Intravenous Tramadol for Treatment of anti-NMDA Encephalitis

Published date: April 20, 2018

Technology description

The invention is a combinatorial therapy used to enhance the efficacy of plasma exchange (PLEX) in treating patients with anti-NMDAR encephalitis. This treatment regimen would treat both the psychiatric and immunological manifestations of this disorder and substantially lower the patients' recovery periods.
Background:
Anti-NMDAR encephalitis is an autoimmune disorder that is characterized by serum and/or cerebral spinal fluid (CSF) antibody titers positive for NMDARs. It is generally accepted that an infection and/or tumor leads to the development of NMDAR-targeting antibodies that infiltrate and attack the central nervous system (CNS). This leads to patients exhibiting a range of neurological and psychiatric symptoms: altered mental state, psychosis, seizures, and impairment of voluntary movement (dyskinesia). While anti-NMDAR encephalitis was initially categorized as a tumor-associated disorder in adult females with ovarian teratomas, the total number of diagnosed cases in the United States has also included children and adolescents without tumors, and this form of autoimmunity is now identified as the second-leading cause of encephalitis.
The invention is a method that entails using, as a first arm, a therapeutic agent to control dyskinesia and treat anti-NMDAR encephalitis.The binding of this agent to NMDARs is proposed to cause non-competitive inhibition of NMDAR-specific antibodies, which prevents them from binding to the NMDARs. This releases them into the bloodstream and, consequently, mitigates the patient' s catatonic symptoms. Further, because the autoimmune antibodies are no longer bound to NMDARs, they are more effectively removed by the second arm of the treatment, conventional PLEX therapy.

Advantages

This improvement is expected to expedite and increase the likelihood of patient recovery without having to resort to second-line immunotherapeutics.

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