RESIDUAL C-PEPTIDE IN PAEDIATRIC PATIENTS WITH TIPE 1 DIABETES

Maria Martín-Frias, Yoko Oyakawa, Milagros Alonso, M. Belén Roldán, MA Alvarez, Raquel Barrio
Pediatric Diabetes Unit. Ramón y Cajal Hospital. Alcalá University. Madrid. Spain

INTRODUCTION
Preservation of C-peptide is important and has become regarded a relevant endpoint as already a quite small residual C-peptide seems to be related to both less acute and late diabetes complications.

OBJECTIVE
To assess the residual C-peptide secretion in DM1 pediatric patients with different diabetes duration.

PATIENTE AND METHODS
Cross-sectional study of 157 patients with T1D. We analyzed: age at diagnosis and age at the time of the study (years), sex, diabetes duration (years, more than 1 year of T1D), metabolic control (HbA1c, HPLC-Menarini) and fasting C-peptide levels (chemiluminescent microparticle immunoasssay, ARCHITECT CI8200, minimum detectable levels 0.01 ng/ml).

Statistical analysis was performed with SPSS program, version 17.0. Data are reported in percentage, mean and standard deviation. C-peptide levels in median and range (percentile 25-75). Comparative testing were performed with no parameter tests. Level of statistical significance p <0.05.

RESULTS
Minimum and maximum diabetes evolution was 1-16.7 years in undetectable C-peptide subgroup and 1-11.8 years in detectable C-peptide subgroup. 58% of patients had undetectable C-peptide levels, in this subgroup the duration of DM was significantly longer, with younger, but not significantly, age at diagnosis (table 1). Only 3/24 patients with >10 years of diabetes evolution had detectable C-peptide levels (10.0-11.7 years evolution, C-peptide levels 0.01-0.09 ng/ml); 5/27 patients with <2 years of diabetes evolution had undetectable C-peptide levels (mean 1.1 years evolution, mean age diagnosis 5.1 years (0.6-10.9). HbA1c was lower in detectable C-peptide subgroup but not significantly. C-peptide levels were negatively correlated with diabetes evolution and HbA1c levels.

CONCLUSION
The natural course of T1D in paediatric age is heterogeneous
Earlier age at diagnosis leads to a faster loss of pancreatic reserve