

## Maternal and fetal outcomes in women with gestational diabetes mellitus (GDM): does pre-pregnancy BMI make a difference?

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**Objective.** The aim of this study was to analyze if pre-pregnancy BMI in women with GDM may influence maternal and fetal outcomes.

**Materials and Methods.** We evaluated the fetal and maternal outcomes of 1082 women with GDM who delivered in our hospital from January 2014 to December 2021. The patients were divided into two groups according to pre-gestational BMI (< or  $\geq$  30). Differences between the two groups were analyzed. Statistical analysis was performed using fisher exact test and t-test. P-value < 0.05 was considered statistically significant.

**Results.** 249 women (23%) were obese (BMI  $\geq$  30) and significantly more likely to experience induction of labor (83% vs 54%), insulin therapy (38% vs 19%) and to deliver a LGA infant (15% vs 10%).

Rates of vaginal delivery (89% vs 85%) and urgent labor caesarean section (CS) (13% vs 11%) were not different in the two groups, while the rate of elective CS was higher in the obese (26% vs 13%). First trimester fasting glucose over 100 mg/dl was more common in the obese (20% vs 9%). The average levels of fasting glucose were also higher in this group (93 vs 88 mg/dl).

No differences in maternal age, neonatal weight, premature birth and analgesia rates were detected.

Neonatal hypoglycemia, jaundice, hypocalcemia, polycythemia, and respiratory distress were more common in obese women (25% vs 16%).

**Conclusions.** Obese women with GDM have an increased risk of severe disease, insulin therapy, labor induction and fetal adverse outcomes. It is mandatory in these patients to have intensive prenatal care.

	Obese woman (N= 833)	%	Normal weight woman (N = 249)	%	P value
Vaginal delivery	585/684	85.5	152/183	83	ns
Instrumental vaginal delivery	21/684	3	7/183	13.1	ns
Non-elective CS	78/684	11.5	24/183	1.6	ns
Elective CS	149	17.8	66	26.5	0.003
Induction of labor	372/684	54.4	125/183	68.3	0.007
Premature delivery	44	5.2	19	7.6	ns
Analgesia	262/684	38.3	74/183	40.4	ns
SGA	655	78.6	192	77.1	ns
LGA	82	9.8	39	15.7	
Nulliparity	385	46.2	78	31.3	< 0.0001
Diet therapy	677	81.2	155	62.2	< 0.0001
Insulin therapy	156	18.8	94	37.8	< 0.0001
Fasting glucose > 100 mg/dl	77	9.2	51	20.5	< 0.0001
Neonatal complication	129	15.5	63	25.3	0.0006
Maternal age	34.1		33.7		ns
Average fasting glucose	88.1 mg/dl		92.5 mg/dl		< 0.001
GA at delivery	38.5 ws		38.3 ws		ns
Neonatal weight	3191		3254		ns