ASSOCIATION OF FETAL MACROSOMIA IN PATIENTS WITH GESTATIONAL DIABETES – WHAT MATTERS MOST: GLUCOSE CONTROL, MATERNAL BMI OR WEIGHT GAIN DURING PREGNANCY?

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Objective

- Recent studies suggest that gestational weight gain (GWG) and pregravid BMI are the most relevant factors for fetal macrosomia (LGA), exceed the impact of diabetes during pregnancy.
- Does pregestational BMI and gestational weight gain cause a more robust association to LGA than gestational diabetes (GDM)?

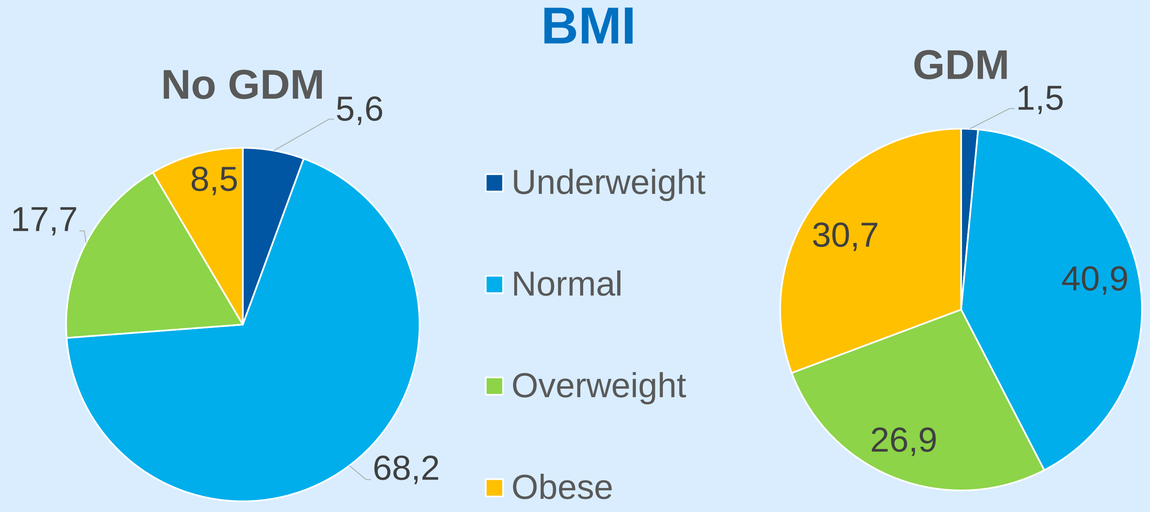
Methods

- We compared 466 GDM patients treated in our department in 2012-2014 with 3672 woman of our perinatal birth cohort without diabetes diagnosis, regarding LGA, pregestational BMI, diabetes and GWG.
- Adjusted Odd Ratios were determined using multivariate logistic regression. Maternal age, weeks of gestation, parity and gender of the newborn were included as covariates.

Characteristics

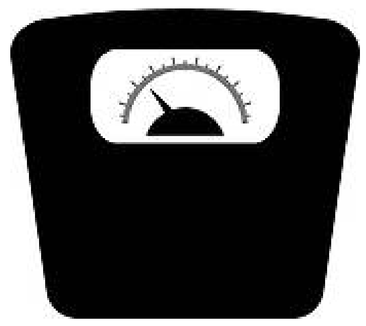
	No GDM (n=3672)	GDM (n=466)	p
BMI (kg/m²)	22,5	26,3	<0,01
Parity	1	1	n.s.
Maternal age (years)	30	31	<0,01
Gestational Weight Gain (kg)	15	12	<0,01
Exzessive WG (kg)	44,2%	45,7%	n.s.
Weeks of Gestation	39	39	<0,01
Fetal Weight (g)	3380	3430	0,02
LGA	8,5%	9,1%	n.s.
SGA	9,3%	7,6%	n.s.
APGAR1	9	9	n.s.
APGAR5	9	9	n.s.
APGAR10	10	10	0,006

BMI



Descriptive

- LGA (>90th centile) did not differ in both groups.
- Pregravid BMI was categorized in underweight (5.1%), normal weight (65.0%), overweight (18.8%) and obese (11.1%), accordingly 30% were overweight or obese in our cohort.
- BMI categories differed significantly between GDM and non-GDM (p<0.01).
- GWG was grouped using IOM-criteria (recommended/excessive GWG) and showed no difference between the groups - 45% showed excessive GWG in each group.



Results

- Multivariate analysis showed a significant influence of BMI (OR 1.039), gestational weight gain (OR 1.064) and IOM-criteria on LGA: recommended gestational weight gain decreased the risk for LGA (OR 0.588) while excessive weight gain raised the risk (OR 1.7).
- Diabetes alone seems to have no significant influence (OR 0.88 CI).

	OR	CI		Sig.
Exzessive weight gain*	**1,7**	1,126	2,567	0,012
Recommended weight gain*	**0,588**	0,390	0,888	0,012
BMI (kg/m²)*	**1,039**	1,007	1,071	0,017
Diabetes	**0,880**	0,579	1,338	0,550
Weight gain (kg)*	**1,064**	1,028	1,102	0,001

Adjustments were also made for maternal age, parity, gestational age and sex of newborn

Conclusion

- Our data verify the impact of gestational weight gain and maternal BMI on fetal macrosomia and strongly support IOM-recommendations of gestational weight gain.
- Controlled GDM does not seem to influence fetal macrosomia.