

THE CONTRIBUTION OF THE FREESTYLE LIBRE® SYSTEM IN THE MANAGEMENT OF DIABETIC PATIENTS:



EXPERIENCE AT LIÈGE UNIVERSITY HOSPITAL



M.M. Gernay¹, J.C. Philips², R.P. Radermecker³, N. Paquot⁴.

¹CHU Liege/ Liege University, Diabetes - Nutrition and Metabolic disorders, Liege, Belgium. MD

²CHU Liege/ Liege University, Diabetes - Nutrition and Metabolic disorders, Liege, Belgium. MD PhD

³CHU Liege/ Liege University, Diabetes - Nutrition and Metabolic disorders/ Clinical Pharmacology, Liege, Belgium. . MD PhD

⁴CHU Liege/ Liege University, Diabetes - Nutrition and Metabolic disorders- Head, Liege, Belgium. . MD PhD

1. Introduction:

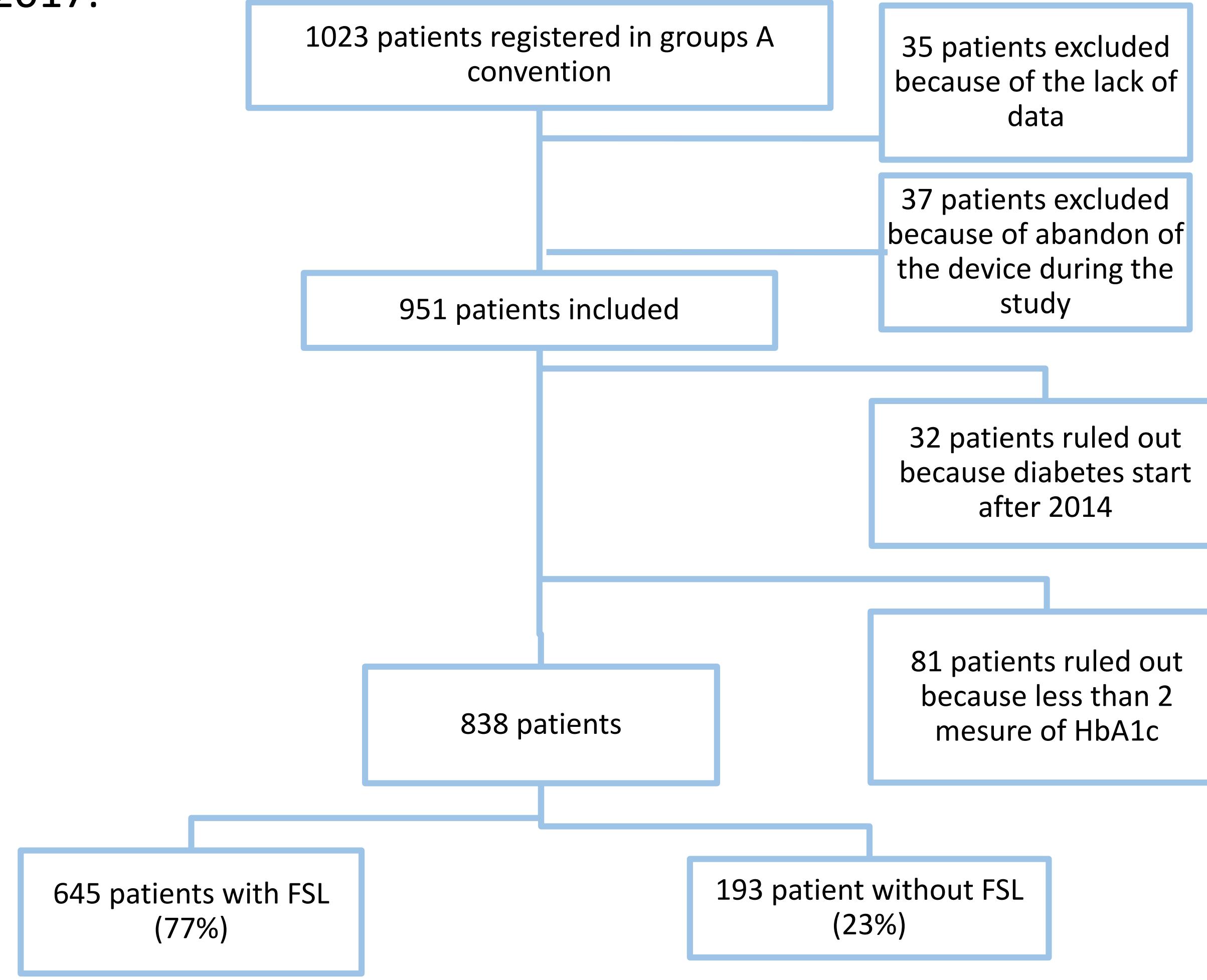
Diabetic patients included glycemic self-monitoring convention in Belgium can benefit from a device measuring subcutaneous glucose concentration (GC) : FreeStyle Libre® (FSL) / Abbott . The main advantage of this technology is that it is less invasive (blood sampling not required). It also allows patients to obtain, in addition to the instantaneous value of GC, retrospective kinetic data, but also prospective trend of its kinetics. In this study, we evaluated the contribution of FSL on the equilibration of diabetes, on the time spent in hypoglycemia and on weight. We also asked patient's satisfaction with this system. Data from 838 diabetic patients (type 1 or total insulin deficiency) were collected between May 2016 and October 2017, 645 patients with FSL system and 193 preferring to continue capillary blood samples (SMBG). In the FSL group, compared to the SMBG group, there was a slight decrease in HbA1c estimated at $0.15 \pm 0.073\%$ after 15 months. This decrease appears mainly when the starting level is high (HbA1c > 7.5%). The body mass index (BMI) increases slightly in patients with the device but remains stable in subjects without FSL. Patients perform an average of 8.8 checks: the more patients perform daily scans, the greater the number of data included in the target, that is, the better the glycemic balance. A higher number of scans is also associated with a decrease in the average duration of hypoglycemia. Finally, the satisfaction survey shows a fairly high degree of patient satisfaction with the use of FSL.

2. Goals of the study:

- Contribution of FSL on the overall equilibration of diabetes.
- Contribution of FSL on the number of hypoglycemas.
- Contribution of FSL on body mass index (BMI).
- We also asked patients how satisfied they were with this system.

3. Subjects and methods:

Observational, retrospective study between July 2016 and October 2017.



Age	50 ± 14 ans
Gender	Female : 384 (46%) Male : 454 (54%)
Type of diabetes	Type 1 : 775 Type 2 : 63
Duration of diabetes	26 ± 12 years
IMC (all values during the study period)	$26 \pm 3,48 \text{ kg/m}^2$

4. Result (1) :

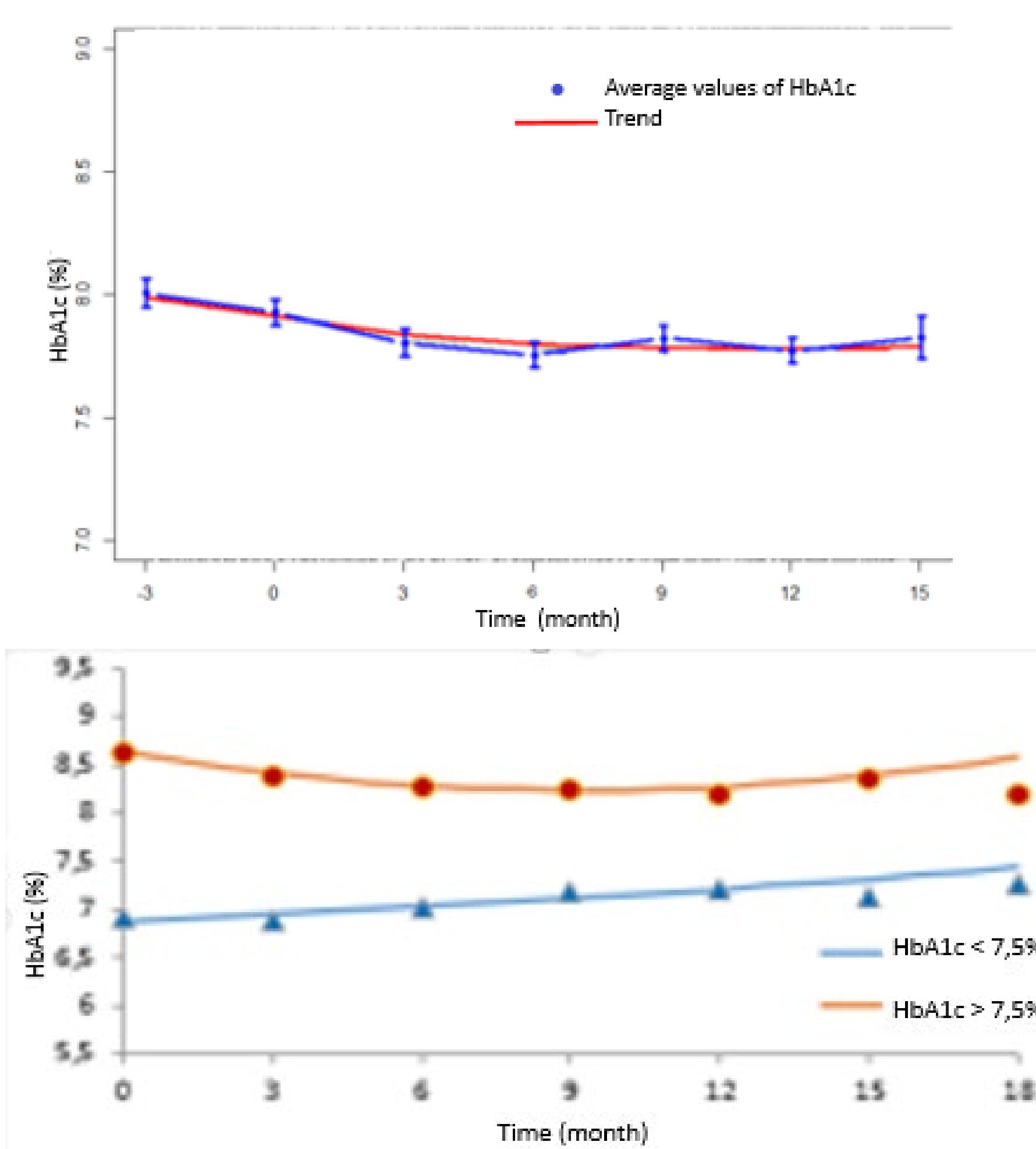
	Minimum	Maximum	Average
Registration period (day)	6	92	$64,6 \pm 30,6$
Number of scan/day	1	43	$8,8 \pm 4,8$
Percentage of data	10	100	$85,2 \pm 18$
HbA _{1c} (%)	4,9	12,2	$7,8 \pm 1,17$
Number of hypoglycemia	0	5,3	$0,95 \pm 0,94$
Average duration of hypoglycemia (min)	0	273	$116,1 \pm 4,23$

5. Conclusion :

In the FSL group, compared to the SBG group, there was a slight decrease in HbA1c values which appears mainly when the starting level is high. Patients perform an average of 8.8 checks per day and a higher number of scans is associated with a decrease in the average duration of hypoglycemas. Finally, the satisfaction survey shows a high degree of patient satisfaction with the use of FSL.

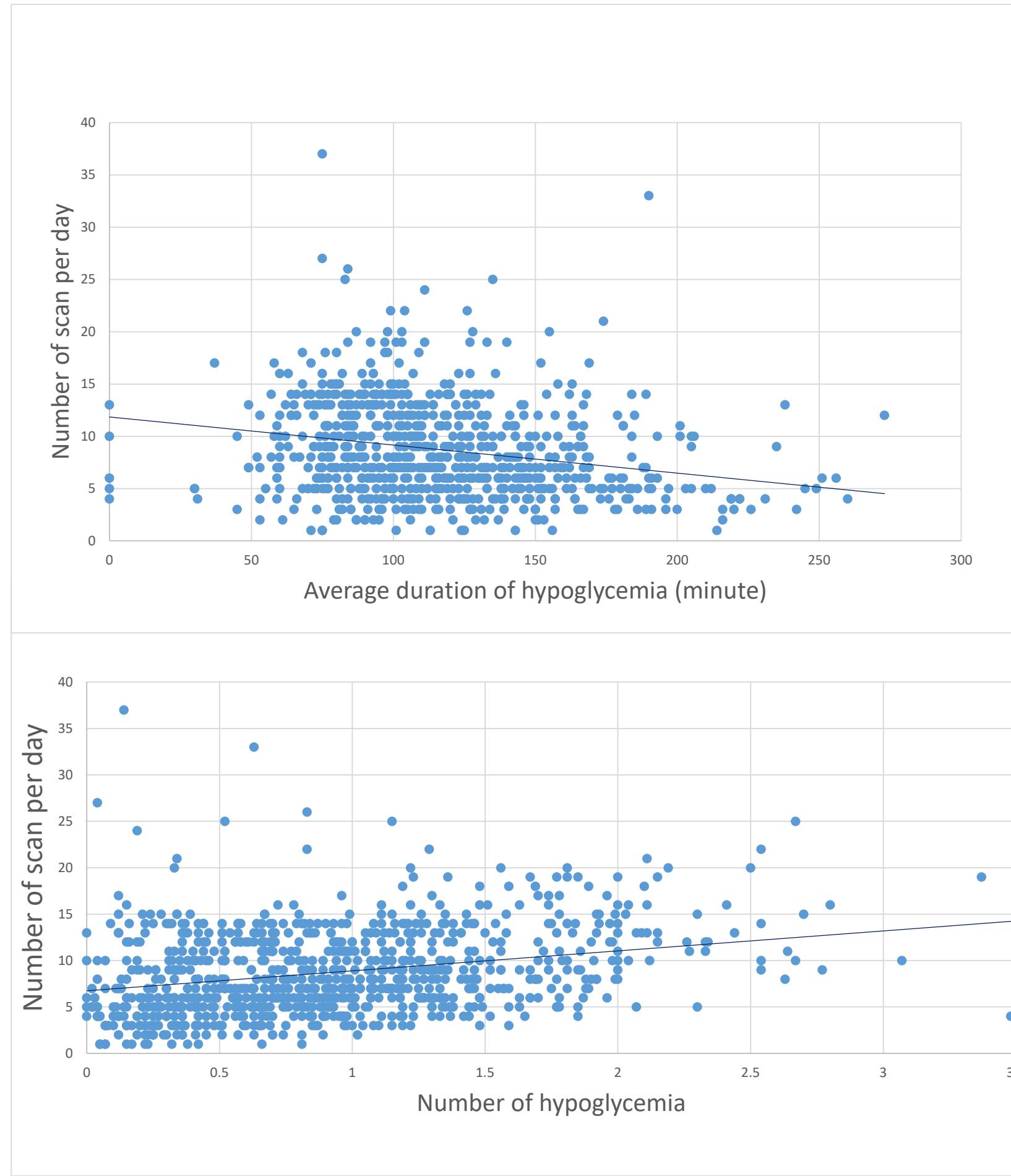
4. Results (2) :

➤ HbA1c:



- HbA1c decreases 0,15%

➤ Hypoglycemia:

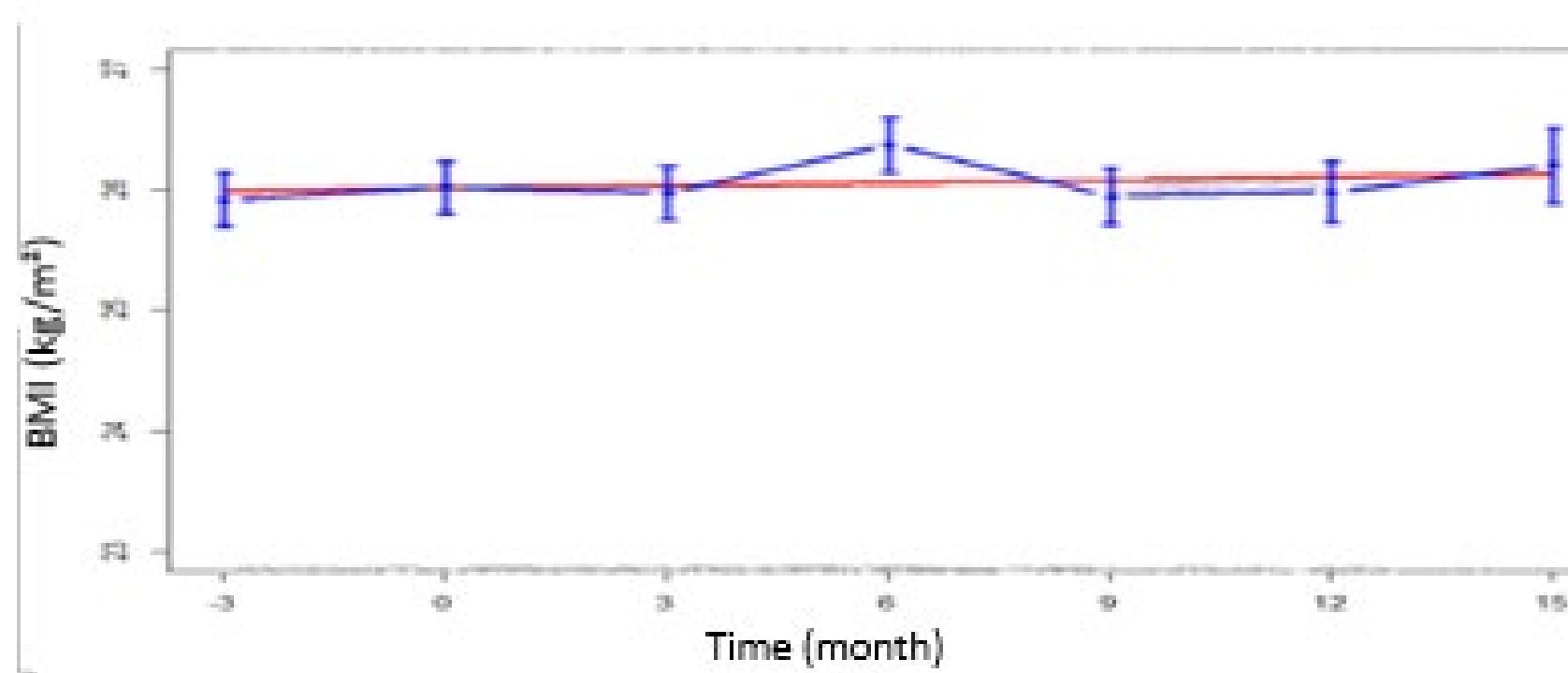


- No change in the number of hypoglycemas

- Correlation between duration of hypoglycemas and number of scans

- Correlation between number of hypoglycemia and number of scans

➤ BMI:



- BMI increase 0,15 kg/m²

➤ Satisfaction : High degree of satisfaction