Viral infection linked to juvenile diabetes

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Researchers from Italy have found a statistically significant association between enteroviral infection and diagnosis of type-1 diabetes in children. They report their findings today at the 110th General Meeting of the American Society for Microbiology in San Diego, California.

Type 1 diabetes, also called juvenile diabetes or insulin-dependent diabetes, is a disorder of the body's immune system. The patient's own immune system is somehow activated to slowly destroy insulin-producing beta cells in the pancreas until the patient's body cannot produce insulin anymore. People diagnosed with type-1 diabetes require lifelong insulin therapy. Approximately 13,000 young people are diagnosed in the United States each year.

Type 1 diabetes develops in individuals who are genetically susceptible. An exposure to some yet unknown triggering environmental factor or factors may be required.

"We studied the possible association of enterovirus infections with type-1 diabetes at time of diagnosis," says Antonio Toniolo of the University of Insubria and Ospedale di Circolo in Verese, Italy, a researcher on the study. "Literature suggests that infection by different enteroviruses may be linked to the early stages of diabetes."

Toniolo and his colleagues tested the blood of 112 children at the time of time of diagnosis for the existence of enteroviral DNA. All the children, ranging in age from 2-16 years, were patients at the Pediatric Endocrinology Units of Varese and Pisa. Low-level enteroviral

infectivity and genome fragments were detected in 83% of type-1 diabetes patients, compared to only 7% of healthy controls.

"These data do not provide a causal relationship between enterovirus infections and diabetes," warns Toniolo. "However, the high prevalence of enteroviral genome sequences in newly diagnosed type-1 diabetes cases indicate that different enterovirus types represent a significant biomarker of early stage juvenile diabetes."

If similar results could be obtained in patient populations in other geographic areas, early enterovirus detection could help lead researchers to identify other environmental factors that lead to type-1 diabetes development and maybe one day innovative methods for prevention or treatment, says Toniolo.

Provided by American Society for Microbiology