Extended Abstract Journal of Clinical Cardiology and Research 2021
Vol.4 No.1

Obesity Congress 2016: Prediabetes and cardiovascular parameters in obese children and adolescents

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Objective:
The aim of this study was to evaluate the prediabetic obese children and adolescents with cardiovascular risk and cardiac functions. Few study in the literature showing the relationship of cardiac function and prediabetes clinic in childhood.

Methods:
Study was performed with 198 obese children and adolescents 6-18 years of age. Anthropometric measurements, blood pressure measurements, oral glucose tolerance test, lipid profile and HbA1c measurements of patients were assessed. Prediabetes was defined according to ADA criteria. Left ventricular mass index (L V M I), carotid intima-media thickness (c-IMT) and tissue Doppler measurements were evaluated by echocardiography.

Results:
LVMi was determined significantly higher in prediabetes group (p=0.03). There were no statistically significant differences in right ventricular tissue Doppler measurements in the prediabetic group. Left ventricular tissue Doppler measurements were significantly higher in the group prediabetes. LVEEM (left ventricular E/e ratio) (p=0.04); LVEM (left ventricular myocardial velocity cm/s n) (p=0.035). LVMi were found to positively correlated with triglyceride levels, blood pressure, waist circumference, body weight SDS and negatively with HDL cholesterol (p=0.043, p=0.039, p=0.025, p=0.009, p=0.038 respectively). LVEM was correlated with glucose (p=0.046) and LVEEM was correlated with systolic blood pressure (p=0.035). In linear regression analysis for clinical cardiovascular risk factors fasting glucose was the best predictor of LVEM.

In this study deterioration of cardiac functions in prediabetic obese children and adolescents was shown. We recommend determining the cardiovascular risk and cardiac dysfunction in the early stages in prediabetic obese children and adolescents by tissue Doppler measurements.

In linear regression analysis for clinical cardiovascular risk factors, fasting glucose level was the best predictor of LVEM. Conclusion: In this study, deterioration of cardiac function in prediabetic obese children and adolescents was shown. We recommend determining cardiovascular risk and cardiac dysfunction at early stages in prediabetic obese children and adolescents.

Risk-based screening for prediabetes and/or type 2 diabetes should be considered in children and adolescents after the onset of puberty or ≥10 years of age, whichever occurs earlier, with overweight (BMI ≥85th percentile) or obesity (BMI ≥95th percentile) and who have one or more additional risk factors for diabetes (see Table 2.4 for evidence grading of other risk factors).

Memoir:
Mehmet Emre Atabek has completed his PhD from Selcuk University, Turkey and Post-doctoral studies from Selcuk University School of Medicine and Erciyes.

University School of Medicine. He is the Director of Pediatric Endocrinology Department in Necmettin Erbakan University School of Medicine, Konya, Turkey. He has published more than 140 papers in international journals and most of them indexed in SCI/SCI-Expanded list. He has existing intensive studies on obesity and is a specialist in this field.

Foot Note: This work is partly presented at Event on 6th World Congress on Obesity, August 08-10, 2016 at Toronto, Canada

Discussion: