

In Children with Autoimmune Disease, Response Starts Early

Newswise - Children with neurological autoimmune diseases develop immune reactions to other targets in their bodies and in food early in their disease, according to research that will be presented at the American Academy of Neurology 58th Annual Meeting in San Diego, Calif., April 1 - 8, 2006.

T cells are the body's regulators of the immune response. Increased T cell proliferation is a characteristic of autoimmune disease, in which the immune system attacks body tissues.

"However, it wasn't known whether this increased proliferation occurred early, or as a result of chronic autoimmunity," said lead researcher Brenda Banwell, MD, from the Department of Pediatric Neurology at the Hospital for Sick Children in Ontario, Canada.

The researchers studied 166 children: 63 with an autoimmune demyelinating syndrome (either multiple sclerosis or an isolated event of central nervous system autoimmunity), 43 with type I diabetes (also an autoimmune disease), 31 with a non-autoimmune neurological condition, and 30 healthy controls. They examined blood samples for T cell proliferation in response to exposure to a variety of antigens (targets), including myelin protein from nerve cells, proteins in the pancreas, and proteins in milk.

As expected, more children with central nervous system autoimmunity had T cell proliferation after exposure to myelin than control children (50 percent versus 10 percent). About a quarter of these children also showed a response to proinsulin, a T-cell target in type I diabetes. Over sixty percent also responded to a protein in milk. Ninety percent of the children with type I diabetes responded to pancreatic antigens as expected, but almost as many (79 percent) responded to myelin, and 90 percent responded to milk protein.

"Even at the onset of their disease, children with autoimmune diseases harbor T cells that will react against proteins within their tissues," Banwell said. "The responses seen against milk proteins raise the possibility that substances in food may be associated with autoimmunity."

This study was supported by The Wadsworth Foundation.

The American Academy of Neurology, an association of more than 19,000 neurologists and neuroscience professionals, is dedicated to improving patient care through education and research. A neurologist is a doctor with specialized training in diagnosing, treating and managing disorders of the brain and nervous system such as Alzheimer disease, epilepsy, multiple sclerosis, Parkinson disease, and stroke.

For more information about the American Academy of Neurology, visit <http://www.aan.com>.

Editor's Note: Dr. Banwell will present this research during a scientific platform session at 1:30 Thursday, April 6 in room 6AB of the San Diego Convention Center.