Serum Vitamin D Levels in Women With Gestational Diabetes

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Background

Insulin resistance and diabetes mellitus are associated with decreased serum vitamin D level (1,2). This study was performed to evaluate the serum vitamin D levels in patients with gestational diabetes mellitus (GDM).

Methods

This study consisted of 38 patients with GDM who followed up in Haseki Training and Research Hospital's Endocrinology outpatient clinic. GDM was diagnosed with 50 g (if postprandial 1. hour > 130-199 mg/dl) and then 100 g oral glucose tolerance test (OGTT) in 24-28 gestational weeks. The cut off criteria for GDM were as following at least two of results as: fasting blood glucose: 95 mg/dl, postprandial 1. hour: 180 mg/dl, 2. hour: 155 mg/dl, 3. hour: 140 mg/dl. Serum vitamin D level and biochemical parameters were analyzed. Patients were divided into two groups as Group A (vitamin D<20 ng/ml) and Group B (>20 ng/ml).

<table>
<thead>
<tr>
<th></th>
<th>Group A - GDM with initial vitamin D ≤ 20 ng/ml (n: 17)</th>
<th>Group B - GDM with initial vitamin D &gt; 20 ng/ml (n: 21)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (kg/m\textsuperscript{2})</td>
<td>28.37 ± 4.06</td>
<td>25.62 ± 5.60</td>
<td>0.033</td>
</tr>
<tr>
<td>Fasting blood glucose (mg/dl)</td>
<td>96.17 ± 13.51</td>
<td>89.93 ± 10.63</td>
<td>0.341</td>
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<tr>
<td>HbA1c in peripartum (%)</td>
<td>5.51 ± 0.54</td>
<td>5.04 ± 0.48</td>
<td>0.006</td>
</tr>
<tr>
<td>Insulin (UI/l)</td>
<td>9.21 ± 3.12</td>
<td>12.44 ± 4.95</td>
<td>0.027</td>
</tr>
</tbody>
</table>

Table 1: Comparison of metabolic and laboratory parameters of study groups

Conclusion

Vitamin D has a close relationship with BMI and peripartum HbA1c value. Moreover, decreased serum vitamin D level was correlates with higher BMI and HbA1c. Serum vitamin D level should be analyzed and followed up in patients during pregnancy.

Results

Mean BMI was 28.37 ± 4.02 in Group A, 25.62 ± 5.60 in Group B, (p: 0.033). Mean peripartum HbA1c was 5.51 ± 0.54 % in Group A and 5.04 ± 0.48 % in Group B, (p: 0.006). There was no any statistical difference in other biochemical parameters. Vitamin D was found to be negatively correlated with BMI (r: -0.377, p: 0.03) and peripartum HbA1c (r: -0.424, p: 0.014).

References

1. Lapillonne A. Vitamin D deficiency during pregnancy may impair maternal and fetal outcomes. Med Hypotheses.