Rapid disease progression following initiation treatment with dimethyl fumarate in patient with neuromyelitis optica spectrum disorders (NMOSDS)

J. Rudnicka-Czerwiec, M. Popiel, H. Bartosik-Psujek
Klinika Neurologii z Pododdziałem Leczenia Udarów Mózgu, Kliniczny Szpital Wojewódzki nr 2, Poland

Neuromyelitis optica spectrum disorders (NMOSDs) are the group of aggressive autoimmune inflammatory demyelinating diseases of the central nervous system. NMOSDs manifest predominantly with attacks of optic neuritis and longitudinally extensive transverse myelitis. Correct diagnosis and adequate treatment is required to prevent morbidity and mortality. Corticosteroids used in relapses and immunosuppression with agents such as azathioprine, mycophenolate mofetil, rituximab is the mainstay of NMOSD's treatment. Disease-modifying drugs effective in multiple sclerosis (MS) might exacerbate NMOSDs. We present the case of NMOSDs`s patient diagnosed with MS after 2 relapses in the form of optic neuropathy and left hemiparesis with painful dysesthesia with incomplete recovery on intravenous methylprednisolone. Serum anti-AQP4 antibody tested with indirect immunofluorescence assay was negative. Interferon beta 1a treatment was started, but patient kept having relapses. Then treatment was shifted to dimethyl fumarate. 3 months after new treatment initiation the patient experienced a severe relapse characterized by spastic hemiplegia. Spine MRI showed extensive demyelinisation with cord swelling of the medulla extending down to Th1 vertebral level. Clinical and radiological symptoms were pathognomonic for NMOSDs. Serum anti-AQP4 was tested again using a cellular method and a positive result was obtained. Azathioprine treatment was started, dosed 50mg twice a day. Exacerbation and even more severe relapses have been previously reported in NMOSD during the use of interferons, natalizumab, fingolimod and alemtuzumab but there are few reports of such worsening using dimethyl fumarate.