POSTER PRESENTATIONS

DIABETES

PP-D-01

METABOLIC AND CIRCULATING microRNA PROFILING DURING MATERNAL DIABETES AND DIFFERENCES BY DIABETES TYPE

https://doi.org/10.15605/jafes.037.AFES.41

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OBJECTIVES

In pregnancies complicated by maternal diabetes, metabolic and epigenetic effects such as dysregulated microRNA (miRNA) expression, may influence pregnancy outcomes. This study aimed to assess the effect of maternal diabetes type on metabolic and circulating miRNA expression.

METHODOLOGY

C-peptide, total and high molecular weight (HMW) adiponectin, C-reactive protein (CRP) and triglyceride concentrations were quantified in serum (16 to 27 weeks gestation) from women with pregestational type 1 diabetes (T1D, n = 7), type 2 diabetes (T2D, n = 14), new T2D (n = 12), gestational diabetes mellitus (GDM, n = 17) and normoglycaemia (n = 24) using enzyme-linked immunosorbent assays (ELISA). MiRNAs were profiled in a subset of samples using the human serum/plasma miScript miRNA PCR array (n = 4 per group).

RESULTS

Lower C-peptide total and HMW adiponectin levels with higher CRP levels were observed in women with T2D and GDM compared to women with T1D and normoglycaemia. The expression of miR-19b-3p was lower in women with GDM (9.8-fold, p=0.033); miR-20a-5p was lower in women with T1D (4.5-fold, p=0.047) and miR-29a-3p was higher in women with T2D (1.8-fold, p=0.002). Several other miRNAs were differentially expressed between the diabetes groups but were not statistically significant. Bioinformatic analysis identified messenger RNA targets common and unique to the differentially expressed miRNAs.

CONCLUSION

Metabolic parameters and miRNA levels differed according to the type of maternal diabetes. MiRNA expression differences between T1D, T2D and GDM could be related to intrauterine hyperglycemia and epigenetic programming. These findings may be interesting areas for further studies.

PP-D-02

DIABETIC ENCEPHALOPATHY: A HISTOPATHOLOGICAL UPDATE

https://doi.org/10.15605/jafes.037.AFES.42

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OBJECTIVES

We aimed to examine small vessels in the brain for histological changes in patients with type 2 diabetes mellitus and diabetic encephalopathy.

METHODOLOGY

We studied the histopathological changes in the brain in 17 autopsy cases. The microscope slides were stained with Hematoxylin and Eosin, Nissl and Bielschowsky methods and PAS-reaction.

RESULTS

The high density of the capillary network, especially in the cortex of the frontal and temporal areas, together with segmental spasm and an expansion of the perivascular space of Robben-Virchow were observed. The early changes in the capillary wall were determined not only by the thickening of the basement membrane with the accumulation of PAS-positive substances but also by its cleavage with the proliferation of endothelial cells. Late manifestations of vessel changes include capillary fibrosis, characterized by the presence of argentophilic reticulin and collagen fibers and proliferation of pericytes in the capillary wall. Thin-walled microaneurysms, early morphological manifestations of diabetic encephalopathy, were also seen. Segmental fibrinoid necrosis with the formation of miliary dissecting aneurysms and parietal and obstructive thrombi were seen in areas of ischemic necrosis of brain tissue in the cortical cerebral arteries. Neurodystrophic changes