MicroRNAs 342 and 450 together with NOX□4 activity and their association with coronary artery disease in diabetes

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Abstract

Background
Dysregulation of miRNAs has been associated with many clinical conditions, including coronary artery disease (CAD). MiRNAs roles in patients with type 2 diabetes mellitus (T2D) with or without CAD, however, have not been clearly understood. Therefore we studied the expression of miRNAs 342 and 450 and the activity of the NADPH oxidase 4 (NOX□4), and their association with anthropometric and biochemical parameters of hyperglycaemia and dyslipidaemia.

Subjects and Methods
Blood was collected from 200 outpatient subjects, divided into four groups of 50 individuals including control, T2D, CAD, and T2D with CAD. CAD was further divided based on CAD with angina, CAD clots, and CAD ischaemia to differentiate the primary cause of CAD. We measured the miRNAs 342 and 450 expression and NOX□4 activity, in addition to routine parameters.

Results
The expression of miRNAs 342 and 450 and NOX□4 activity was significantly different between groups. Furthermore, they presented significant correlations with routine parameters, providing evidence of a potentially beneficial role in stratifying the risk for CAD in patients with T2D.

Conclusion
The results of this study suggest that the expression of miRNAs 342 and 450 and NOX□4 activity may help identify those individuals with T2D at high risk for developing CAD as well as the prognosis in those with established CAD.

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