

Category: Clinical

Topic: 6 Fat Metabolism, Obesity

**Title: METABOLIC SYNDROME IN CHILDREN DEVELOPMENT:
CARDIOMETABOLIC DISORDERS AND SOCIAL
BACKGROUND**

Author(s): Tetyana Chaychenko¹; Ganna Senatorova¹

Institute(s): ¹Kharkiv National Medical University, Pediatrics № 1 and neonatology, Kharkiv, Ukraine

Text: **Background:** Obesity epidemic demands improvement of efficacy of diagnosis, correction and prevention of continuous health disorders in overweight children.

Objective and hypotheses: It was hypothesized some staging of cardiometabolic risk development which is poorly diagnosed by the IDF criteria for metabolic syndrome (MS) in children.

Methods: History, lifestyle and psychology were studied in 961 Kharkov region adolescents. Left ventricular geometry and function, 24-hours BP monitoring, exercise tolerance, carotid intima-media thickness and metabolic peculiarities were investigated in 208 children with different degree of excess weight with further statistical comparison of the results with the IDF criteria for MS.

Results: Overweight children lifestyle is differ by more prolonged sedentary activities ($4,50 \pm 1,11$ vs. $2,93 \pm 0,08$ hours in population, less regular diet $60,77 \pm 3,38\%$ vs. $81,16 \pm 1,96\%$ in population. Most predictive value inherent following facts: premature birth (Se = 70%; Sp = 97%; OR = 2,54; RR = 1,93), irregular meals (Se = 39%; Sp = 81%; OR = 2,81; RR = 2,15), maternal obesity (Se = 0,36; Sp = 92%; OR = 6,34; RR = 3,41) and hypertension (Se = 73%; Sp = 66%; OR = 5,1; RR = 2,93), anxiety level and sedentary activity (MR = 0,61; F = 30,63 with $P < 0,0001$). It was established the cardiovascular remodeling and dysfunction occurs in overweight already and accompanied by exercise intolerance directly linked with insulin resistance ($P < 0,0001$). The same time MS IDF criteria (>3) are highly specific (Sp=0,96), but low sensitive (Se=0,28) with deterioration negative predictive value (NPV=0,29).

Conclusions: There is a tendency to obesity distribution in Ukrainian population with an early cardiovascular impairment for which diagnosing more sensitive criteria are necessary. That's why cardiovascular risk prognostic scale and management strategy were offered for obese children.