

significant for those on the ketogenic diet (2.26 ± 0.81 vs 1.8 ± 1.22 , $P=0.005$), except for two children that underwent bariatric surgery. Most of the children that followed the hypocaloric diet (75%) are currently lean or overweight BMI SDS (<2) and showed no differences according to difficulty. **Conclusion:** Our data reveals the importance of life style intervention in childhood obesity. A BMI SDS decrease of approximately 0.5 is of great importance and can be retained and decreased further into young adulthood irrespective of the diet followed.

P3-829

Metabolically Unhealthy Obese Children Under the Risk of Exercise Induced Chronotropic Incompetence

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Background: There is a high incidence of acute cardiovascular events in obese subjects. **Objective and hypotheses:** We hypothesised that exercise tolerance is different in metabolically healthy (MHO) and metabolically unhealthy (MUO) obese adolescents. **Method:** 45 obese adolescents aged 10–17 (23 males and 22 females) were examined with an anthropometry, fasting blood glucose, insulin and lipids. IDF criteria were used for grouping for MHO and MUO. Multistage cycle protocol was offered to each participant with further analysis of cardiovascular parameters: resting heart rate (HRr), maximal heart rate (HRm), resting and maximal systolic and diastolic blood pressure (SBPr, SBPm, DBPr, DBPm respectively). Maximal predicted heart rate (MPHR) was calculated by Tanaka formula and HRm in patient was compared with MPHR as a percent of it (%MPHR). Standard statistical methods were used for the data analysis. **Results:** The chosen population was homogenous by gender, age, body composition, fasting glucose and insulin levels ($P>0.05$ for all), resting cardiovascular parameters HRr ($P=0.467$), SBP ($P=0.370$) and DBP ($P=0.477$). There was statistical difference in between groups by the fasting lipids (P for TC=0.003; TG<0.001; HDL=<0.001; FFA=0.002). There was predominantly chronotropic response in MHO with an increasing HRm till $152.714 + 18.611$ vs $137.2 + 23.917$ bpm ($P=0.041$) and predominantly inotropic response in MUO with an increasing SBPm till $171.222 + 18.123$ vs $149.171 + 21.467$ mmHg ($P=0.007$). Observed HRm was lower than expected (Chi-Square=767.8897; $P=0.0000001$). Statistic difference in groups by %MPHR ($82.847 + 12.49$ in MHO vs $71.167 + 10.144$ in MUO ($P=0.019$). Multiple linear regression model was created to predict %MPHR at the top of exercising in obese children (MR=0.695; F(6,34)=5.53; $P=0.004$). The model includes Lean BMI ($b=-0.72$; $P<0.001$), ISI-FFA ($b=-0.3$; $P=0.02$), Cholesterol ($b=0.52$; $P=0.001$), HDL ($b=0.36$; $P=0.009$). **Conclusion:** There is an adequate chronotropic reactivity and moderate SBP increasing in MHO. MUO are under the risk of exercise induced chronotropic incompetence, which associated with acute cardiovascular events in studies.

P3-830

Determinants of Serum Interleukin 1 – Receptor Antagonist Concentrations in 12-Year-Old Children Born Small or Appropriate for Gestational Age

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Background: Elevated concentrations of interleukin 1 – receptor antagonist (IL-1Ra) have been found in adult subjects with the metabolic syndrome and type 2 diabetes as a marker of inflammation. **Objective and hypotheses:** Our aim was to study whether serum IL-1Ra associates with markers of reduced insulin sensitivity (IS) and dyslipidemia in 12-year-old children. **Method:** A total of 192 children (109 girls) were studied at the mean age of 12.25 years (range 12.01–12.73). 78 of them had been born appropriate for gestational age (AGA), 70 small for gestational age (SGA), and 44 from preeclamptic (PRE) pregnancies as AGA. Fasting serum IL-1Ra, high molecular weight adiponectin (HMW-adipo), leptin, sex-hormone binding globulin (SHBG), insulin, IGFBP1, HDL cholesterol, triglycerides and blood glucose were measured. IS was estimated by Quantitative IS Check Index (QUICKI). **Results:** The means of serum IL-1Ra, HMW-adipo, IGFBP1, SHBG, leptin, insulin, blood glucose and QUICKI did not differ between the children born SGA, AGA or from PRE pregnancies ($P>0.05$ for all). In the whole study population, serum IL-1Ra correlated negatively with SHBG and positively with triglycerides ($P<0.01$ for both). The children in the highest IL-1Ra tertile had significantly lower QUICKI ($P=0.001$), IGFBP1 ($P=0.001$), SHBG ($P<0.001$) and HDL cholesterol concentrations ($P=0.016$), and higher BMI, weight-for-height, serum insulin, leptin ($P<0.001$ for all) and triglyceride concentrations ($P=0.037$) when compared to the children in the lowest IL-1Ra tertile. Pubertal development or sex distribution did not differ significantly between the highest and lowest IL-1Ra tertile subjects. **Conclusion:** The children with the highest IL-1Ra levels had lower IS and HDL cholesterol, and higher triglycerides than those with the lowest IL-1Ra levels suggesting that high IL-1Ra concentrations associate with unfavourable metabolic features.

P3-831

Evaluation of Renal Functions in Obese Children and Adolescents with Cystatin-C and Creatinin Based GFR: is Increasing GFR Reflected Hyperfiltration and Possible Renal Damage in Future?

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Introduction: There is a growing interest in the relationship between obesity and renal damage. Chronic kidney disease is accepted as an important complication of obesity in adulthood.