Global DNA methylation and homocysteine levels are lower in type 1 diabetes patients La metilación global del ADN y los niveles de homocisteína en plasma se encuentran disminuidos en pacientes con diabetes mellitus tipo 1

Arroyo-Jousse, Viviana

García-Díaz, Diego F.

Pérez-Bravo, Francisco

 Background: The worldwide rise in the incidence of Type 1 Diabetes (T1D), and the concordance rate between monozygotic twins (50%), indicate a strong effect of the environment as an underlying factor of this disease. This process can occur throughout epigenetic modifications of gene expression such as DNA methylation, in which several nutrients participate as cofactors. Aim: To determine DNA methylation status in T1D patients and if it is related to plasma levels of folates and homocysteine (Hcy). Material and Methods: We obtained blood samples from 25 T1D patients aged 13.7 ± 5.9 years (11 males) and 25 healthy subjects aged 31.1 ± 7.8 years (16 males). DNA methylation was measured using a colorimetric kit in extracted DNA. Results are expressed as median (interquartile range). Results: Compared with healthy controls, T1D patients had lower global DNA methylation (0.85 (0.91) % and 1.25 (1.16) % respectively, $p < 0.02$) and Hcy l