

Clinical significance of autoimmunity in Nervous System Disorders (NSD)

Vijendra K. Singh

Neuro Immune Bio-Systems (NIBS) Research Program, USA

Autoimmunity is a major cause underlying many chronic diseases. There are 85 or so human conditions that are generally considered as autoimmune diseases that affect an estimated 55 million Americans. This number however never includes millions more people who show autoimmune problems while suffering from nervous system disorders (NSDs) including autism, Alzheimer's disease. I have recently suggested that NSDs that involve autoimmunity should also be counted as autoimmune diseases so that millions of people can be helped with immune therapies using autoimmunity as a target – examples include autism, Alzheimer's disease, obsessive-compulsive disorder (OCD), Tourette's syndrome (TS), etc. More than 25 years ago, we recognized the importance of a reciprocal relationship that existed between our immune system and nervous system or so-called "Neuro-Immune Circuitry." We postulated that the disruption of this neuro-immune circuitry might actually be the reason behind a wide range of brain diseases and mental illnesses. Environmental factors such as a viral or bacterial infection, trauma or brain injury and other factors can easily break down this circuitry. To this end, one of the most important findings in this field is the observation that autoimmune disease of the nervous system is the most common problem when the neuro-immune circuitry breaks down. This should prove to be clinically quite relevant because autoimmune diseases of the nervous system could be recognized as "Neuro-Autoimmune Diseases" and be therefore treated with immune therapies that are currently being used for other autoimmune diseases. This is already beginning to happen as exemplified by immune therapy for individuals with autism, OCD and TS. Recently, we hypothesized that the disruption of neuro-immune circuitry could cause neuro-immune imbalance in the body, thereby also affecting brain plasticity or brain function. My presentation will deal with such topics as: Nervous System Disorders as Autoimmune Diseases; Infections Linked to Nervous System Disorders; Neuro-Immune Circuitry in Nervous System Disorders; New Findings for Autoimmune Diseases; and Future directions including Stem Cell Therapy for Nervous System Disorders. In summary, my presentation will focus on the scientific evidence that suggests a pathogenic role of brain autoimmunity in nervous system disorders (NSDs) and the impact of autoimmune therapy to help affected individuals who show typical profiles of autoimmune diseases while suffering from NSDs.

vj.nibs@gmail.com