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ISLET AUTOANTIBODIES IN OFFSPRING OF MOTHERS WITH GESTATIONAL DIABETES AT THE AGE OF 4 TO 14 YEARS

E. Mildenberger[1], F. Dejas[2], D. Stenzel[3], R. Stiff[4], R. Rossi[2], K. Vetter[3], U. Schaefer-Graf[5]

[1]Neonatology, University Medical Center, Johannes Gutenberg-University, Mainz, [2]Paediatrics, [3]Obstetrics, [4]Center for Diagnosis and Treatment of Children, Vivantes Medical Center, Neukölln, [5]Obstetrics and Gynaecology, St. Joseph Hospital, Berlin, Germany

Background and aims: Offspring of mothers with gestational diabetes are at a potential risk to develop type 1 diabetes, due to an ongoing stimulation of pancreatic beta-cells. Appearance of islet autoantibodies may precede the development of type 1 diabetes. This study was aimed to investigate the occurence of islet autoantibodies in offspring of mothers with gestational diabetes.

Methods: 238 (125 girls, 113 boys) children of mothers with gestational diabetes were examined at age 4 to 14 years. Serum samples were tested for autoantibodies against glutamic acid decarboxylase (GADA), tyrosine phosphatase (IA2A), islet cells (ICA), and insulin (IAA).

Results: 11 (7 girls, 4 boys, mean age 8.9 (4 - 12) years) of 238 children (4.6%) had GADA. One girl had also IA2A. None had ICA or IAA. 4 children were born small for gestational age (SGA), 1 LGA, and 6 AGA. 13% of the children without antibodies were born SGA, 13% LGA, and 74% AGA. 10 children with antibodies had normal body mass indices (BMI), one had a BMI > 90. centile. Of the children without antibodies 59% had a normal BMI, 28% a BMI > 90. centile, and 13% a BMI < 10. centile.

Conclusions: The prevalence of islet autoantibodies was 4.6% in a cohort of 238 children of mothers with gestational diabetes. GADA were predominant, whereas autoantibodies to insulin were not detectable. Underweight at birth, rather than overweight in childhood seems to be risk factor for the development of islet autoantibodies in the offspring of mothers with gestational diabetes.