Impact of Elevated Age and Sex-Adjusted Body Mass

Table. Best ‘Univariate’ Predictors of Insulin Sensitivity

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>t Ratio</th>
<th>Pr &gt;</th>
<th>p2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg)</td>
<td>-0.020</td>
<td>-11.47</td>
<td>&lt;0.0001</td>
<td>0.37</td>
</tr>
<tr>
<td>BMI</td>
<td>0.062</td>
<td>12.77</td>
<td>&lt;0.0001</td>
<td>0.40</td>
</tr>
<tr>
<td>Head % Fat</td>
<td>-0.040</td>
<td>-12.52</td>
<td>&lt;0.0001</td>
<td>0.41</td>
</tr>
<tr>
<td>Upper Body Fat (kg)</td>
<td>-0.044</td>
<td>-12.50</td>
<td>&lt;0.0001</td>
<td>0.41</td>
</tr>
<tr>
<td>Waist (cm)</td>
<td>-0.067</td>
<td>-12.78</td>
<td>&lt;0.0001</td>
<td>0.42</td>
</tr>
</tbody>
</table>

- Age and gender were forced into every model.

**T124-198**

Additive Gene-Gene Interaction Between CYP7A1 and Apolipoprotein E as Genetic Determinants of Low-Density Lipoprotein Cholesterol-Lowering Response to Atorvastatin

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**Background:** The Wausau SCHOOL Project is a community-based effort to assess the frequency of cardiovascular risk factors in students in the Wausau School District. **Objective:** To test this hypothesis, we examined a promoter polymorphism (A–290C) in **Methods:** Age and sex adjusted BMI (zBMI), fasting plasma insulin, glucose levels and hepatic magnetic resonance lipid profiles (LipoScience®) was measured in 225 randomly selected students (110 in 2nd grade and 125 in 11th grade). Overweight was defined as BMI > age 50th percentile based on 2000 CDC norms. **Results:** Over 31% of the students were classified as overweight (30.6% in 2nd grade and 32.5% in 11th grade), HOMA-IR values were significantly higher for 11th graders than for 2nd graders (2.18±2.65 vs. 1.22±1.07, p<0.01). HOMA-IR values were also significantly higher for females than for males (2.04±2.66 vs. 1.33±0.94, p<0.05). Those with zBMI above the 50th percentile had significantly higher levels of total cholesterol (192.0±33.6 vs. 178.2±28.5, p<0.01), LDL (123.4±28.8 vs. 117.2±25.7, p<0.01), triglycerides (118.6±89.7 vs. 86.4±33.5, p<0.001), LDL particle number (1299.8±379.5 vs. 1135±248.0, p<0.001), and HOMA-IR (2.61±3.47 vs. 1.32±0.99, p<0.001), while HDL levels were lower (43.7±10.0 vs. 47.5±9.7, p<0.01). There were no significant differences in LDL particle size. **Conclusions:** A significant percentage of children and adolescents are overweight. IR increases significantly with age and zBMI and is associated with an atherogenic lipid profile characterized by an increase in the number of small LDL particles and TG levels and lower HDL levels, similar to that seen in adults.

**T124-199**

Plasma Sphingomyelin Levels in Coronalary Artery Disease: A Relationship With Serum Triglycerides and Apolipoprotein B and Other Risk Factors

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**Objective**

Sphingomyelin (SM) is one of the major phospholipids in the cell membrane and in lipoproteins. In human plasma, SM is mainly found in atherogenic lipoproteins, thus, high levels of SM may promote atherogenesis.

**Methods**

To further evaluate the role of SM in atherosclerosis, we measured plasma SM levels in 1,102 patients with coronary artery disease (CAD) and 444 healthy controls.

**Results**

We demonstrated that plasma SM in CAD patients was significantly higher than in controls (51.8 versus 44.9 mg/dl; p < 0.001). Logistic regression analysis showed that plasma SM was significantly associated with incidence of CAD (OR: 4.9, 95% CI 3.4 – 7.0, for subjects in the fourth quartile in comparison to subjects in the first quartile). Plasma SM levels showed a strongest and significant correlation with plasma apolipoprotein B (apoB) (r=0.34, p < 0.001) and triglycerides -levels (r=0.31, p < 0.001) in all subjects, respectively. The association between SM and incidence of CAD remained independently significant after adjustment for most potential confounders including apoB and triglyceride, such that patients within the fourth quartile of SM revealed a 6.0 fold (95% CI 3.4 – 7.0) increase of risk.

**Conclusion**

These results reveal that the proatherogenic potency of human plasma SM levels, as shown in this study by significantly elevated levels of SM in patients, could be related to abnormal apoB-containing or triglyceride-rich lipoprotein metabolism.