LIPIDOGRAIM, LEPTIN-AND ADIPONECTINAEMIA IN TEENAGERS AND ADOLESCENTS WITH METABOLIC SYNDROM

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Introduction.
Obesity leads to the development of hypertension, cardiovascular diseases, disorders of carbohydrate metabolism, which are components of the metabolic syndrome. The nature of the changes of lipid homeostasis, leptin and adiponectin levels in relation to the severity of metabolic syndrome are not well understood.

Objectives:

48 people with metabolic syndrome (24, 16-18 years old and 24 young adults (19-22 years)) are recruited and classified according to body mass index and homeostasis model of assessment-insulin resistance index. The circulating concentrations of leptin, adiponectin and of several metabolic markers of obesity and insulin resistance are determined by standard methods.

Methods:

In metabolic syndrome in adolescents and young people the level of leptin is significantly increased and does not depend from sex and age. The highest level of leptin in combination with the maximum circumference of the waist have patients with insulin resistance. A positive correlation relationship was established between leptin and atherogenic lipids, negative correlation between leptin and adiponectin, the level of atherogenic lipids and adiponectin.

Perhaps, hyperleptinemia and hypoadiponectinemia, as well as insulin resistance, can be attributed to one of the components of metabolic syndrome.

Results:

In metabolic syndrome in adolescents and young people the level of leptin is significantly increased and does not depend from sex and age. The highest level of leptin in combination with the maximum circumference of the waist have patients with insulin resistance. A positive correlation relationship was established between leptin and atherogenic lipids, negative correlation between leptin and adiponectin, the level of atherogenic lipids and adiponectin.

Perhaps, hyperleptinemia and hypoadiponectinemia, as well as insulin resistance, can be attributed to one of the components of metabolic syndrome.

Conclusions:

Type 2b atherogenic dyslipidemia (hypertriglyceridemia, hypercholesterolemia, high LDL and decrease HDL). Leptin is significantly different in the 1st and in the 2nd group and in the control (48.2 ± 11.6 ng/ml, 59.1 ± 17.4 ng ml and 11.2 ± 2.3 ng/ml, respectively). Significantly lower concentrations of adiponectin are detected in patients of 2 group compared with adolescents and the control group, respectively 6.1 ± 3.9 ng/ml, 8.9 ± 4.2 ng/ml and 17.1 ± 4.9 ng/ml (p <0.05).

Table1. Indexes in children and adolescents with metabolic syndrome

<table>
<thead>
<tr>
<th>Characteristic of the study population</th>
<th>Control group (n=24)</th>
<th>1 group (n=24)</th>
<th>2 group (n=24)</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholesterol (mmol/l)</td>
<td>4.11±0.12</td>
<td>6.89±0.17</td>
<td>7.21±0.18</td>
<td>pc-1&lt;0.001</td>
</tr>
<tr>
<td>Triglycerides (mmol/l)</td>
<td>0.76±0.04</td>
<td>3.90±0.09</td>
<td>4.12±0.08</td>
<td>pc-2&lt;0.05</td>
</tr>
<tr>
<td>LDL (mmol/l)</td>
<td>2.10±0.07</td>
<td>5.10±0.05</td>
<td>5.60±0.06</td>
<td>pc-2&lt;0.001</td>
</tr>
<tr>
<td>HDL (mmol/l)</td>
<td>1.44±0.06</td>
<td>1.02±0.09</td>
<td>0.90±0.06</td>
<td>pc-2&lt;0.001</td>
</tr>
<tr>
<td>Leptin (ng/ml)</td>
<td>11.21±2.3</td>
<td>48.2±11.5</td>
<td>59.1±17.4</td>
<td>pc-2&lt;0.001</td>
</tr>
<tr>
<td>Adiponectin (µg/ml)</td>
<td>17.1±4.9</td>
<td>6.9±4.2</td>
<td>6.1±3.9</td>
<td>pc-2&lt;0.05</td>
</tr>
</tbody>
</table>

Data are presented as mean ± SD.

References:


Conflict of Interest: The authors declare no conflict of interest.

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