WOMEN BORN PRETERM OR SMALL-FOR-GESTATIONAL AGE (SGA) ARE AT RISK OF SUBSEQUENT GESTATIONAL DIABETES MELLITUS (GDM) AND PRE-ECLAMPSIA

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Background and aims: Low birthweight is associated with development of GDM, pre-eclampsia as well as type 2 diabetes (T2D) later in life. For T2D the increased risk has been shown to be associated with preterm birth and poor fetal growth, but the mechanisms for GDM and pre-eclampsia remain uncertain.

Methods: We identified all Danish women who gave birth to at least one child in the years 1985-2007. Two cohorts of all Danish women born 1974-1977 (n = 84.219) and 1978-1981 (n = 32.376) were created, due to different methods of registering birth weight and gestational age in the two periods. Data was linked with information on gestational diabetes, pre-eclampsia and maternal educational level.

Results: Mothers born SGA (BW < -2 SD of expected) had an increased risk of developing GDM (RR = 1.20 [0.94-1.52] for the first cohort, RR = 1.84 [1.21-2.81] for the second cohort), and pre-eclampsia (RR = 1.60 [1.35-1.87] and RR = 1.72 [1.26-2.33]).

In a multivariate logistic regression model the risk of developing gestational diabetes was associated with being born SGA (p < 0.19 for 1974-1977, p = 0.044 for 1978-1981) and low gestational age (p = 0.036 and p = 0.31). The risk of developing pre-eclampsia was associated with being born SGA (p < 0.0001 and p = 0.0001) and low gestational age (p < 0.041 and p = 0.10).

Conclusion: In this cohort of young Danish mothers, prematurity as well as SGA was associated with increased risks of gestational diabetes and pre-eclampsia.