

beats/minute; $P = .05$). The nondippers also presented greater end-systolic diameter (28.7 vs 25.9 mm; $P = .001$) and left-ventricular end-diastolic diameter (47.8 vs 45.1 mm; $P = .040$) and greater LVMI (90.2 vs 78.3 g/m²; $P = .044$) compared with the dippers. During stepwise multiple regression, the most important factors affecting LVMI were mean HR (day) ($b = -0.40$; $P = .001$), high-frequency variable of heart rate variability ($b = 0.38$; $P = .016$), and hemoglobin A1c: ($b = 0.67$; $P = .001$).

CONCLUSIONS: A group of normotensive diabetic adolescents with abnormal nocturnal BP reduction and impaired heart rate variation also had impaired left-ventricular function. Our findings suggest that an altered diurnal BP profile, as a result of autonomic dysfunction, may contribute to the development of left-ventricular hypertrophy in patients with type 1 diabetes mellitus.

ADIPONECTIN AND PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR γ EXPRESSION IN SUBCUTANEOUS AND OMENTAL ADIPOSE TISSUE IN CHILDREN

Submitted by Xiaonan Li

Xiaonan Li, Susanne Lindquist, Gertrud Angsten, Torbjorn Myrnas, Jun Yi, Ronghua Chen, Stenlund Hans, Tommy Olsson, Olle Hernell

INTRODUCTION: Adiponectin is an adipocyte-specific protein with insulin-sensitizing properties. Peroxisome proliferator-activated receptor γ (PPAR γ) may be involved in its gene transcription.

OBJECTIVE: The aim of this study was to compare the expression levels of the genes that encode adiponectin and PPAR γ in subcutaneous and omental adipose tissue in children in relation to age and anthropometric variables.

METHODS: Paired biopsies (from subcutaneous and omental adipose tissue) were obtained from 53 children (age: 0.2–14.0 years; BMI: 12.5–25.8 kg/m²). Messenger RNA (mRNA) levels of adiponectin and PPAR γ were measured by using reverse-transcription and quantitative real-time polymerase chain reaction.

RESULTS: Adiponectin mRNA levels in adipose tissue were positively associated with PPAR γ mRNA levels in children (subcutaneous adipose: $r = 0.73$, $P < .001$; omental adipose: $r = 0.78$, $P < .001$). In overweight children, the median adiponectin mRNA level was lower in omental adipose tissue (odds ratio: 0.51 [95% confidence interval: 0.1–2.17]) compared with subcutaneous adipose tissue (odds ratio: 1.29 [95% confidence interval: 0.16–5.08]) ($P = .032$) but not in normal-weight children ($P = .54$), and the difference remained significant after adjustment for age ($P = .045$).

CONCLUSIONS: The close association between adiponectin and PPAR γ expression supports the hypothesis

that PPAR γ is involved in adiponectin gene regulation. The fact that adiponectin expression was decreased in omental adipose tissue relative to subcutaneous adipose tissue in overweight children suggests that a risk of insulin resistance may be present in childhood, which allows such resistance to develop after a relatively short duration of overweight.

EFFECT OF BODY WEIGHT ON BONE AGE AND HORMONAL PARAMETERS IN CHILDREN WITH PREMATURE ADRENARCHE

Submitted by Asteroula Papathanasiou

Asteroula Papathanasiou, Garyfallia Lekka, Catherine Evangelopoulou, Vasilios Petrou, Papachilleos Petros, Panagiotis Nikolopoulos, Irini Paraskaki, Charalambos Hadjiathanasiou

Department of Endocrinology, Panagiotis and Aglaia Kyriakou Children's Hospital, Athens, Greece

OBJECTIVE: Our goal was to investigate the effect of body weight on bone age (BA) and hormonal features in children with benign premature adrenarche.

METHODS: We studied 221 children (175 girls, 46 boys) with premature adrenarche (pubic and/or axillary hair at <8 years of age in girls and <9 years of age in boys) and mean chronological age (CA) at presentation of 7.0 years (girls) and 7.8 years (boys). Anthropometric features and laboratory data (dehydroepiandrosterone sulfate [DHEA-S], 17-hydroxyprogesterone, Δ^4 -androstenedione [Δ^4 -A], testosterone, estradiol, insulin-like growth factor I [IGF-I], cholesterol, triglycerides, high- and low-density lipoprotein cholesterol, and BA) were recorded. The population was divided into 3 groups according to BMI: (1) normal weight, (2) overweight (BMI: 85th–95th percentile), and (3) obese (BMI: >95 th percentile). Children with late-onset congenital adrenal hyperplasia were excluded from study.

RESULTS: Mean CA of adrenarche was 6.3 years (girls) and 7.1 years (boys). The percentages of overweight and obese children was significantly higher than those reported in the general population of children in Greece. Obese children had significantly more advanced BA compared with overweight and normal-weight children. Higher levels of DHEA-S and Δ^4 -A were observed in overweight and obese girls compared with normal-weight girls, whereas higher levels of DHEA-S, testosterone, and IGF-I were observed in overweight and obese boys (Table 1). No statistically significant difference was observed between the 3 groups in the levels of 17-hydroxyprogesterone, estradiol, cholesterol, triglycerides, or high- and low-density lipoprotein cholesterol.

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