



PATIENTS' EDUCATION FOR USING RT-CGM DATA IN SAP THERAPY MANAGEMENT

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Introduction and Aim

SAP's outcome depends on patients being educated about the correct technical usage and proper therapy management when using RT-CGM data. Recommendations are lacking.

We analysed the effect on glycaemic control and variability of a specific training programme (individual and collective).

Study design and Materials/Methods

This is a retrospective study of patients who have used the SAP 640G for at least a year having completed their path education at least 6 months ago. Patients attended to a specific structured SAP education course (individual and collective) focalized on correct use, interpretation of CGM data and variation of therapy.

Considering 0 the date of the collective course, patients were evaluated with the following timings:



Twenty-one patients involved in SAP course were treated at ASST Spedali Civili – Brescia, Italy. Demographic and other baseline characteristics are summarized in the following table:

Characteristics	TOTAL (n=21)
Age (yrs)	42.2 ± 11.3
Gender (male)	52,5% (11/ 21)
Middle School	14.3% (3/ 21)
Education High School	57.1% (12/ 21)
Education Degree	28.6% (6/ 21)
Race Caucasian	100.0% (21/ 21)
Duration of Diabetes (yrs)	19.0 ± 9.4
Time from Diagnosis to CSII (yrs)	11.5 ± 10.3
Indication for CSII: Poor Control	71.4% (15/ 21)
Indication for CSI: Severe Hypoglycemia / Loss of Sensitivity	28.6% (6/ 21)
Time from Starting 640g to the course (mths)	5.8 ± 4.3
Starting directly with SAP	33.3% (7/ 21)
% using advanced pump functions	100.0% (21/ 21)
N° of glucose determinations	4.7 ± 1.2
Hypoglycemia perception threshold (mg/dl)	65.5 ± 11.6
HbA1c Time -1 (%)	7.6 ± 0.6

We evaluated: Mean of Sensor Glucose (SG); Coefficient of Variation (CV); Conga-1; Conga-2; Conga-4; J-index; M-value and Liability Index. All statistical tests were two sided, and deemed to be statistically significant if $p < 0.05$. All the analyses were programmed using SAS version 9.3 (SAS Inst. Inc., Cary, NC).

Results

Sensor glucose Variability Index

INDEX	-60 +120	-30-0	0-30	30-60	60-90
SENSOR GLUCOSE	0,014	0,13	0,806	0,43	0,24
SENSOR GLUCOSE	0,214	0,817	0,873	0,563	0,041
CONGA 1	0,173	0,914	0,928	0,657	0,043
CONGA 2-	0,091	0,823	0,741	0,778	0,101
CONGA 4	0,035	0,58	0,931	0,664	0,077
JINDEX	0,08	0,223	0,675	0,318	0,136
MVALUE	0,016	0,626	0,714	0,219	0,217
LABILITY INDEX	1,17	0,991	0,956	0,633	0,031

Time to target

No statistically significant trend has been detected either in the entire follow up or in the other sub-intervals (≤ 70 , $70-180$, > 180).

Number of SGT Suspensions

Follow up (-60-120), the Means number of SGT Suspensions has a significant increasing trend among the time (p 0,035). No statistically significant trend has been detected in the sub-intervals.

HbA1c values comparison

The difference in the HbA1c median values measured one month before and three months after the course was **not statistically significant**.

Table 6 - Comparison of HbA1c before and 3 months after the course

Indexes Comparison Time -1 vs Time +2				
Variable	Summary statistics	Time -1	Time +2	p-value
HbA1c	Mean ± SD	7.6 ± 0.6	7.3 ± 0.6	0.085
	Median (IQR)	7.5 (7- 8)	7.2 (7- 8)	
	Min-Max	7 - 9	6 - 9	

Conclusions

The improvement of over time and the trend toward improvement in the HbA1c value, in our view, suggest how a structured educational intervention is important to acquire information and then apply it over time.

The significant lack for subintervals of time may be due to the fact that the process of acquiring information and putting it into practice is slow and continuous over time and it depends on the basic preparedness of patients.

It is necessary to adequately prepare and direct patients with specific instructions on how to use RT CGM data.