Expression of thyroid hormone transporters in trophoblast cells from pregnancies with Gestational Diabetes Mellitus

Expresión de transportadores de hormona tiroidea en células de trofoblasto de embarazos con Diabetes Mellitus Gestacional

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Introduction: Gestational diabetes mellitus (GDM) is characterized by abnormal glucose metabolism and associated with a reduction in circulating thyroid hormone (HT). The placenta, mainly the trophoblast cells, is involved in the regulation of HT transport from mother to fetus. The normal placenta expresses thyroid hormone transporters (THT), which include MCT8, MCT10, LAT1, LAT2, OATP4A1, and OATP1A2. There are no publications on the behavior of THT in trophoblastic cells of patients GDM.

Objectives: To determinate the expression of THT in primary human trophoblast from pregnancies with GDM.

Methodology: Placentas were obtained from Guillermo Grant Benavente Hospital, Concepción, Chile. Cells were cultured 90 hours at 37°C, in DMEM / F12 medium, 10% FBS, 1% penicillin/streptomycin, 5% CO2 and used for immunofluorescence and Q-RT-PCR to determine the expression of the 6 THTs described.

Results: No differences were found in expression of THTs determined by mRNA. However, immunofluorescent analysis showed that expression of MCT8 and OATP-E is decreased in trophoblast cells from pregnancies with GDM. Furthermore, there was an absence of LAT transporters in both study groups.

Conclusions: There are changes in THT expression in trophoblast cells with GDM. Furthermore, LAT transporters are not expressed in primary human trophoblast.

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