

Metabolic differences between CSII and MDI in Type 1 Diabetes Mexican Patients from the Multi-Centric Study RENACED



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INTRODUCTION

There is limited information regarding differences in metabolic control in patients with Type 1 Diabetes (T1D) treated with CSII or MDI regime in Mexico. We developed an online system, RENACED, to have a longitudinal registry of real life data of T1D patients.

METHODS

Multi-centric study where a bivariate analysis (alpha=0.05) was performed in 464 T1D patients, that use CSII or MDI, registered in RENACED system up to 2/22/2017.

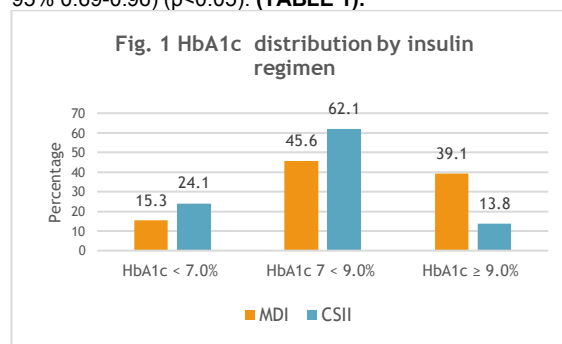
RESULTS

Of the 464 patients, 135 are on CSII (29%) and 329 on MDI (71%). Patients on CSII had lower HbA1c levels (7.9%; CI 95% 7.6–8.1) than those on MDI (8.8%; CI 95% 8.6–9.1) (p<0.05). The total insulin daily dose was lower on CSII

TABLE 1: Bivariate analysis of T1D patients on CSII vs MDI therapy

	MDI (CI 95%)	CSII (CI 95%)	P
HbA1c (%)*	8.8 (8.6-9.1)	7.9 (7.6-8.1)	< 0.01
Mean daily insulin dose (kg/day)	0.82 (0.69-0.96)	0.58 (0.52-0.64)	< 0.01
Age (years)*	24.7 (23.4-26.1)	27.4 (25.1-29.8)	0.04
Age at diagnosis (years)	12.4 (11.6 - 13.2)	13.3 (11.6 - 15.1)	0.34
Lispro Insulin (%)*	82.4 (78.2 - 86.5)	35.6 (27.4 - 43.7)	< 0.01
Aspart Insulin (%)*	10.6 (7.3 - 14.0)	60.0 (51.6 - 68.4)	< 0.01

(0.58 IU/kg; CI 95% 0.52-0.64), than on MDI (0.82 IU/kg; CI 95% 0.69-0.96) (p<0.05). (TABLE 1).



CSII was associated with higher SMBG per day (p<0.01). Almost no patients on MDI used CGM. Patients on CSII that used CGM had lower HbA1c levels (7.7%; CI95% 7.4-8.0) than those that did not used CGM (8.0%; CI95% 7.7-8.4) (p=0.22).

TABLE 2: Life style characteristics

	MDI (CI 95%)	CSII (CI 95%)	P
SMBG per day (times per day)	3.2(3.0-3.4)	4.2 (3.7-4.6)	< 0.01
Exercise (%)	38.9 (33.5-44.3)	76.2 (68.6-83.9)	<0.01
Carbohydrate count (%)	62.6 (57.3-68.9)	93.2(88.9-97.6)	>0.01

A significantly higher event rate of mild/moderate hypoglycemia/week was observed in the CSII group 4.2 (3.0-5.3) vs the MDI group 2.5 (2.3 - 2.7) (p<0.01).

TABLE 3: Acute and Chronic Complications

	MDI (CI 95%)	CSII (CI 95%)	P
Mild/Moderate hypoglycemia per week (events)*	2.5 (2.3-2.7)	4.2(3.0-5.3)	<0.01
Mild/Moderate hypoglycemia (%)	72.1 (64.9 - 79.2)	73.3 (59.9 - 86.8)	0.868
Severe Hypoglycemia (%)	21.7 (14.8 - 28.7)	15.6 (4.5 - 26.6)	0.37
Chronic Complications (%)	13.4 (9.7 - 17.1)	7.4 (2.9 - 11.9)	0.069

An interesting finding is that those patients on CSII exercise more.

CONCLUSIONS

According to the literature, CSII use and a higher number of SMBG/day are associated with better glycemic control.

It is interesting that those on CSII exercise more, a finding that will need to be confirmed with higher number of patients in the registry.