



# Influence of nocturnal hypoglycemia on school performance of teens with DM type1

-Ignacio Diez Lopez, HU Araba    -Ainhoa Sarasua Miranda, HU Araba  
-Maria San Juan, HU Araba              -Isabel Lorente Blazquez, HU Araba

It is known that a larger number of blood glucose control, glycemic control of patients with type 1 Dm suffers improvement. Likewise, the presence of hypoglycaemias maintained, especially at night and in school-age patients, could have a significant influence on neurological aspects such as night rest, learning and memory. Improved technology has allowed or development of control devices interstitial glucose, both blinded (retrospective) as real time (real time). The free FREE STYLE device is one of the most widely used in our environment because it is in the Services Portfolio since the end of 2017.

## Objective:

To assess the impact of nocturnal hypoglycaemias on the final school performance of adolescents affected by type 1a DM by studying the periods of hypoglycemia recorded through the use of FREESTYLE.



## Methods:

DM1 children over 12 years in secondary school, with at least 6 months duration from the debut. Use of free FREESTYLE system > 85% of the study period. Prospective longitudinal follow-up. Rating of time hypoglycemia (blood glucose < 70 mg / dl) from March to June 2018; analysis and schedule period 8:00 p.m. to 8:00 am; and the average scores reached at the end of the course (1-10) in core subjects (language, mathematics, environmental knowledge, social, English)

Comparative study .IBM SPSS Statistics 19.0., Paired nonparametric samples n <30. Survey of Health Questionnaire SF-36 (Spanish and summary).



Results: 25 children (17♂), 1 course repeater, average age 14.5 to [12-17.5]. Needs: 1.1 IU / kg / day [0.88-1.56], sensitivity 58 mgr / dl / IU [25-102] HbA1c (DCA): 7.7% [6.8-9.2] p: 0.38, Events of hypoglycemia / month 4, 9 [3-8] Hyperglycemia events / month 8 [7-20]. Night study hours 38% hyper (> 180 mgr / dl) in normo 44% (70-180 mgr / dl) and 18% in hiccups (< 70 mgr / dl) Average grade study 7.25 If you select those patients who spend on average > 33% of the night shift in hypoglycemia, they are 8/25 cases The distribution denotes average for this group of 6.6 vs 8.1 p: 0.02 95% IC

## CONCLUSIONS

We assume that this study may pose some deficiencies due to the size of the sample and the control of interstitial glycemia as a glycemic control method.

But our study shows the existence of significant differences and a positive correlation between worse school performance and worse night metabolic control.

Other risk behaviors in these ages (alcohol, other toxic) could be summative as a risk factor in case of unnoticed nocturnal hypoglycemia.

