

serum triglycerides, low level of high-density lipoprotein cholesterol), systemic arterial hypertension, and others (eg, hypertransaminemia, hyperuricemia, orthopedic lesions) were the most common.

CONCLUSIONS: Obesity in children and adolescents is a severe world public health problem. Obese children and adolescents frequently had associated comorbidity. It is necessary to improve health, juridical, and educational world policies that prevent and support the treatment of obesity in early life.

THYROID FUNCTION AND GHRELIN AND LEPTIN LEVELS IN OBESE CHILDREN AND ADOLESCENTS WITH AND WITHOUT INSULIN RESISTANCE

Submitted by Charilaos Stylianou

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INTRODUCTION: Thyroid hormones ghrelin, leptin, and insulin are implicated in energy metabolism.

OBJECTIVE: The objective of this study was to investigate any relationship between thyroid function and ghrelin and leptin levels in selected euthyroid (thyrotropin: 0.35–4.94; free thyroxine [fT4]: 0.8–1.8; no autoimmune thyroiditis or iodine deficiency, no medications intake) obese children and adolescents with and without insulin resistance (IR).

METHODS: Forty obese children and 40 obese adolescents were enrolled. BMI, percentage of body fat, fasting glucose, insulin, ghrelin, leptin, thyrotropin, free triiodothyronine (fT3), and fT4 were measured. IR was estimated with homeostasis model assessment of IR index. The Mann-Whitney *U* test for independent samples was applied. Correlations were assessed by the Spearman coefficient.

RESULTS: In adolescents, fT3 levels were positively correlated with insulin and homeostasis model assessment of IR. In children, fT4 levels were negatively correlated with BMI and percentage of body fat (Table 1).

TABLE 1. Thyroid Function and Ghrelin and Leptin Levels in Obese Children and Adolescents With and Without Insulin Resistance

	Obese Children			Obese Adolescents		
	IR	NIR	<i>P</i>	IR	NIR	<i>P</i>
<i>n</i>	20	20		20	20	
BMI, kg/m ²	28.87 ± 3.84	27.11 ± 4.53	.121	30.54 ± 4.74	29.43 ± 3.87	.678
Body fat, %	35.68 ± 4.71	33.28 ± 4.98	.157	35.59 ± 6.01	34.33 ± 5.14	.461
Homeostasis model assessment, IR	5.00 ± 4.04	1.55 ± 0.64	.000	4.51 ± 1.53	1.80 ± 0.56	.000
Insulin, μU/mL	22.53 ± 15.02	7.33 ± 2.64	.000	20.04 ± 5.76	9.01 ± 2.65	.000
Ghrelin, pmol/L	831.29 ± 379.19	902.96 ± 360.49	.355	860.12 ± 289.89	1102.09 ± 366.10	.043
Leptin, ng/mL	36.22 ± 14.94	35.20 ± 23.43	.301	42.31 ± 21.81	34.75 ± 17.93	.221

	Obese Children			Obese Adolescents		
	IR	NIR	<i>P</i>	IR	NIR	<i>P</i>
Thyrotropin, μU/mL	2.28 ± 1.22	2.15 ± 0.75	.779	2.20 ± 1.15	2.06 ± 1.24	.659
fT3, pg/mL	4.61 ± 0.92	4.59 ± 0.64	.989	4.19 ± 0.68	4.12 ± 1.08	.529
fT4, ng/dL	1.32 ± 0.14	1.37 ± 0.22	.495	1.22 ± 0.12	1.29 ± 0.17	.398

CONCLUSIONS: The observed positive correlation between IR and fT3 in adolescents might indicate an interplay between thyroid function and IR. Ghrelin levels are negatively affected by IR but not directly associated with thyroid hormone concentrations.

Pediatric Research

ROLE OF NERVE GROWTH FACTOR IN ALLERGIC AND INFLAMMATORY LUNG DISEASES

Submitted by Basma Abdelmoez

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INTRODUCTION: Nerve growth factor (NGF) is a neurotrophin that exerts an important role in the development and functions of the central and peripheral nervous system, as it was originally discovered for its properties of simulating growth and differentiation of neurons; however, it was recently documented that several immune cells, such as mast cells, lymphocytes, and eosinophils, produce, store, and release NGF. Neurotrophins, including NGF, are constitutively expressed by resident lung cells and produced in increasing quantities by immune cells that invade the airways under inflammatory conditions. Furthermore, NGF appears as a promoter of allergic airway inflammation by increasing eosinophil and lymphocyte recruitment into the lungs. Neurotrophin receptors are expressed on several immune cells, including mast cells, T cells, B cells, and macrophages.

OBJECTIVE: The objective of this study was to clarify the role of NGF in allergic and inflammatory lung diseases.

METHODS: Our study was conducted of 90 children who attended the outpatient pediatric clinic or were admitted to the inpatient pediatric department of Elminia University Hospital. They were classified into 3 groups as follows: group 1, 35 children with asthma during the acute attack; group 2, 35 children with severe inflammatory lung disease and bronchopneumonia; group 3, 20 seemingly healthy children who were age and gender matched to the children with disease. For all children, the following were done: careful history taking, thorough clinical examination, chest radiograph,

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