Poster Session

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Obesity and epicardial fat in a Spanish infant population by echocardiography

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Introduction: Childhood obesity is currently a mayor public health problem. There is a direct relationship between a high body mass index with a higher cardiovascular morbimortality. Among child population 4 out of 10 individuals are overweight, the prevalence of overweight is 26 per cent and the prevalence of obesity is 12,6 per cent. The epicardial fat is a heart visceral adiposity index, may play a role in the coronary atherosclerosis pathogenesis, a chronic inflammatory disease and in heart disease. The rise in the epicardial fat is considered as a target organ injure in child population.

Aims: To know the relationship between childhood obesity and echocardiographic parameters of epicardial fat, as a target organ injure among the child Mediterranean population.

Methods: Randomly, we selected a sample of children and adolescents of primary and secondary education, in a rural town of 2864 inhabitants of southern Spain. We include children between 6-17 years. We performed transthoracic echocardiography, with measurements of 2D epicardial fat, in systole in parasternal long axis (PLA) and parasternal short axis (PSA), taking the measure as the average of 3 measurements in consecutive beats.

Results: We studied a total of 212 children (10.9 ± 3.0 years and 51.9% males), 45 (21.3% were obese), of which 7.2% were diagnosed with hypertension (HBP), 5.1% with metabolic syndrome and 5.3% as prediabetic. The thickness of the epicardial fat in PLA was related to Obesity 2.2 ± 0.7 mm vs 1.75 ± 0.5 mm p (<0.001); HBP 2.16 ± 0.9 mm vs. 1.86 ± 0.5 mm ($P <0.05$); Metabolic syndrome 2.23 ± 0.8 mm vs 1.81 ± 0.5 mm ($P <0.05$), in PSA: Obesity 2.36 ± 0.7 mm vs 1.78 ± 0.6 mm p (<0.001); HBP 2.31 ± 0.6 mm vs 1.88 ± 0.6 mm ($P <0.05$); Metabolic syndrome 2.43 ± 0.8 mm vs 1.87 ± 0.6 mm ($P <0.01$) and overall combining PLA and PSA views: Obesity 2.27 ± 0.7 mm vs 1.76 ± 0.5 mm p (<0.001); HBP 2.23 ± 0.7 mm vs 1.85 ± 0.5 mm ($P <0.05$); Metabolic syndrome 2.23 ± 0.7 mm vs 1.84 ± 0.5 mm ($P <0.01$).

Conclusion: In a random Spanish pediatric population correlation is found by echocardiography of the thickness of epicardial fat with obesity, HBP and metabolic syndrome. Being this a rapid test, non-invasive and without ionizing radiation.