Abstract

Objectives: Overweight, the metabolic syndrome and accompanying diseases are dramatically increasing problems. We investigated social and behavioral variables that influence overweight in adolescents and tested their influence on plasma markers related to diabetes and endothelial dysfunction. Methods: 79 male adolescents were enrolled (age 13-17 years). Endothelial progenitor cells were counted by flow cytometry. Adiponectin and soluble E-selectin (sEselectin) were determined by ELISA. Results: Body weight differs significantly if the family’s history was positive for arterial hypertension (p < 0.001), diabetes (p < 0.001), hypercholesterolemia (p<0.001), and coronary artery disease (CAD, p < 0.01). The hours of physical activity represent a predictor of BMI in linear regression analysis (p < 0.001; R² = 0.195). Markers for endothelial damage are altered in adolescents with positive family history for hyperlipidemia and CAD. Conclusion: The family’s history is an important variable influencing the body weight of teenagers. Via obesity and independently, it influences the early development of endothelial damage. It might serve to detect teenagers at risk for appropriate intervention.

Keywords

Adolescents, Overweight, BMI, Exercise, EPC, Soluble E-selectin, Adiponectin.