

Objective To investigate cognitive function in obese Egyptian adolescents.

Methods A stratified-cluster proportionate random sampling was used to select a representative sample of 4899 pupils in preparatory school aged 12–15 year. Overweight was defined as BMI ≥ 85 th but < 95 th percentile, while obesity as ≥ 95 th BMI percentile, using Egyptian percentile. Wechsler Intelligence Scale and Executive Function test were used to assess cognitive function.

Results The prevalence of overweight was 14.9% and obesity was 6.6%. The children's mean full scale IQ was 89.54. Wechsler Intelligence Scale revealed significant differences in performance intelligence quotient (PIQ) scores between overweight and obese children. Parental educational was significantly related to total intelligence quotient (TIQ) (p 0.03). Executive function was significantly impaired in obese adolescents. Executive function was significantly lower in obese than overweight adolescents. After adjustment for age and parental education level female obese adolescents had lower cognitive function than male adolescents. BMI and waist circumference were the best predictor of impaired cognitive function in obese and overweight adolescents.

Conclusion Overweight and obesity were associated with cognitive dysfunction in adolescents.

1430 OBESITY - ADOLESCENT PROBLEM

doi:10.1136/archdischild-2012-302724.1430

¹B Stanimirov, ²M Jankovic, ³M Djordjevic. ¹Pediatrics, Health Centre Novi Sad, Novi Sad; ²Pediatrics, Health Centre Cuprija, Cuprija; ³Paediatrics, Health Centre Gornji Milanovac, Gornji Milanovac, Serbia

Background Obesity is one of the most serious health problems of the modern world.

Aim Was to assess the prevalence of obesity in adolescents, who are treated in the school infirmary "SMT" Health Center Novi Sad.

Material and Methods The study was conducted among high school students across the measurement of anthropometric parameters and calculate body mass index. The students answered questions about the quality and quantity of food and liquid intake, frequency and duration of physical activity or no activity.

Results The study lasted over two academic years (2009 to 2011.), The number of učenika. Gojaznih 92.93%: 16.23%, fed: 4.49% ideal body weight had: 72.21% of students. Rolls for meals consumed 62.47% of adolescents, the liquid entered in the form of soda 71.82%, not soda and water was used by 21.12%, adolescents consumed sweets daily: 80.85% of adolescents. Only 39.57%, daily participation in the sport, and they rarely participate 9.23%, 73.56% of them even sit in front of the TV or computer, with 2 or more hours a day.

Conclusion The consequence of obesity is sedentary lifestyle, lack of exercise, improper and inadequate and Save. Preventive measures should focus on: diet, physical activity, reducing sedentary habits, which is a prerequisite for the prevention of possible consequences made in adulthood.

1431 ATHEROSCLEROSIS RISK FACTORS IN OBESE CHILDREN AND ADOLESCENTS

doi:10.1136/archdischild-2012-302724.1431

S Atef, T Adham. *Ain Shams University, Cairo, Egypt*

Introduction Atherosclerosis is among the important long term complications and leading causes of death among obese children and adolescents. Its risk factors (RFs) include mainly: high body mass index (BMI), central obesity, smoking, lack of physical activity (PA), hypertension, hyperglycemia, elevated uric acid (UA), alanine aminotransferase (ALT), inflammation, adhesion molecules (as E-selectin) and highly sensitive (hs) CRP.

Aim of the work To determine the extent and severity of the aforementioned obesity-related atherosclerotic risk factors among school aged children and adolescents.

Subjects and methods The sample has included 98 obese (non-syndromic) and 36 non obese control subjects aged 6–16 years. A questionnaire was filled to evaluate the daily and weekly PA calculated in hours, anthropometry was done and blood pressure was measured, together with assessment of serum lipid profile and levels of fasting blood sugar, ALT, UA, E-selectin and hs CRP.

Results 55% of obese group have shown 4 or 5 atherosclerotic RFs. One or more features of abnormal lipid profile were found in 94% of obese group with 73% showing high cholesterol level. ALT and UA were significantly higher in the obese group, similarly E-selectin that was elevated in 71% of obese and hs CRP were significantly higher among obese. FBS did not show similar significant elevations. Positive correlations were found between cholesterol, E-selectin and hs CRP with BMI and waist/hip ratio.

Conclusion Most of obese children and adolescents do suffer from some risk factors that can lead to an earlier and greater risk for developing atherosclerosis.

1432 CHILDREN AND OBESITY - HOW SEVERE IS THE PROBLEM?

doi:10.1136/archdischild-2012-302724.1432

¹BE Popovici, ²M Mitrica. ¹Faculty of Medicine, 'Transilvania' University Brasov, ²Pediatrics, Faculty of Medicine 'Transilvania' University Brasov, Brasov, Romania

Introduction Childhood is more often nowadays confronting with a different pathology, specific to adulthood like obesity, diabetes mellitus, essential hypertension and hypercholesterolemia. The prevalence of these diseases is rising and cardiovascular risk factors are present even in children and the key is represented by the process of atherosclerosis.

Objective The aim of our study is to determine the presence of cardiovascular risk factors in childhood and if there is any evidence of atherosclerosis effects on the vessels.

Material and method The study had included 80 children, boys and girls, aged between 10 and 18 years. All of the children had obesity. The protocol of investigations had consisted in: blood pressure measurement (BP), body mass index calculation (BMI), blood levels of glucose, oral test of glucose tolerance, cholesterol, tryglycerides, low density lipoproteins, high density lipoproteins, echocardiography and measurement of the mass of the left ventricle, Doppler ecography of the common carotid artery and measurement of the intima-media thickness (IMTc) as a evidence of the atherosclerotic process.

Results We had found a strong and positive correlation between IMTc and BMI, systolic BP, the level of total cholesterol, tryglycerides and a negative correlation with the level of high density lipoproteins. All the subjects had had impairment of the oral test of glucose tolerance.

Conclusions The rising incidence of obesity in children is a reality. It is strongly connected with the atherosclerosis and its consequences, like early structural changes of artery, even in childhood, and therefore prevention should be a priority.

1433 VITAMIN D DEFICIENCY AND SECONDARY HYPERPARATHYROIDISM IN OBESE CHILDREN

doi:10.1136/archdischild-2012-302724.1433

¹R Ghergherechi, ²N Hazhir, ³A Tabrizi. ¹Pediatric Endocrinology, Tabriz University of Medical Sciences; ²Tabriz Children Hospital University of Medical Sciences, Tabriz, Iran

Obesity subjects individuals into metabolic and endocrine disorders. Thus obesity may increase the risk of vitamin D deficiency. This text aims at studying the prevalence of vitamin D deficiency and secondary hyperparathyroidism in obese children. In a non-randomized

case control study on 52 obese children (body mass index (BMI)>95th percentile) aged 4 to 16 years undertaken at the outpatient endocrine clinic of the Children Hospital at Tabriz University between 2009–2011. This study was conducted to compare the prevalence of vitamin D deficiency and secondary hyperparathyroidism in obese children compared with 57 non obese (BMI< 85th percentile). 109 children including 52 (50.5%) boys and 57 (49.5%) girls were studied. Most of case (76.9%) and control (42.1%) groups suffered from degrees of vitamin D deficiency. There was meaningful statistical difference between two groups considering to vitamin D deficiency and parathyroid hormone ($p = 0.001$). A negative relations was found between iPTH and vit D level ($p < 0.001$, $r = -0.2$), BMI and 25-OH vit D ($p < 0.001$, $r = -0.2$). A positive relation was observed between parathyroid hormone and BMI ($p = 0.009$, $r = 0.1$). Obese children are at high risk at vitamin D deficiency and secondary hyperparathyroidism. BMI appears to be an important risk factor for vitamin D deficiency.

1434 CLINICAL-LABORATORY PECULIARITIES IN CHILDREN WITH OBESITY AND METABOLIC SYNDROME

doi:10.1136/archdischild-2012-302724.1434

O Zagrebaeva, A Solntsava, L Viazava. *Paediatrics, Belarussian State Medical University, Minsk, Belarus*

Aim To determine clinical-laboratory peculiarities in children with obesity (O) and metabolic syndrome (MS).

Methods 119 children with O and MS were examined in the endocrinological department of University hospital (Minsk) over 2011 year. Group1 patients with O 90(75.6%) (boys/girls=50/40), mean±SD age 12.2±3, group2 MS 29(24.4%) (boys/girls=16/13), mean±SD age 14.2±2.2 yrs ($\delta = 0.04$). Insulin(Ins); total cholesterol(TC); triglycerides(TG); high-density(HDLc), low-density(LDLc) lipoprotein cholesterol; atherogenic coefficient(AC); OGTT with HOMAIR index were defined to all patients. The results were processed using the Statistica 6.1.

Results BMI boys group1 28.1±5.4 kg/m², group2 33.8±4.4 ($\delta = 0.3$); group1 girls 31.8±5.6, group2 36±5.5 ($\delta = 0.6$). The average levels of TC were in normal limits, gender and intergroup differences weren't noted ($\delta = 0.1$). TG boys and girls with MS were 1.73±0.93 and 2.02±0.6 (0.45–1.7 mmol/L), the reliable difference weren't noted ($\delta = 0.8$ and $\delta = 0.3$ respectively). HDLc was norm in all groups regardless of gender ($\delta = 0.2$). LDLc was upgraded in girls group2 3.43±0.79 (< 3.3 mmol/L) ($\delta = 0.4$). AC in boys and girls group2 was 3.31±1.16 and 3.81±0.88 (2–3) ($\delta = 0.1$). Basal and postprandial plasma glucose levels by conducting OGTT didn't exceed normal limits in group1 and group2 regardless of gender ($\delta = 0.08$). Ins boys group1 24.2±18mU/ml (2.1–22), group2 40.1±23.2 ($\delta = 0.1$); girls group1 20.8±14, group2 37.8±16.1 ($\delta = 0.6$). HOMAIR boys group1 5.16±3 (< 2.77), group2 10.87±5.9 ($\delta = 0.1$); girls group1 4.3±3, group2 8.5±3.4 ($\delta = 0.8$).

Conclusions Dyslipidemia was typical to group with MS. Insulin resistance with maintaining the basal and postrandial normoglycemia was noted by conducting OGTT in all patients regardless of gender.

1435 BIOMARKERS OF OXIDATIVE/ANTIOXIDATIVE BALANCE IN MACROSOMIA

doi:10.1136/archdischild-2012-302724.1435

M Aribi, M Haddouche. *Laboratory of Applied Molecular Biology and Immunology, Universite Abou-Bekr Belkaid Tlemcen, Tlemcen, Algeria*

Background To investigate whether the anomalies affecting the antioxidant defenses could start at birth and to check the decrease in antioxidant defenses in macrosomic newborns.

Material and Methods Thirty macrosomic and 30 sex-matched control newborns were recruited for a retrospective case-control study at the Maghnia Maternity Hospital of Tlemcen Department (Algeria).

Results The serum plasma ORAC, albumin, vitamin E, SOD, CAT and GSH-Px levels were significantly decreased in macrosomic than in control newborns, yet no difference was observed after adjustment for weight. Additionally, serum concentrations of malondialdehyde and xanthine oxidase were significantly higher in macrosomic than in controls before adjustment for weight. Moreover, macrosomia was significantly associated with low levels of ORAC (OR = 4.96, 95%CI 1.2–20.55), vitamin E (OR = 4.5, 95%CI 1.29–15.68), SOD (OR = 6.88, 95%CI 1.35–35.11) and CAT (OR = 5.67, 95%CI 1.37–23.46), and with high levels of MDA (OR = 10.29, 95%CI 2.02–52.36).

Conclusions Excessive weight could be a potential factor for decreased anti-oxidative capacity and increased oxidative stress.

1436 MATERNAL WEIGHT GAIN DURING PREGNANCY AND NEONATAL BIRTH WEIGHT: MOROCCAN DATA

doi:10.1136/archdischild-2012-302724.1436

¹A Barkat, ²L Machhoury. *Equipe de Recherche en Santé et Nutrition du Couple Mère Enfant, Faculté de Médecine et de Pharmacie de Rabat, Université Souissi; ²Faculté de Médecine et de Pharmacie de Rabat; Université Souissi, Rabat, Morocco*

Objective The objective of this study was to investigate the influence of maternal weight gain on birth weight of a population of newborns.

Patients and Methods Study including all patients who delivered in the service of the Maternity Hospital Provincial BENSLIMANE between 1 October 2010 and October 1, 2011. Three groups of patients were formed according to weight gain: less than 8kg, between 8 and 16kg and over 16kg normal. The epidemiological characteristics, obstetric complications and neonatal outcomes were analyzed. The survey is conducted on the basis of a questionnaire, for parturients and obstetric records analysis.

Results The mean birth weight was higher in the group “weight gain” ≥ 16 kg “(3782.9±595 g $p < 0.05$) and the rate of newborns weighing more than 3800g (45.5%, $p < 0.05$), unlike those weighing less than 2600g (hypotrophy) whose percentage was higher in the group “weight gain” < 8 kg (6.2% $p < 0.05$), weight gain greater than 16 kg represented a risk factor for dystocia (34.7%).

Conclusion An excessive weight gain during pregnancy has deleterious effects on neonatal trophicity. It promotes macrosomia. These data point out the interest to follow the recommendations of weight gain during pregnancy.

1437 MARKERS OF THE METABOLIC SYNDROME AND PHYSICAL ACTIVITY IN TEENAGE CHILDREN BORN PRETERM

doi:10.1136/archdischild-2012-302724.1437

¹R Tinnion, ²K Hollingsworth, ¹L Basterfield, ³M Trenell, ⁴T Cheetham, ^{1,4}N Embleton. *Institute of Health and Society; ²Newcastle Magnetic Resonance Centre; ³Institute of Cellular Medicine, Newcastle University; ⁴Newcastle upon Tyne Hospitals NHS Foundation Trust; ⁵Newcastle University, Newcastle upon Tyne, UK*

Background and Aims The worldwide increase in the Metabolic Syndrome is associated with adverse health outcomes and significant healthcare costs. Early life exposures are key factors in determining later health. Children born preterm appear to be at higher risks of developing insulin resistance. We aimed to determine the prevalence of novel metabolic biomarkers in a cohort of teenage children who were born preterm (< =34 weeks gestation) and correlate these with physical activity.

Methods We studied 24 children using standard techniques including auxology, body composition (BODPOD™), insulin resistance