SUBCUTANEOUS CONTINUOUS INSULIN INFUSION IN TYPE 1 DIABETIC PATIENTS. GLYCEMIC CONTROL AFTER 5 YEARS OF FOLLOW-UP

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Introduction

Subcutaneous continuous insulin infusion (CSII) therapy has been associated with an improvement in the HbA1c, lowering glycemic variability and hypoglycemic events. This improvement is achieved approximately after 1 year of treatment.

The aim of our study is to measure if the improvement of the metabolic control remains after 5 years of treatment.

Materials and Methods

Observational prospective study conducted on a group of 28 type 1 diabetic patients (14 men), with an average age of 42,6±9,4 years, treated with CSII, and with 5 years of follow up.

We compared the change in metabolic control, glycemic variability (defined by standard deviation), hypoglycemic events and insulin dose at baseline, 1 and 5 years after initiation of treatment.

Data analysis was carried out using the statistical program SPSS 22.0. Descriptive statistic was expressed as mean ± SD. A p value <0.05 defined the level of statistical significance.

Results

	Baseline	1 year	Sig*	5 years	Sig**
HbA1c (%)	8,7±1,7	7,9±1,1	p=0,05	7,8±0,9	ns
Mean Glucose (mg/dl)	175,9±44,3	169,6±39,6	ns	171,3±36,6	ns
Standard Deviation (mg/dl)	97,4±40,5	75,1±19,9	p=0,032	79,1±22,6	ns
Hypoglycemic events 1 month (%)	13,8±8,9	11,4±6,2	ns	9,1±6,2	ns
Severe hypoglycemia 1 year (n)	28	6	ns	2	ns
Total insulin dose (IU)	49,7±21,6	40,8±18,1	p=0,015	43,7±17,9	ns

* Baseline – 1 year
** 1 year – 5 years

Conclusions

After 1 year of follow up we observed that CSII therapy has provided a significant improvement in metabolic control, glycemic variability and decrease insulin dose. Hypoglycemia events have been reduced during the first year of treatment. In addition, the CSII system provides a greater benefit to those individuals who at the beginning of therapy had severe and recurrent hypoglycemia events.

The improvements obtained with CSII during first year remain without significant changes after 5 years of follow-up.