OMICS International
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Alzbeta Tohatyova et al., Pediat Therapeut 2015, 5:3
http://dx.doi.org/10.4172/2161-0665.S1.008

Relationship between structural and functional changes of the left ventricular and uric acid and obesity in children and adolescent

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Nowadays, hyperuricemia, as a cardiovascular risk factor, is considered one of the metabolic syndrome component, and it is closely correlated with obesity and the body fat accumulation level. No data have been published regarding the influence of the Uric Acid (UA) level on the structural and functional changes of the left ventricular in case of obesity in children, and thus the aim of our study was to assess the influence on UA in obese children. In 25 (age 13, 0±2, 3) overweight and obese subjects and 24 lean controls, blood pressure, WC, fasting plasma glucose and insulin, UA were measured. Left Ventricular (LV) and Left Atrium (LA) structural and functional parameters were measured by transthoracic echocardiography. In patients with obesity and overweight were significantly structural changes: Higher LV thickness, LV mass, LV size, as -well as functional changes: Higher LV volume, LV stroke volume (LV SV) and impaired LV diastolic indexes. The UA values were higher in overweight and obese children, but this increase was not significant. Simple linear analysis showed a correlation of UA with LV thickness, relative wall thickness, LV size and area, LV volume diastole, LV SV and LV ejection fraction. In this study, we confirmed structural and functional changes of left heart in terms of LV volume overload in childhood obesity. This change seems to be influenced by UA, but the association between the signs of left volume overload and UA has not yet been clarified. This research would require other studies with a larger amount of patients.

Biography

Alzbeta Tohatyova is currently a PhD student at Medical Faculty, P J Safarik University in Kosice, Slovakia, Central Europe. Her research interests focus on childhood obesity, structural and functional changes of the left ventricular in case of obesity in children.

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