

**Cardiovascular Complications of Obesity in the Pediatric Population - Ten Years Case Study in the North East Region of Romania**

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**Introduction:** Obesity in children has a strong impact on all systems and organs, causing metabolic and cardiovascular complications, both short and long term, significantly increase morbidity and mortality rate. The prevalence of obesity and overweight in children has increased dramatically in Europe, the number of cases tripling in the last 25 years. In Romania, the prevalence of obesity in children aged 3-17 years has increased considerably in the last 10 years, ranking it third in Europe. The purpose of the study is to determine the relationship between overweight and cardiovascular complications in children and adolescents, and at the same time, to establish therapeutic management for both excess weight and to prevent or treat them.

**Methods:** In the study, we analyzed 464 children, aged 1-18 years, hospitalized for a period of ten years (January 2006 – December 2015) in the Pediatric Cardiology Department, "Sfanta Maria" Children's Emergency Hospital of Iasi, Romania.

We observed age, sex, body mass index, blood pressure, biological VSR, serum fibrinogen values, total cholesterol and the results of the echocardiography and ophthalmological examination. All patients in the study group have performed a neuropsychiatric and psychologically exam. Prospective echocardiographic measurements were performed in 464 obese children. Two-dimensional, M-mode and color M-mode ultrasound, conventional pulse wave Doppler imaging were used to assess cardiac function.

**Results:** We found increased blood pressure values in 21.3% of cases. Measurements of LV mass, LV wall thickness and LV end-diastolic diameter and volume were significantly elevated in 73 obese children (15.7% of cases).

VSR, fibrinogen and total cholesterol levels were found to be higher among female subjects (hypercholesterolemia in 15.9% of cases, and 40% of cases with increased plasma fibrinogen).

**Conclusion:** In this study, the occurrence of cardiovascular complications of obesity in the pediatric population was recorded.

The echocardiographic exam confirms the elevated LV mass in obese children.

It is necessary to follow the periodic height and weight, as well as to evaluate blood pressure, total cholesterol, fibrinogen among children with obesity, in order to prevent cardiovascular complications and to include these patients in a cardiovascular risk group.