GLUCOSE VARIATION AND INSULIN REQUIREMENT MEASURED BY AUTOMATIC INSULIN INFUSION THROUGH MENSTRUAL CYCLE IN TEENAGERS WITH TYPE 1 DIABETES FROM TAMAULIPAS

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***The authors have no conflict of interest to declare.**

INTRODUCTION

In accordance with the literature, women with Type 1 Diabetes (T1D) show a glucose fluctuation through menstrual cycle, above all, in luteal phase, glucose level have variability due to changes in sensitivity [1, 2]

AIM. Determine glucose variation through the menstrual cycle and their relationship using automatized system of insulin infusion and continuous glucose monitoring (CGM).

MATERIAL AND METHODS.

Longitudinal study, age below 19 YO , 12 female, studied for 3 months and 32 menstrual cycles reported, using the closed loop Hybrid System Medtronic Minimed 670 G. With previous consent, height, weight, body composition, HbA1c and lipid profile were measured. Menstrual cycle was divided in 5 phases: menstrual, Early Follicular (EF), Late Follicular (LF), Early Luteal (EL), Late Luteal (LL). From CareLink reports, average glucose, total daily doses, Time in Range (TIR), Time Above Range (TAR), Time Below Range (TBR) and Variation Coefficient (VC) were obtained. Data were analyzed in Excel. Statistical analysis were performed in Stata 11.

RESULTS.

Average weight 57.4 kg, Average height 156.2 cm, BMI 23.3 and menarche 11.8 Y, rhythm 24.7 day and bleeding 4.5 day. Control and variation metrics are reported the in next table:

	Mens*	EF*	LF*	EL*	LL*
Mean gluc mg/dl	156 ±14	156 ±10	157 ±9	155 ±12	153 ±10
Daily Ins U	56 ±15	55 ±15	54 ±13	55 ±15	55 ±16
Daily Ins U/Kg	0.95 ±0.32	0.94 ±0.3	0.91 ±0.2	0.93 ±0.3	0.94 ±0.3
TIR %	70 ±10	70 ±7	73 ±5	71 ±8	73 ±7
TAR %	27 ±10	27 ±8	24 ±6	26 ±9	24 ±7
TBR %	2 ±1.9	2 ±2	2 ±2	2 ±2	1.6 ±1.9
VC %	31 ±5	32 ±4	32 ±4	33 ±5	30 ±4
Tot. Carb	173 ±62	172 ±66	170 ±58	177 ±85	169 ±68

CONCLUSIONS.

In this sample important changes in glucose level and insulin input could not be seen through the cycle.

Sample size (12 women and 32 cycles) is not enough statistical evidence to confirm that menstrual cycle do not have influence in glucose variability or insulin needs.

References

1 Brown, S. A et al. Journal of Diabetes Science and Technology, 9(6), 2015.

2 Mewes D et al. J Diabetes Sci Technol. 17(5), 2023x|