GLYCEMIC CONTROL AND SATISFACTION WITH ANALYSES USING AN INSULIN PEN WITH MEMORY AND DOWNLOADING FUNCTION

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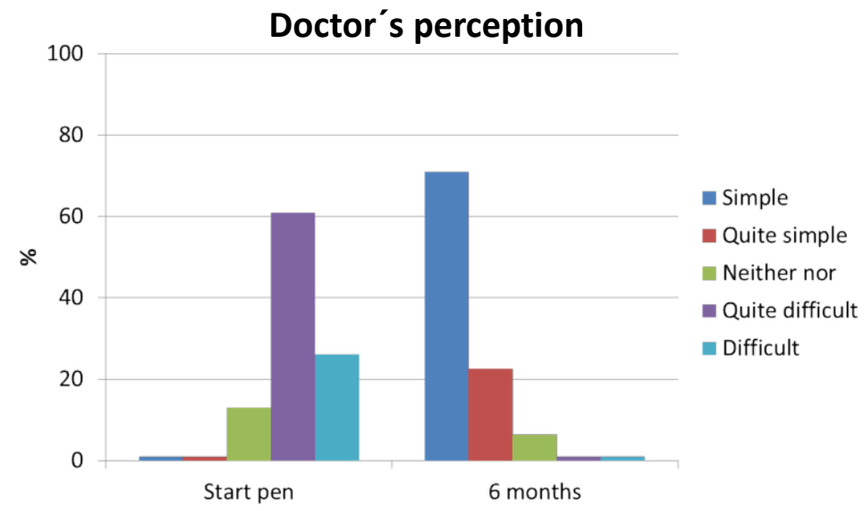
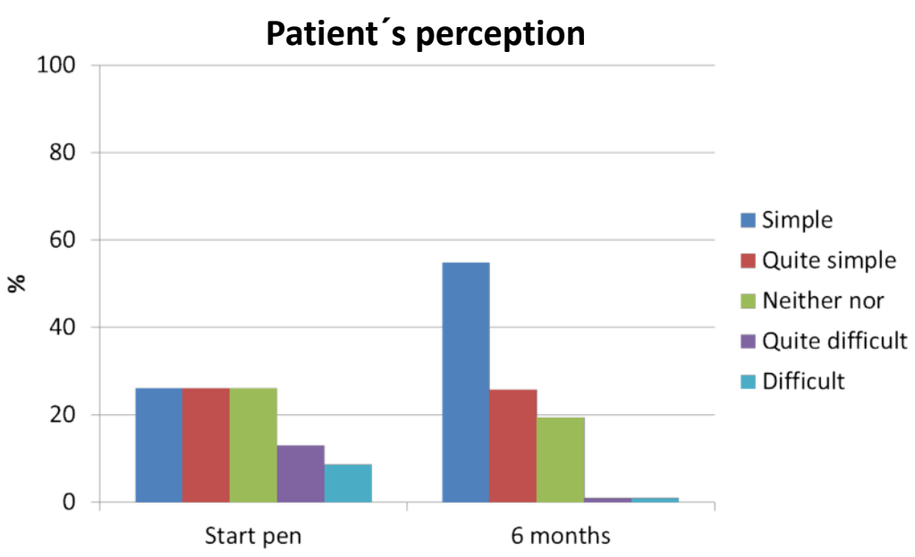
Conclusions

- The use of an insulin pen with ability to download data improved both patient´s and doctor´s satisfaction with the analyses.
- For girls HbA1c was decreased, however on group level it did not improve glycemic control.
- All children wanted to continue with the pen at the end of the study.

Objective

To evaluate glycemic control and satisfaction with the analyses at consultation using NovoPen 5 Plus, an insulin pen with memory and downloading function.





Method

Subjects: 31 patients, age 9-18, at the pediatric clinic, Halland Hospital, Sweden, July 2017- September 2018.

At startup and 6 months follow-up registration of:

- HbA1c, average glucose value, glucose variability, time in range (72-180 mg/dl), and hypoglycemia frequency over the last 14 days.
- Questionnaires

Patients and doctors were asked to evaluate their satisfaction with the analyses of downloaded data at their visit, in a questionnaire including 5-Likert scale questions.

Glycemic control before and after 6 months of NovoPen 5 Plus use

	All patients n=31			Boys n=16			Girls n=15		
	0 months	6 months		0 months	6 months		0 months	6 months	
	Median (range)	Median (range)	p-value	Median (range)	Median (range)	p-value	Median (range)	Median (range)	p-value
HbA1c (mmol/mol)	56 (43-76)	51 (42-67)	0.120	53 (43-62)	51 (42-67)	0.932	59 (45-76)	51 (45-66)	0.047
Average glucose value last 2 wks (mg/dl)	9,4 (5.7-16.2)	8,7 (6.5-11.6)	0.279	9,4 (5.7-16.2)	9,0 (6.5-11.3)	0.807	9,4 (7.0-11.6)	8,6 (7.0-11.6)	0.102
Glucose variability last 2 wks (SD)	4,2 (2.3-6.1)	3,9 (2,0-6,3)	0.715	4,1 (3.2-5.8)	3,9 (2.0-6.0)	0.394	4,2 (2.3-6.1)	3,9 (2.5-6.3)	0.487
Time in range[1] (% of time)	49 (17-81)	51 (28-79)	0.033	49 (17-66)	49 (45-66)	0.100	48 (35-81)	56 (28-79)	0.208
Hypoglycemia[2] (% of time)	6,5 (0-40)	9 (1-28)	0.550	8 (0-40)	8 (1-27)	0.609	5 (0-25)	11 (2-28)	0.139

[1]Time In Range (% of time), defined as glucose values 4-10 mmol/l (72-180 mg/dl) last 2 weeks

[2]Time in hypoglycemia (% of time), defined as glucose values below 4 mmol/l (72 mg/dl) last 2 weeks

Results

Patient´s satisfaction with the analyses improved statistically significant between visit 1 and 2 (p=0.005), and so did the doctor´s (p<0,001). HbA1c in girls exceeded HbA1c in boys at startup, but improved significantly between visit 1 and 2 (p=0.047). There was no statistically significant decrease in HbA1c amongst boys or the whole group. The entire group (n=31) showed a statistically significant improvement in time in range between visit 1 and 2(p=0,033). All children wanted to continue with the new pen at the end of the study.

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