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MicroRNA markers characteristic of 'Asian Indian phenotype' in patients with type 2 diabetes

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Researchers have shown the biomarker role of certain circulatory microRNAs (miRNAs) characteristic of "Asian Indian phenotype' in patients with type 2 diabetes – a metabolic disease referred to as 'madhumeha' in Ayurveda. This study has been published in *PLoS One*.

Several omics technologies are underway worldwide to investigate and identify biomarkers to be used in prevention, diagnosis as well as treatment aspects of diabetes. Of late, miRNAs are considered to have tremendous potential as non-invasive biomarkers for the prevention, diagnosis and prognosis of disease, monitoring of treatment, and patient stratification. This is because circulatory miRNAs in humans have been shown to be stable, reproducible, consistent amongst healthy individuals and change during pathophysiology, allowing them to be of potential value as biomarkers of disease with clinical utility.

"Although further research and prospective studies are needed, among the altered circulating miRNAs, miR-128 had never been described in previous studies/populations and appeared to be a "New Lead' in Indians", says lead authors Muthuswamy Balasubramanyam & Viswanathan Mohan. "Considering the fact that miR-128 has been earlier reported as a biomarker of cognitive impairment and there exists a neurological component in the etiology of type 2 diabetes, it appears that miR-128 could be the connecting link for the cognitive dysfunction and/or depression associated with metabolic diseases" says

Balasubramanyam.

"As the technologies related to miRNA measurement are evolving and get universally standardized, it is expected that specific miRNA profile either singly or as a panel would qualify as potential tool for personalized medicine or precision medicine", adds Balasubramanyam.

More information: "Circulating MiRNAs of 'Asian Indian Phenotype' Identified in Subjects with Impaired Glucose Tolerance and Patients with Type 2 Diabetes." *PLoS One*. 2015 May 28;10(5):e0128372. DOI: 10.1371/journal.pone.0128372

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