

EP05.63 Association between diabetic diseases and fetal pancreas diameter in pregnant women

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Objectives

This study aimed to determine whether the fetal pancreas diameter differs between healthy pregnancies and those with maternal diabetes.

Methods

The fetal pancreas size was retrospectively measured in ultrasound images of the transabdominal plane used for abdominal circumference measurement by assessing the anterior-posterior pancreatic diameter. We compared pregnancies affected by diabetes to healthy pregnancies, all between 19+0 and 33+6 weeks of gestation. The diabetes cases were further categorized into three subgroups: diet-controlled gestational diabetes, insulin-dependent gestational diabetes, and pre-existing diabetes mellitus. The association between fetal pancreas size and various parameters like gestational age, BMI, fetal abdominal and head circumference, was analyzed.

Results

Median pancreatic diameter was similar in pregnancies with maternal diabetes and healthy controls (4.3 mm vs. 4.5 mm; $p = 0.82$; $n = 100$ vs 110). In a model adjusted for gestational age, diabetes status was associated with a +0.098 mm difference in pancreatic diameter (95% CI -0.12 to 0.31 mm; $p = 0.389$). In multivariable models, the estimated effect of diabetes status was smaller after accounting for maternal BMI (e.g., +0.024 mm; 95% CI -0.21 to 0.26 mm; $p = 0.841$), while pancreatic diameter increased with gestational age (+0.23 mm/week; $p < 0.001$), maternal BMI (+0.026 mm; $p = 0.003$), abdominal circumference (+0.021 mm per mm; $p < 0.001$), and head circumference (+0.022 mm per mm; $p < 0.001$).



Figure 1. Measurement of the anterior-posterior pancreatic diameter

Conclusion

Fetal pancreatic diameter was comparable between diabetic and non-diabetic pregnancies in absolute terms (4.3 vs 4.5 mm; $p = 0.82$). Regression analyses showed consistent positive associations of pancreatic diameter with gestational age, maternal BMI, and fetal size measures, whereas the estimated association with diabetes status was small and imprecise. These findings suggest that fetal pancreatic diameter may reflect broader maternal-fetal metabolic and growth-related factors rather than serving as a standalone marker of maternal diabetes.