Gestational Diabetes: The influence of maternal weight gain on the newborn weight

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Introduction

• In order to control hyperglycemia in patients with gestational diabetes it is recommended weight control and diet with low glycemic index.
• It is concerned that insufficient or excessive weight gain can influence on newborns small for gestational age (SGA) or large for gestational age.

Objective

• To analyze on the population of women with gestational diabetes the gestational weight gain and its effects on the newborns weight according to the initial body mass index.

Methods

• Patients with gestational diabetes and single pregnancy attended at the Diabetes Center at UNIFESP-Brazil.
• The body mass index was classified according to the World Health Organization criteria: Underweight (<18), Normal Range (18 - 24.9), Overweight (25 - 29.9) and Obese (>30). Weight gain was considered according to the NIH criteria for each range, considering adequate weight gain: U: 9.5 a 18Kg, N: 11.5 a 16 Kg, Ov: 7 a 11Kg, O: 5 a 9 Kg.

Methods

• Lower and higher values were considered insufficient or excessive.
• Considering the initial BMI, the newborn weight was evaluated according to the maternal weight gain.

Results

• 413 pregnancies were analyzed, 1 was underweight, 92 normal range, 142 overweight and 178 obese.
• 128 had insufficient weight gain, 130 normal weight gain and 155 excessive weight gain.

Results – baseline characteristics

<table>
<thead>
<tr>
<th>Age</th>
<th>SGA</th>
<th>NGA</th>
<th>LGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal weight</td>
<td>33.6±6.3</td>
<td>22.7±1.7</td>
<td>11.8±4.5</td>
</tr>
<tr>
<td>Overweight</td>
<td>34.3±5.3</td>
<td>34.9±4.7</td>
<td>9.1±5.9</td>
</tr>
<tr>
<td>Obese</td>
<td>32.8±5.5</td>
<td>27.5±1.5</td>
<td>10.5±5.2</td>
</tr>
</tbody>
</table>

*p<0.05 ANOVA

<table>
<thead>
<tr>
<th>Age</th>
<th>Insufficient</th>
<th>SGA</th>
<th>%</th>
<th>LGA</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>55</td>
<td>3</td>
<td>5.4</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>Overweight</td>
<td>32</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Obese</td>
<td>41</td>
<td>5</td>
<td>12</td>
<td>2</td>
<td>4.8</td>
</tr>
</tbody>
</table>

*p<0.05 Pearson

Outcome

• Patients with overweight and obesity who had excessive weight gain had more newborns LGA.
• It was’t observed a relation between low weight gain and SGA.

-2 normal weight women had SGA and excessive weight gain babies were hypertensives.
-2 overweight women who had LGA and insufficient weight gain had hyperglycemia.