OBJECTIVES

Children exposed to gestational diabetes mellitus (GDM) in utero have higher risk of development of glucose intolerance and diabetes mellitus. The study was undertaken to assess the selected carbohydrate parameters in children exposed to GDM.

METHODS

50 children exposed to gestational diabetes were compared with 46 control subjects. Anthropometric parameters of a newborn were obtained from the medical records. In all participants height, body mass, waist and hip circumferences were measured. BMI, waist-to-hip ratio (WHR) and waist-to-height ratio (WHtR) were calculated. Values of fasting glucose, insulin, C-peptide and HbA1c were measured and insulin resistance (HOMA2-IR), insulin sensitivity (HOMA2-S), β-cell function (HOMA2-B) were calculated. In obese children (BMI ≥85 percentile) oral glucose tolerance test (OGTT) was performed. Mother’s pre-pregnancy and current BMI was calculated.

RESULTS

The prevalence of overweight/obesity in the study group was 38%, in the control group 41% (p=0.19). Higher fasting glucose level (p=0.02) and HbA1c (p=0.0004) were found in the study group comparing to the controls. In children exposed to GDM in utero a positive correlation of fasting insulin and WHR (r=0.31, p=0.028) as well as significantly lower HOMA2-B (p=0.03) were observed. In the study group higher HOMA2-IR (p=0.0002) and HOMA2-B (p=0.000309) and also lower HOMA2-S (p=0.0002) were observed among participants with overweight/obesity comparing to children with normal body weight. In the study group a correlation of HOMA2-IR and SD of the birth weight was found (r=0.28, p=0.049). In children exposed to GDM the correlation of fasting insulin level, HOMA2-IR, HOMA2-B and mother’s BMI (pre-pregnancy and current) was observed.

CONCLUSION

Children exposed to gestational diabetes in utero, in spite of similar prevalence of overweight/obesity comparing to their non-exposed peers, could have higher risk of glucose intolerance and diabetes mellitus in future. Towards observed decreased insulin sensitivity and compensatory increase in insulin secretion, prevention of overweight and obesity in this group seems to be essential.

REFERENCES


CONFLICTS OF INTEREST: The authors confirm that this poster content has no conflicts of interest.