

Gene profile correlates with glycemia in type 1 diabetes

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(HealthDay) -- A gene expression profile in peripheral blood correlates with glycemic control in the first year for patients recently diagnosed with type 1 diabetes, according to a study published online March 8 in *Diabetes*.

Katharine M. Irvine, Ph.D., from the University of Queensland Diamantina Institute in Brisbane, Australia, and colleagues analyzed gene expression in peripheral blood monocytes in six healthy subjects and 16 children recently diagnosed (approximately three months earlier) with [type 1 diabetes](#). Clinical features were analyzed from diagnosis to one year.

The researchers found that monocyte expression profiles from the

[diabetes patients](#) clustered into two distinct groups that deviated either mildly or severely from healthy subjects. Compared with patients whose deviation was mild, patients whose deviation was severe had significantly higher hemoglobin A1c levels during the first year (adjusted for insulin dose). In the diabetes-associated expression signature, multiple perturbations were identified in pathways associated with [cellular metabolism](#) and survival. An expression signature composed of nine genes correlated with glycemic control in an independent group of 12 recent-onset patients and was also present in healthy first-degree relatives.

"A peripheral blood gene expression signature correlates with glycemic control in the first year after diabetes diagnosis and is present in at-risk subjects," Irvine and colleagues conclude. "These findings implicate monocyte phenotype as a candidate biomarker for disease progression pre- and post-onset and systemic stresses as contributors to innate immune function in type 1 diabetes."

More information: [Abstract](#)

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