Predicators of second-generation antipsychotic-induced weight gain: a longitudinal study with antipsychotic-naïve patients


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Introduction

• Weight gain (WG) is a common adverse event of second-generation antipsychotics (SGAs) associated with a significant increase in morbidity, social stigma, and treatment non-adherence [1, 2].

• Retrospective studies report a higher risk of WG in the first 3 months of treatment. Predisposing factors include premorbid BMI, female sex, younger age, and being diagnosed with a psychiatric disorder [3].

Objectives

• To assess short-term (i.e. baseline to 6 weeks) and medium-term (6 weeks to 6 months) WG in a cohort of paediatric and adult patients naïve to SGAs.

• To study the differential predictive value of sociodemographic variables and of anthropometric and metabolic variables at baseline associated with the short- and medium-term WG.

Methods

• Six-month longitudinal, observational, multicenter study.

• N=208 antipsychotic-naïve pediatric and adult patients (lifetime exposure to SGAs fewer than 10 days)

• Assessments: anthropometric changes within two time periods:

  - Basal - 6-weeks (short-term): weight and BMI changes 6 weeks - 6 months (medium-term): weight and BMI changes

• Metabolic markers:

  - Total Cholesterol
  - LDL-cholesterol
  - HDL-cholesterol
  - HbA1c
  - Leptin
  - Insulin
  - Adiponectin
  - Triglycerides

• Two multivariate regression analyses were performed to estimate the effect of sociodemographic, anthropometric and metabolic factors at baseline on short- and medium-term WG.

Results

Sociodemographic Variables

<table>
<thead>
<tr>
<th>N</th>
<th>208</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Mean 37.87±10.48 years</td>
</tr>
<tr>
<td>Males</td>
<td>56%</td>
</tr>
<tr>
<td>Psychotic disorder</td>
<td>56.8%</td>
</tr>
</tbody>
</table>

Table 1: Change BMI baseline-6weeks regression model

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (females)</td>
<td>-0.454</td>
<td>0.263</td>
<td>-1.73</td>
<td>0.084</td>
</tr>
<tr>
<td>BMI_Basal</td>
<td>-0.126</td>
<td>0.156</td>
<td>-0.81</td>
<td>0.420</td>
</tr>
<tr>
<td>Leptin_Basal</td>
<td>0.106</td>
<td>0.126</td>
<td>0.83</td>
<td>0.409</td>
</tr>
<tr>
<td>Whole model adjusted</td>
<td>0.342</td>
<td>0.117</td>
<td>2.91</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Dependent Variable: Change BMI Baseline to 6 weeks

*After adjusting the model for age, sex, baseline BMI, leptin, glucose, insulin, HbA1c, adiponectin, cholesterol, and triglycerides.

Table 2: Change BMI 6 weeks-6 months regression model

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>-0.226</td>
<td>0.195</td>
<td>-1.15</td>
<td>0.246</td>
</tr>
<tr>
<td>Adiponectin Basal</td>
<td>0.030</td>
<td>0.030</td>
<td>1.08</td>
<td>0.283</td>
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<tr>
<td>Leptin Basal</td>
<td>0.020</td>
<td>0.020</td>
<td>1.04</td>
<td>0.298</td>
</tr>
<tr>
<td>Whole model adjusted</td>
<td>0.210</td>
<td>0.044</td>
<td>4.88</td>
<td>*0.022</td>
</tr>
</tbody>
</table>

Dependent Variable: Change BMI 6 weeks-6 months

*After adjusting the model for age, sex, baseline BMI, leptin, glucose, insulin, HbA1c, adiponectin, cholesterol, and triglycerides.

Conclusions

- Most of the weight gain during the six month follow-up takes place in the first 6 weeks of treatment.
- In the short-term period male gender, basal BMI, and leptin levels predict WG.
- In medium-term basal leptin and adiponectin levels predict WG.
- Most WG can not be explained by the variables studied.

References


Table 3: Mean Daily Weight Change (g)