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Epileptic Seizures in Patients with Multiple Sclerosis

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Abstract : Background: Multiple sclerosis (MS) is a chronic autoimmune disease that affects the central nervous system in young adults. It involves the immune system attacking the protective covering of nerve fibers (myelin), leading to inflammation and damage. MS can result in various neurological symptoms, such as muscle weakness, coordination problems, and sensory disturbances. Seizures are not common in MS, and the frequency is estimated between 0.4 to 6.4% over the disease course. Objective: Investigate the frequency of seizures in individuals with multiple sclerosis and to identify associated risk factors. Methods: We evaluated the frequency of seizures in a large cohort of 5686 MS patients followed at the Sheba Multiple Sclerosis Center and studied associated risk factors and comorbidities. Our research was based on data collection using a cohort study design. We applied logistic regression analysis to assess the strength of associations. Results: We found that younger age at onset, longer disease duration, and prolonged time to immunomodulatory treatment initiation were associated with increased risk for seizures. Conclusions: Our findings suggest that seizures in people with MS are directly related to the demyelination process and not associated with other factors like medication side effects or comorbid conditions. Therefore, initiating immunomodulatory treatment early in the disease course could reduce not only disease activity but also decrease seizure risk.

Keywords : epilepsy, seizures, multiple sclerosis, white matter, age
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