

C PEPTIDE VARIATION AFTER THE DIAGNOSIS OF TYPE 1 DIABETES IN **PEDIATRIC AGE**



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Background:

C-peptide secretion is the most accurate measure of residual β-cell function in type 1 diabetes (T1D) and even residual levels seem to positively correlate with a lower probability of complications.

Aim and Objectives:

To Identify key determinants of β cell function decline, measured by fasting Cpeptide (FCP).

Methods:

- Prospective study. Evaluation of the FCP of patients diagnosed with T1D, at diagnosis and after 12 months of follow-up.
- The FCP evolution was correlated with age at diagnosis (group 1: ≤5 years; group 2: 6-10 years and group 3: ≥11 years), autoimmunity, hemoglobin A1c (HbA1c) and presence of ketoacidosis at diagnosis.
- SPSS 22® was used for data analysis. A p-value <0.05 was considered statistically significant.

Table 1. Patients characteristics at diagnosis		
Total patients (n)	20	
Sex (전/우)	10/10	
Age Median Minimum/maximum Symptom's duration (mean)	8 years 11 months/16 years 24 days	
Ketoacidosis (n)	5	
Autoimmunity (n) GAD ₆₅ IAA ICAs	9 5 4	

Table 2. Patients characteristics by age of onset at diagnosis				
	Total	≤5 years	6-10 years	≥ 11 years
N	20	6	10	4
Insulin TDD (UI/kg/d) (SD)	0,53 (0.25)	0.52 (0.10)	0.46 (0.30)	0.7 (0.18)
HbA1c (%) (SD)	9.4 (2.28)	8.4 (1.12)	9.5 (2.50)	10.7 (2.90)
FPC (ng/dL) (SD)	0.53 (0.32)	0.50 (0.27)	0.46 (0.31)	0.75 (0.37)

	Table 3. FPC variation	on after 12 months o	of follow-up	
Age group (years)	FPC at diagnosis (ng/dL) (SD)	FPC after 12 M (ng/dL) (SD)	Δ FPC 12 M	P**
≤ 5 (group 1)	0.50 (0.27)	0.19 (0.33)	- 0.31	0.030 *
6-10 (group 2)	0.46 (0.31)	0.41 (0.32)	-0.05	
≥ 11 (group 3)	0.75 (0.37)	1.24 (0.45)	+ 0.49	
Total	0.53 (0.32)	0.51 (0.51)	-0.02	**ANOVA I

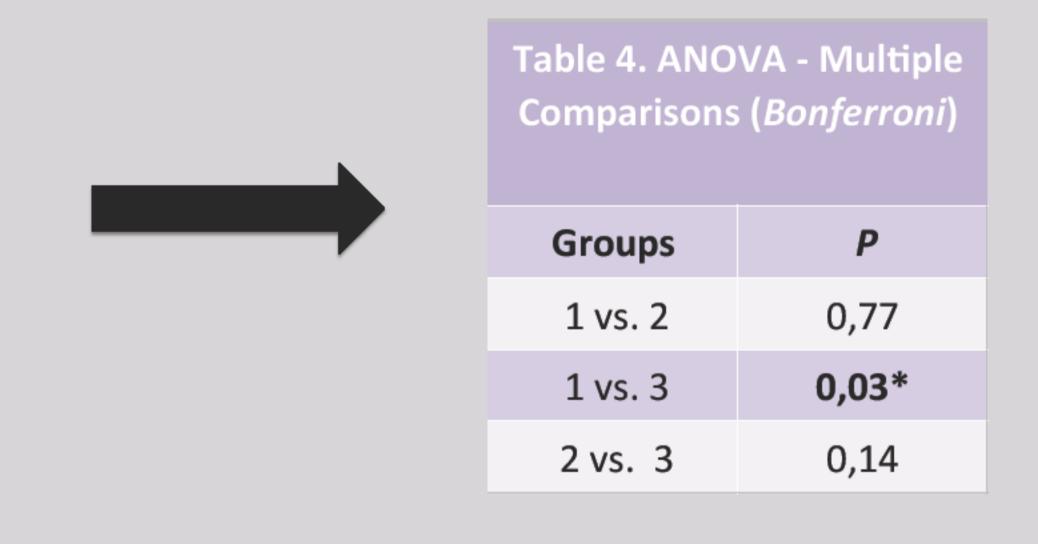


Table 5. I	HbA1c by age	of onset at diagr	osis and after 12	months of
	≤ 5 years	6-10 years	≥ 11 years	Total
Diagnosis	8.4 (1.12)	9.5 (2.50)	10.7 (2.90)	9.4 (2.28)
12 months	7.4 (0.57)	7.2 (0.85)	6.7 (1.33)	7.2 (0.87)

Table 8. Analysis of the association between base	eline characteristics and
FCP variation (Mann-Whitney te	st)
	P
Sex	0.631
Ketoacidosis	0.168
Positive antibody (at least one antibody)	0.179

•	g FCP variation in patien HbA1c >7.5% (Mann-Whitne	
HbA1c (%)	FPC variation	P
≤ 7.5 %	0.21	0,035 *
> 7.5 %	-0.25	

	≤7.5 and HbA1c >7.5%	(
HbA1c (%)	TDD/kg	P
≤ 7.5 %	0.51	0,035*
> 7.5 %	0.82	

Discussion:

- In our study the FCP level variation was positively correlated with age. The group of patients with ≤5 years had a more pronounced loss of pancreatic reserve, translated by the declining value of C Peptide.
- Although implicated as a major factor in β-cell decline in other studies, we found no association between the FCP variation and autoimmunity.
- Our results are limited by the small number of participants. We are proceeding the study with a larger follow-up and more patients enrolled.

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Diabetes and Insulin

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