

## Introduction:

Suspension of basal insulin delivery feature in response to predicted hypoglycemia of the Minimed® 640G integrated SAPT system with Smartguard® reduces severity and duration of hypoglycemic events.

## Objective:

To assess the efficacy and safety of Minimed® 640G in patients with Type 1 Diabetes (T1D) with high risk of hypoglycemia treated previously with Paradigm® Veo™.

## Research Design and Methods:

We conducted an observational prospective cohort study with T1D patients treated with Paradigm® Veo™ who were switched to Minimed 640G, in order to evaluate the impact on A1c levels and hypoglycemia after three months of therapy.

## Results:

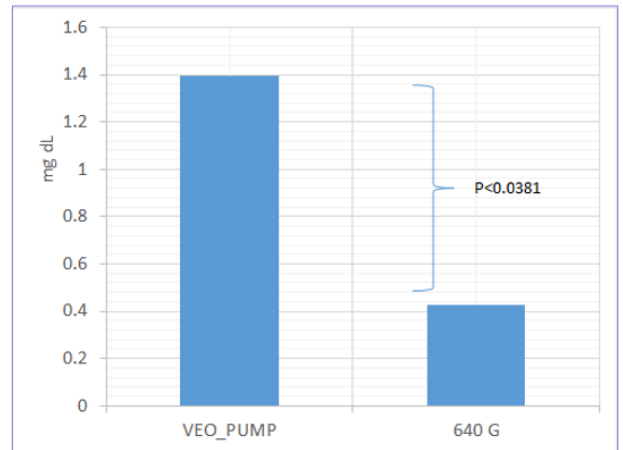
54 T1D patients were included, 17 patients were under 16 years of age (Table 1). Baseline A1c of  $8,0 \pm 1,3\%$ . 50% of patients had at least one event of severe hypoglycemia and 70% patients had unawareness hypoglycemia.

**Table 1.** Baseline Characteristics of the Included Patients

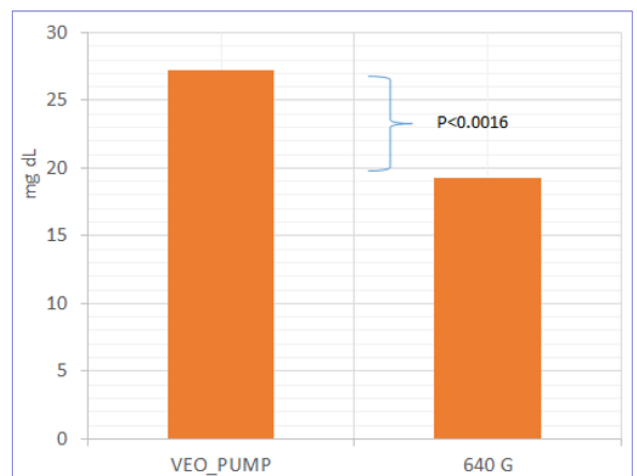
	n=54(%)
Age, mean (DS)	30,0(19,4)
Min, max of age	6(70)
Evolution time, mean (SD)	14,6(11,8)
Microvascular complications, n(%)	
Retinopathy	13(24)
Nephropathy	13(24)
Neuropathy	10(18,5)
Diabetic Gastroparesis	2(3,7)
Diabetic foot	3(5,5)
Macrovascular complications, n(%)	
Coronary heart disease	1(1,85)
Peripheral arterial disease	1(1,85)

At 3 months of follow-up, the decrease of A1C was statistically significant at  $7,34\% \pm 0,94\%$  ( $p=0,0001$ ), with decreased incidence of severe hypoglycemia from  $1,11 \pm 2,05$  to  $0,037 \pm 0,27$  episodes per patient per three months ( $p= 0,0032$ ).

Only one patient presented one event of severe hypoglycemia, ( $p < 0,0001$ ). AUC  $< 70$  mg/dl and AUC  $> 180$  mg/dl were statistically significantly reduced (figure 1 and 2). 12% of patients remain with hypoglycemia unawareness ( $p < 0,0001$ ) after initiating therapy. No patients presented diabetic ketoacidosis during the follow up.



**Figure 1.** Decrease of AUC  $< 70$  mg/dl at three months of follow up.



**Figure 2.** Decrease of AUC  $> 180$  mg/dl at three months of follow up.

## Conclusion:

Minimed® 640G integrated sensor-augmented pump therapy system with Smartguard® reduces the frequency of severe Hypoglycemia, exposure of glucose levels below 70 mg/dl and reduces A1c in T1D patients treated previously with Paradigm® Veo™.

## References

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