CONTINUOUS GLUCOSE MONITORING SYSTEM AND PREDICTION OF PREGNANCY OUTCOMES IN PATIENTS WITH GESTATIONAL DIABETES MELLITUS: A PROSPECTIVE COHORT STUDY.

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INTRODUCTION

Gestational diabetes mellitus (GDM) is associated with an increase of maternal-fetal complications. Continuous glucose monitoring system (CGMS) detects parameters of glycemic variability through which it could be predicted the appearance of maternal-fetal complications.

METHODS

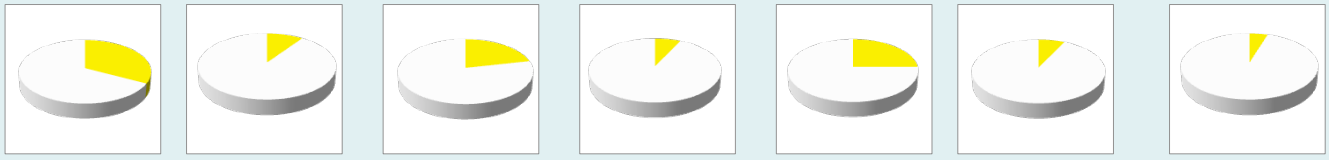
Women with GDM at 26-32 gestational weeks were allocated a 6-day CGM system (Ipro™2) right after diagnosis in an observational prospective study. It was analysed:
CGMS: mean glucose and standard deviation (SD), mean amplitude of glycemic excursions (MAGE), mean of daily differences (MOOD), continuous overlapping net glycemic action (CONGA). Expressed: mg/dL.
Maternal and neonatal outcomes: Caesarean, gestational age at delivery 39 week, macrosomia, large for gestational age (LGA), neonatal hypoglycaemia, neonatal hyperbilirubinemia and need for supplemental oxygen in the neonatal.

RESULTS

n = 52
Maternal age = 30± 2.42 years (>35 years = 40.3%)
Family history os diabetes= 57.7%
BMI pregnancy = 26.1 ± 4.62 kg/m2 (>30 kg/m^2 = 23.1%)
Weight gain = 7.6 ± 5.19 kg
HbA1c = 4.9%
Insulin treatment = 32.7%

CGMS and glycemic variability (mg/dL)
Mean = 98.02
DS = 19.66
MAGE = 42.22 ± 13.16
MODD = 19.44 ± 5.74
CONGA = 86.19 ± 8.56

Maternal and neonatal outcomes



Caesarean 32.7% | Macrosomia 9.6% | LGA 21.2% | PEG 7.1% | Neonatal hypoglycaemia 25% | Hyperbilirrubinemia RN 7.7% | Oxygen in neonatal 4.8%

Multivariable binary logistic regression
Ajusted Odds Ratio (95% confidence interval); p value

	Caesarean	LGA	Hypoglucemia
Mean	1.094 [0.972-1.230]; p 0.135	1.109 [0.983-1.252]; p 0.094	0.992 [0.889-1.107]; p 0.882
DS	0.945 [0.787-1.13]; p 0.548	1.15 [0.960-1.37]; p 0.130	1.012 [0.831-1.233]; p 0.905
MAGE	1.028 [0.967-1.092]; p 0.377	**1.075 [1.007-1.148]; p 0.031**	0.999 [0.943-1.058]; p 0.967
MODD	0 .899 [0.759-1.064]; p 0.216	1.073 [0.939-1.227]; p 0.302	0.889 [0.734-1.076]; p 0.226
CONGA	1.132 [0.990-1.295]; p 0.070	1.068 [0.946-1.205;]p 0.291	0.987 [0.876-1.113]; p 0.831

CONCLUSIONS

There is a correlation between MAGE at diagnosis of GDM and LGA. The use of CGMS could identify patients with more risk of maternal-fetal complications. These patients should have a close surveillance in order to prevent complications. However, further studies with a larger number of patients are required.