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A Case Report of Three Tumefactive Demyelinating Lesions After Initiating Fingolimod and Review of Articles

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Background: Tumefactive demyelinating lesions (TDLS) as lesions >2cm, are one of the rare variants of multiple sclerosis (MS). There are several case reports of tdl after administration of fingolimod as first-line DMD in MS treatment. Here, we report a case of tdl following fingolimod treatment.
Methods: We report the case of a 30-year-old female who was diagnosed with relapsing remitting MS (RRMS) 15 years ago and with developed TDL, nine months after switching therapy from interferon-β to fingolimod. In the first step, we ruled out the John Cunningham Virus (JCV) with cerebrospinal fluid (CSF) testing and then administered methylprednisolone. The lesion shrank following pulse therapy, and the patient was switched from fingolimod to rituximab.
Results: We reviewed the cases reported of TDL after initiating of fingolimod to better management of TDL development in MS patients. Our case was a 30-year-old woman with a 15-year history from the onset of disease to TDL and, the TDL was developed after nine months from taking fingolimod. In our reviewed reports, the female-to-male ratio was 7/4. The median age of onset of disease was 37.45 years and the time from onset of disease to TDL was 8.5 years. Moreover, the median period for TDL development was 8.7 years after fingolimod treatment. According to MRI, the majority of TDLS are supratentorial, and relatively most of them are located at the frontal lobe, as well as they mostly get open ring enhancement with no or slight mass effect.
Conclusions: There have been several reports of developing TDLS after initiating fingolimod in the patients with MS. We couldn't determine a particular time pattern to develop TDLS after fingolimod initiation. So, it is important to investigate the pathophysiology impacts of fingolimod on TDLS, and identify the susceptible patients and not to recommend this drug to them.