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Prevalence of overweight and growth retardation and related factors in children with Type-1 diabetes mellitus

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Aim: Diabetes mellitus type one is recognized by inadequate insulin secretion, so absence of anabolic effects of insulin lead to low weight. Insulin therapy, decrease in physical activity to avoid hypoglycemia and changes diet and life style are probable causes of overweight and obesity in these patients. Here we tried to estimate prevalence of obesity, overweight and growth retardation in a population of diabetes mellitus, and also some related factors.

Method: Ninety patients with stable T1D aged 2–18 years with no history of recent infection were included. Written informed Consents were taken from the parents before enrollment. Variables were age, gender, weight and height percentile, body mass index, thyroid status, blood pressure, HbA1C, serum creatinine, 24 hours urine albumin and GFR, compared against of overweight and growth retardation, using appropriate statistical approach.

Results: Among 90 patients, 1.1% had BMI of higher than 30, 6.6% between 29.9 and 25, 40% between 24.9 and 18.5 and 52% less than 18.49 kg/m². Height percentile had mean and standard deviation of 45.3(30.3) ranging 3 to 99th percentile, weight percentile had mean and standard deviation of 42.5(15.8), ranging 14 to 98 percentile. Height percentile had significant negative correlation with duration of diabetes, age and plasma creatinine. Weight percentile had significant positive correlation with age, duration of diabetes, plasma creatinine and urine albumin and negative with GFR. Body mass index was positively correlated with age and plasma creatinine. Height percentile also was associated with systolic blood pressure, while weight percentile and body mass index, and were associated with thyroid status, puberty stages, both systolic and diastolic blood pressure.

Conclusion: Only 40% of diabetic patients had normal body mass index. While more than half of them were underweight, 6.6% had overweight. Height and weight for age and sex, presented as percentiles, were normal in all patients.

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