

**Obesity in the Paediatric Population – a Risk Factor for Cardiovascular Disorder – 12 Years Case Studies in the North-East Region of Romania**

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Introduction: Obesity in paediatric population has a strong impact on all systems and organs, causing metabolic and cardiovascular disorders, both short and long term, significantly increase morbidity and mortality rate. In Romania, the prevalence of obesity in children aged 1-18 years has increased considerably in the last 12 years, ranking it third in Europe.

The purpose of the study is to determine the relationship between obesity and cardiovascular risk in paediatric population, and at the same time, to establish therapeutic management of obesity and cardiovascular disorders.

Methods: In the study, we analyzed 581 children, aged 1-18 years, hospitalized for a period of eleven years (January 2006 – January 2018) in the Paediatric 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, total lipids, lipidogram and the results of the echocardiography and ophthalmological examination. All paediatric patients in the study group have performed a nutritional study, neuropsychiatric and psychologically exam.

Prospective echocardiographic measurements were performed in 581 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 140 of cases. Measurements of LV mass, LV wall thickness and LV end-diastolic diameter and volume were significantly elevated in 101 obese children (17.38% of cases).

VSR, fibrinogen and total cholesterol levels were found to be higher among female subjects (hypercholesterolemia in 16.69% of cases, and 46.12% of cases with increased plasma fibrinogen).

Conclusion: This study showed an increased cardiovascular risk in obese paediatric population in the north east region of Romania

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

It is necessary to make a periodic follow-up of height and weight, as well as to evaluate blood pressure, total lipids, lipidogram, total cholesterol, fibrinogen, oftalmological and psychological exam, among children with obesity, in order to prevent cardiovascular complications.