Anti-neutral glycolipids antibodies-mediated neurological disorder, EMRN: A subtype of MS?

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Multiple Sclerosis (MS) is mainly involved in central nervous system (CNS) but not peripheral nervous system (PNS), whereas chronic inflammatory demyelinating polyradiculopathy (CIDP) is mainly involved in PNS but not CNS. Recently, however, a new clinical disorder involving both CNS and PNS is emerging called as encephalomyeloradiculo-neuropathy (EMRN). Several years ago, we discovered new type autoantibodies against neutral glycolipids in sera and cerebrospinal fluid (CSF) from these patients and the titers of these autoantibodies were well correlated with disease status (*Neurology* 2014), where we proposed that these autoantibodies can be served as a surrogate marker for EMRN. Since then, we have collected more than 20 similar cases at our department and other cases from abroad and all over Japan. The clinical phenotypes seem rather broad; some developed CNS impairment first followed by PNS involvements, others vice versa. There was no gender preponderance and most cases exhibit autonomic dysfunction. Among autoantibodies against neutral glycolipids, anti-lactosylceramide antibodies (α-LacCer) were most frequently detected. Previous studies have shown that α-LacCer activate inflammatory responses in neutrophils. We will discuss their biochemical and immunological actions on neuronal and astroglial cells as well as detailed clinical pictures of EMRN patients. The data strongly suggest that these autoantibodies against neutral glycolipids profound biological impacts on neuronal cells as well as glial cells in culture.

Speaker Biography

Tatsuro Mutoh has completed his MD and PhD degrees from Nagoya University School of Medicine, Japan in 1980 and 1986, respectively. He was appointed as Assistant Prof. at Fukui Medical School in 1986. Then, he moved to National Institute of Health (NIH), NICHD, USA as a Visiting Fellow from 1987-1990, where he purified novel nerve growth factor-responsive protein kinases. He was promoted to Full Professor and Chairman at Department of Neurology, Fujita Health University, Japan in 2006. His expertise is Neuroglycobiology, protein-lipid interaction, and neuroimmunology. He has been acting as Board Member of Front Cell Neurosci, Front in Biosci, and so on.

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