 and 2 and was unchanged in Patient 3 (Table 1). Patients 1 and 2 experienced a more rapid recovery and a slower relapse after each IVIg therapy when combined with INFβ-1a and opted to prolong their INFβ-1a by 3 months. Only Patient 2 maintained a prolonged interval of IVIg infusions after discontinuing INFβ-1a. We did not observe changes in the medical research council (MRC) scale, the inflammatory neuropathy cause and treatment (INCAT) score, the quality of life, treatment costs, or electrophysiological parameters.

A combination therapy should hinder the progression of MMN, allow reduction of IVIg doses, or allow lengthening of IVIg infusion intervals *(Umapathi et al., 2009)*. Although 2 of our 3 patients increased their infusion intervals while on INFβ-1a, none elected to continue treatment beyond the study period due to mild side effects and modest benefits. Thus, our limited experience would not support larger trials. As we studied only 3 patients, we also wonder about the experience of others treated with INFβ-1a but not in the literature.

Sincerely,

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Table 1. Primary and secondary endpoints before and after INFβ-1a treatment.

Patients, sex, age (years)	Disease duration; type of weakness	Nerves involved with CB	Anti-GM1 Ab	Interval between IVIg infusions (weeks)	Mean IVIg dose per month (g)	MRC sum score (points)	INCAT (points)	SF-36 (points)
				Before; during; after INFβ-1a		Before; after INFβ-1a		
1, female, 66	4 years; ↓ left handgrip and arm flexion	Left musculo-cutaneous and radial	Positive	6; 8; 6	78; 58.5; 78	5; 6	2; 2	55; 55
2, male, 35	9 years; ↓ handgrip bilaterally	Bilateral ulnar and median	Negative	5; 7; 6	138.6; 99; 115.5	14; 11	3; 3	92; 93
3, male, 47	5 years; ↓ right handgrip	Right ulnar and median	Negative	2; 2; 2	Always 86.6	3; 3	3; 3	83; 87

INFβ-1a, interferon beta-1a; CB, conduction block; Ab, antibodies

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