

Combined Management of Multiple Sclerosis-Related Spasticity

Luana Evangelista

Demyelinating Disease Center, Department of Neurology, San Salvatore Hospital, L'Aquila, Italy

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ABSTRACT

Spasticity is one of the most frequently occurring symptoms associated with multiple sclerosis (MS). Pharmacological therapy and interventional procedures are the main approaches to treatment of MS spasticity. Nabiximols is an oromucosal spray used as an add-on treatment for unresponsive spasticity in patients with MS. The COVID-19 pandemic has had a major impact on the management of patients with chronic neurodegenerative conditions. During this period, many people have had difficulty accessing hospitals or rehabilitation facilities.

We report a case that shows the efficacy and tolerability of the combination of pharmacological treatment and neurorehabilitation in the treatment of MS-related spasticity.

KEYWORDS

Spasticity, multiple sclerosis, nabiximols, neurorehabilitation

LEARNING POINTS

- The combination of pharmacological treatment and neurorehabilitation is effective and better tolerated in the treatment of MS-related spasticity.
- During the COVID-19 pandemic, telemedicine allowed integration of the provision of healthcare in the absence of an in-person visit.
- Nabiximols in association with an intense neurorehabilitation programme allowed improvement of the patient's neurological outlook.

INTRODUCTION

Spasticity is a common chronic symptom in patients with multiple sclerosis (MS) that increases in prevalence and severity as the disease progresses^[1]. MS spasticity is associated with other symptoms, such as painful spasms, bladder dysfunction, pain, sleep disorders and depression with a severe impact on patient quality of life^[2,3].

Pharmacological therapy and interventional procedures (for example, physiotherapy) are the main approaches for treating MS spasticity^[1].

The current recommended oral therapies for mild to moderate spasticity include baclofen, tizanidine, benzodiazepines (diazepam, clonazepam), dantrolene sodium, gabapentin and pregabalin.

However, these therapeutic options are not completely effective in managing such complex symptoms and, in addition, their prolonged use is associated with numerous adverse reactions^[3].

Nabiximols is an oromucosal spray, containing delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD), that is commonly used as an add-on treatment for unresponsive spasticity in MS patients. Nabiximols contains THC and CBD in a 1:1 ratio. THC binds to cannabinoid receptors, the activation of which modulates muscle tone. The high concentrations of CBD are proposed to reduce the psychoactive properties of THC. Several real-world studies have demonstrated the efficacy of nabiximols in cases of moderate to severe MS-related spasticity^[2-4]. Common side effects of nabiximols include dizziness and tiredness, whereas psychiatric symptoms, such as anxiety, changes in mood and paranoid ideas, have rarely been reported^[4].

Moreover, physiotherapy interventions are important non-pharmacological tools in the treatment of spasticity in MS, as neurorehabilitation is intended to maintain the muscle length, prevent contracture and change the mechanical properties of the musculoskeletal system and plasticity within the central nervous system^[2].

We report our experience of one case where the management of MS-related spasticity was multidisciplinary.

CASE DESCRIPTION

A 51-year-old male, affected for 5 years with primary progressive MS, first started disease-modifying therapy with ocrelizumab in 2018. His family and personal history were unremarkable, and he was not diagnosed with any psychiatric illness, including major depression or bipolar disorders. He had never been treated with specific psychoactive drugs. Neurological examination showed moderate to severe paraparesis and hypoaesthesia prevalent on the right side, tetrahyperreflexia and urinary urgency. Walking was limited to a few steps with bilateral support and his Expanded Disability Status Scale (EDSS) score was 7.5. In addition, the patient presented a moderate to severe spasticity and intense neuropathic pain in the legs, with a Numeric Rating Scale (NRS) score for spasticity of 8 and an Ambulation Index (AI) of 7. These symptoms were partially responsive to baclofen 50 mg daily and pregabalin 150 mg daily.

In July 2018, he was prescribed nabiximols (Sativex®) to improve his severe spasticity, until reaching a daily dosage of 5 puffs (2.7 mg

of THC and 2.5 mg of CBD per single dose), gradually discontinuing baclofen. At the 3-month follow-up, he had a good response to the treatment, with the NRS score reduced to 5.

Nabiximols, in association with an intense neurorehabilitation programme, allowed improvement of the patient's neurological outlook until the national health emergency in March 2020 (COVID-19 pandemic).

During the period of national lockdown, the patient was unable to undergo rehabilitation for over 3 months. Therefore, the patient had a progressive worsening of clinical outcomes.

During telemedicine follow-up, a good response to the treatment was shown with an increase of nabiximols to 10 puffs daily. Nevertheless, at the 1-month follow-up, the patient presented behavioural changes with alternations of manic and depressive phases, and suicidal ideation, so nabiximols was reduced to the starting dosage (5 puffs daily) with remission of psychiatric symptoms within a few days. Baclofen 25 mg was reintroduced. The patient also started neuromotor rehabilitation as soon as possible. Currently, the patient has good control of the symptoms of spasticity and neuropathic pain thanks to the integration of drug therapy and rehabilitation.

DISCUSSION

The complexity of spasticity poses several problems for its clinical management and has a strong impact on the patient's quality of life and, in particular, on normal daily activities.

In this context, nabiximols represents a valid therapeutic option when conventional therapies have been ineffective or are not tolerated. In addition, compared with existing therapies, nabiximols has the advantage of being a non-invasive treatment for patients^[3].

Furthermore, recent studies have shown how patients undergoing neurorehabilitation programmes combined with nabiximols had a higher probability of having a clinically relevant response, compared to those treated only with nabiximols^[2].

However, the COVID-19 pandemic is strongly impacting all domains of our healthcare systems, including neurorehabilitation. In Italy, medical activities were postponed, allowing shifting of staff and facilities to intensive care, with neurorehabilitation limited to time-dependent diseases. Hospital access to people with chronic neurodegenerative conditions, such as MS, has also been postponed. Neurorehabilitation cannot be delayed or interrupted for people with chronic disabilities and for patients with chronic progressive diseases who require constant monitoring and care^[5].

During this period, the development of telemedicine platforms has made it possible to integrate the provision of healthcare in the absence of an in-person visit.

Spasticity management requires a complex approach. Our case shows how the combination of pharmacological treatment and neurorehabilitation is effective and better tolerated in the treatment of MS-related spasticity.

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