Neuromyelitis Optica

National Institute of Neurological Disorders and Stroke (NINDS)

Source

National Institute of Neurological Disorders and Stroke (NINDS). Neuromyelitis Optica Information Page.

Neuromyelitis optica (NMO) is an autoimmune disease of the central nervous system (CNS) that predominantly affects the optic nerves and spinal cord. It is sometimes also referred to as NMO spectrum disorder. In NMO, the body's immune system mistakenly attacks healthy cells and proteins in the body, most often those in the spinal cord and eyes. Individuals with NMO develop optic neuritis, which causes pain in the eye and vision loss. Individuals also develop transverse myelitis, which causes weakness or paralysis of arms and legs,and numbness, along with loss of bladder and bowel control. Magnetic resonance imaging of the spine often shows an abnormality that extends over long segments of the spinal cord. Individuals may also develop episodes of severe nausea and vomiting, with hiccups from involvement of a part of the brain that controls vomiting. The disease is caused by abnormal autoantibodies that bind to a protein called aquaporin-4. Binding of the aquaporin-4 antibody activates other components of the immune system, causing inflammation and damage to these cells. This also results in the brain and spinal cord the loss of myelin, the fatty substance that acts as insulation around nerve fibers and helps nerve signals move from cell to cell.

NMO is different from multiple sclerosis (MS). Attacks are usually more severe in NMO than in MS, and NMO is treated differently than MS. Most individuals with NMO experience clusters of attacks days to months or years apart, followed by partial recovery during periods of remission. Women are more often affected by NMO than men. African Americans are at greater risk of the disease than are Caucasians. The onset of NMO varies from childhood to adulthood, with two peaks, one in childhood and the other in adults in their 40s.