Variability of response to intravenous immunoglobulins treatment in “Chronic inflammatory demyelinating polyradiculoneuropathy plus”: Report of a case history experience


1 Department of Clinical and Experimental Medicine, Clinical Neurology, University of Pisa, Pisa, Italy
2 Department of Clinical and Experimental Medicine, A.O. Hematology, University of Pisa, Pisa, Italy
3 Neurological Unit, Medical Department, Campo di Marte Hospital, Lucca, Italy
4 Neurological Clinic, San Camillo Dei Celli Hospital, Rieti, Italy
5 Department of Clinical and Experimental Medicine, Clinical Immunology Unit, University of Pisa, Italy

Background

Chronic inflammatory demyelinating polyradiculoneuropathy (CIDP) is an autoimmune disorder presenting with typical or, more rarely, atypical variant features. In addition, CIDP can also be associated to clinical or laboratory findings suggesting it can be a more complex disorder affecting tissues and systems other than peripheral nervous system (Koller et al., 2005), more often the immune system, a condition referred to as “CIDP plus”. Related to that, therapeutic response to intravenous immunoglobulin (IVIg), the gold standard therapy for this disease, can be variable underlying heterogeneity of the related pathogenic mechanisms, for instance proliferation of Schwann cells caused by repeated demyelination and remyelination neuropathic process, with the characteristic onion-bulb aspect at peripheral nerve biopsy (Duggins AJ et al., 1999) (Fig.1).

Methods

We report here our experience in a series of 9 patients with a CIDP diagnosis, according to EFNS/PNS criteria, (Joint Task Force of the EFNS and the PNS, 2010), treated with IVIg and different comorbid conditions (Tab 1 and Fig. 2). In particular, CIDP was associated with the following disorders mainly of autoimmune origin: myeloid dysplasia, thyroid-related ocular myopathy (Fig. 3-4), multiple sclerosis and ocular myopathy, macular oedema, polipeptide deep venous thrombosis, monoclonal IgG gammapathy and a patient showed a complex picture of systemic autoimmune disorders (gastrointestinal with gastric parietal cell antibodies and Helicobacter Pylori positivity, vasculitis, autoimmune thyroiditis, bronchial asthma, fibromyalgia); in another patient CIDP was associated with Charcot Marie Tooth type 1A and in the last one history of successfully surgically treated kidney cancer was present. All patients were treated with IVIg at standard doses (0,4 mg/kg/daily for five consecutive days) with frequent variable of administration.

Results

The patient with CIDP and ocular myositis showed a clear improvement on CIDP symptoms and a mild benefit in diplopia, related to ocular muscles involvement. A clinical response was not obtained in the patient with CIDP and multiple sclerosis, actually performing plasmapheresis, azathioprine and glatiramer acetate, with benefit limited to CNS condition. In the patient with CIDP and complex autoimmune picture, IVIg treatment was discontinued for intolerance. The remaining patients showed a clear benefit on CIDP related symptoms, although at variable rate of IVIg delivery, with a good profile of treatment tolerability.

Discussion and Conclusions

Taken together, data from the present case series suggest highly heterogeneous profile of clinical response to IVIg treatment in CIDP associated with concomitant dysimmune disorders. To deep inside into those mechanisms associated with the inflammatory demyelinating process can be useful in CIDP, also in terms to identify parameters predictors of therapeutic response in individual patients affected by this disease.

REFERENCES


Fig. 1: Sural nerve biopsy in 1983. There is a reduction in nerve fibre density, several thinly myelinated fibres in early onion-bulb formations (long arrows) and occasional naked axons (short arrows). Toluidine blue. Scale bar = 10 µm. (Duggins AJ et al., 1999).

Fig. 2: CIDP with comorbid/coexisting conditions

Fig. 3: FLAIR (A) and T2-weighted (B) images. The optic branches of trigeminal nerves (arrows) are abnormally thick and hyperintense on T2-weighted images

Fig. 4: T1-weighted images after contrast medium administration (A) and T2-weighted images (B) images. Extrinsic ocular muscles appear thickened and hyperintense on T2-weighted images. Such findings are prevalent for medial, superior and inferior rectus muscles (arrows).