Diagnostic Markers of Autoimmune Neuropathological Diseases

Rahul Tyagi

Neuroscience Research Laboratory, Department of Neurology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

CME cum workshop on “Diagnostic markers of autoimmune neuropathological diseases” was held on March 18, 2017, organized by Department of Immunopathology, Department of Postgraduate Institute of Medical Education and Research, Chandigarh Neurology in collaboration with Euroimmune. Around 50 attendees including research scholars, residents, technicians, and faculties were present during the session. Prof. Ranjana W. Minz of Department of Immunopathology, PGIMER, initiated the CME by her introductory address and need of conducting the CME on autoimmune neuropathologies. Dr. Astha Takkar, Department of Neurology, talked about manifestations and immunopathological hallmarks related to neuromyelitis optica (NMO) or Devic’s Disease. She described the difference between multiple sclerosis and NMO based on the autoimmunity against aquaporin 4 (AQP4). AQP4 is the membrane water channel involved in the transport of water and plays crucial role in maintaining the integrity of blood brain barrier. Differential diagnosis of NMO is based on the distinction between AQP4+ve and AQP4–ve cases. Astrocytes are the target cells of autoimmune attack in the AQP4+ve cases. Moreover, identification of NMO in AQP4–ve cases is a diagnostic challenge where role of myelin oligodendrocyte glycoprotein (MOG) antibodies becomes crucial as an immunopathological hallmark. MOG is a transmembrane protein and crucial element of central nervous system (CNS), which plays a role in the myelination of

nerves. Dr. Astha also discussed the treatment strategies including steroid, plasma exchange, and relapse prevention. She also emphasised the role of regenerative medicine for the patients of NMO. The second speaker was Dr. Manoj Goyal, Department of Neurology, who talked about autoimmune encephalitis-related clinical manifestations and immunopathological hallmarks. Clinical diagnostic criteria includes subacute onset or rapid progression (<3 months) of short-term memory loss and/or altered mental status, focal CNS findings, seizures, cerebrospinal fluid pleocytosis, and abnormal EEG and MRI. He emphasized the role of VGKC and NMDA antibodies as a hallmark of autoimmune encephalitis. Mr. Navin from Euroimmune spoke regarding the diagnostic tests used in autoimmune neuropathological disorders and availability of biochips for anti-aquaporin, anti-NMDA, anti GABA etc. He also discussed the role anti-ganglioside profile for peripheral neuropathies. He also discussed the antibody profiles available with Euroimmune. Post-lunch session was a technical Session for the demonstration of bio-chip assays and neuroblots. In this session Mr. Navin illustrated the handling of bio-chips under the microscope and visualization of immunopathological hallmarks followed by interpretation of tests. Overall, the CME cum workshop was informative for the researchers and clinicians for enhancing their knowledge about better diagnostic innovations and differential diagnosis, respectively.