The association between intrauterine weight deviation changes from second to third trimester and adverse outcomes in severely obese pregnant women, ID: 4028

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Adverse outcome in growth deviations between 2nd and 3rd trimester

	>+30%	+20-30%	+10-20%	± 10%	-10-20%	-20-30%	<-30%
IUFD (OR)	7.2 *	5.6 *	0.3	ref	1.5	2.1	5.8 *
Preterm delivery (OR)	4.6 *	1.3	0.1	ref	1.9	2.4 *	5.0 *
Emergency ceasearean (OR)	1.1	1.4	1.4 *	ref	1.0	0.8	0.9
Neonatal death (OR)	8.4 *	1.12	1.9	ref	0.1	0.7	5.3 *
Asphyxia (OR)	2.1	1.1	0.7	ref	1.1	2.1 *	2.2 *

* p<0.05

Table 1.

Objective

To investigate the consequences of intrauterine growth changes from second to third trimester on adverse pregnancy and fetal outcome, in severely obese women.

Material

Danish national cohort study of 20 155 pregnant women with BMI >35kg/m^2. 10 396 women with a second and third trimester sonographic estimated fetal weight were included. Multiple pregnancies, fetuses with malformations, and missing information on maternal BMI were excluded.

The weight deviation change was calculated as the difference between the weight deviation in second and third trimester. Weight deviation was estimated according to Hadlocks formula for EFW and the gestational age weight curve published by Marsal et al. Logistic and multiple linear regression were used to estimate the effect of ±10, 20, and 30 % weight deviation change between second and third trimester on intrauterine fetal death (IUFD), preterm delivery emergency caesarean, Apgar scores, asphyxia during birth, fetal sepsis, length of hospital stays, and fetal death within 90 days after birth. The analyses were adjusted for maternal age, smoking, parity, and pregnancy complications (GDM and PE).

Results

4869 (46.8%) women had a weight deviation change of less than +/-10 % and were categorized as reference group. A positive growth deviation was found in 732 (7.0 %), 240 (2.3%), 91 (0.9%) deviating +10- +20 %, +20-+30, > +30 %, respectively. Both positive and negative weight deviation changes were correlated to adverse neonatal outcomes (Table 1). There was no increased risk of neonatal sepsis in any group. A longer hospital stay was found in all children with a negative growth deviation change <-10% (0.5-2.8 days, p=<0.001) and a positive deviation >+ 30% (1.6 days, p=0.005).

Conclusion

A negative growth deviation change from second to third trimester increases the risk of IUFD, asphyxia, preterm delivery, and neonatal death. A positive growth deviation change increases the risk of preterm delivery, emergency caesarean and holds a higher risk of intrauterine or neonatal death than growth restricted fetuses.

In severely obese women it is important to be aware of accelerated growth during third trimester due to the high risk of severe adverse fetal outcomes.

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