Impact of Gestational Diabetes Mellitus on Pregnancy Outcomes

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Abstract: Objective: Analysis of the impact of gestational diabetes mellitus on pregnancy outcomes, including pregnant and lying-in women and newborns. Methods: There are 135 cases of patients with gestational diabetes mellitus. 135 normal pregnant women in the same period are selected as the control group. Complications of pregnant and lying-in women and neonatal clinical conditions are compared between the two groups. Results: Compared with the control group, except that there is no significant difference in the statistical level of postpartum hemorrhage of pregnant women when P<0.05, pregnant hypertension, polyhydramnios, premature delivery and operation delivery all have significant differences (P<0.05). Compared with the control group, neonatal hypoglycemia, macrosomia, hyperbilirubinemia, neonatal referral and fetal distress were all statistically significant with P <0.05. Conclusion: It is necessary to strengthen the clinical diagnosis and intervention of gestational diabetes mellitus, reduce its potential risks and hazards to mothers and infants, and ensure the safety of pregnant and lying-in women.

Keywrod: Gestational Diabetes Mellitus, Impact, Pregnancy Outcomes


1 Introduction

Gestational diabetes mellitus is caused by abnormal glucose metabolism during pregnancy. Gestational diabetes mellitus (GDM) morbidity ranges from 1% to 14%, which is a global statistical rate of this disease [1]. The morbidity of GDM in China ranges from 1% to 5%. Pregnant women with GDM are generally not easy to detect the symptoms, which are usually detected in pregnancy screening, generally can be identified by obvious “three more and one less” [1-2]. “Three more and one less” refers to polydipsia, polyphagia, diuresis and less weight. Gestational diabetes mellitus is detrimental to the growth and development of individuals and infants, which seriously affects health. The impact of gestational diabetes mellitus on pregnancy outcomes is analyzed in this paper.

2 Materials and Methods

2.1 Materials

The subjects of this study were the parturients who visited the obstetrics clinic of our hospital from January 2012 to December 2013. These parturients all had the historical data of regular prenatal examinations. There are 135 patients with gestational diabetes mellitus, including 120 primipara and 15 multipara, with an average age of 29.5 years. 135 normal pregnant women in the same period are selected as the control group, whose ages range from 22 to 37 years old, including 128 cases of primipara and 7 cases of multipara. For the two research groups,
statistical analysis of other conditions of the study subjects at the level of \( P < 0.05 \) all have shown no significant difference.

### 2.2 Methods

Glucose tolerance test was used by OGTT test. The test is performed after 24 weeks of pregnancy. Dietary control, hospitalization during pregnancy and other cure methods are adopted. The blood glucose level of parturients is controlled at the standard level: Postprandial blood glucose should be controlled at < 6.7 mmol/L, and fasting blood glucose should be kept at < 5.6 mmol/L.

### 2.3 Statistical Analysis

SPSS 15.0 is used to analyze the data of this study, and \( \chi^2 \) test is performed. The test level is determined as \( p < 0.05 \).

#### 3 Results

### 3.1 Observation of the Clinical Complications of Gestational Diabetes Mellitus in Pregnant Women

Among the pregnant women with gestational diabetes mellitus in the observation group, there are 27 cases of hypertension, 17 cases of polyhydramnios, 22 cases of preterm labor, 82 cases of needing surgery for delivery, and 9 cases of postpartum hemorrhage. Compared with the control group, except that there is no significant difference in the statistical level of postpartum hemorrhage at \( P<0.05 \), pregnant hypertension, polyhydramnios, premature delivery and operative delivery all have significant differences (\( P<0.05 \)).

#### Table 1 Conditions of Clinical Complications of Parturients in Observation Group and Control Group [\( n (\%) \)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Pregnant Hypertension</th>
<th>Polyhydramnios</th>
<th>preterm delivery</th>
<th>Operative Delivery</th>
<th>Postpartum Hemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation Group</td>
<td>135</td>
<td>27 (20%)</td>
<td>17 (12.59%)</td>
<td>22 (16.3%)</td>
<td>82 (60.74%)</td>
<td>9 (6.67%)</td>
</tr>
<tr>
<td>Control Group</td>
<td>135</td>
<td>13 (9.63%)</td>
<td>6 (4.44%)</td>
<td>10(7.41%)</td>
<td>37(27.41%)</td>
<td>7(5.19%)</td>
</tr>
<tr>
<td>P Value</td>
<td></td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&gt;0.05 )</td>
</tr>
</tbody>
</table>

#### 3.2 Analysis of Impact of GDM on Perinatal Infants

In observation group, among the perinatal infants, there are 15 cases of neonatal hypoglycemia, 41 cases of macrosomia, 5 cases of neonatal asphyxia, 17 cases of hyperbilirubinemia, 23 cases of neonatal referral, 9 cases of fetal distress, and 4 cases of perinatal death.

Neonatal hypoglycemia, macrosomia, hyperbilirubinemia, neonatal referral and fetal distress are all statistically significant with \( P <0.05 \) compared with the control group. In addition, although there is no statistical significance in terms of neonatal asphyxia and mortality, pregnant women with GDM in the observation group have a higher perinatal babies prevalence than those in the control group.

#### Table 2 Comparison of Perinatal Babies Prevalence in Observation Group and Control Group [\( n (\%) \)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Neonatal Hypoglycemia</th>
<th>Macrosomia</th>
<th>Neonatal Asphyxia</th>
<th>Hyperbilirubinemia</th>
<th>Neonatal Referral</th>
<th>Fetal Distress</th>
<th>Perinatal Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation Group</td>
<td>135</td>
<td>15 (11.11%)</td>
<td>41 (30.37%)</td>
<td>5 (3.70%)</td>
<td>17 (12.59%)</td>
<td>23 (17.04%)</td>
<td>9 (6.67%)</td>
<td>4 (2.96%)</td>
</tr>
<tr>
<td>Control Group</td>
<td>135</td>
<td>2 (1.48%)</td>
<td>11 (8.15%)</td>
<td>2 (1.48%)</td>
<td>9 (6.67%)</td>
<td>4 (2.96%)</td>
<td>3 (2.22%)</td>
<td>2 (1.48%)</td>
</tr>
<tr>
<td>P Value</td>
<td></td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&gt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&lt;0.05 )</td>
<td>( p&gt;0.05 )</td>
</tr>
</tbody>
</table>
4 Discussion

In this study, the incidence of pregnant hypertension, polyhydramnios [5-7], premature delivery and operation delivery in the observation group is significantly higher than that in the control group, with significant differences (P<0.05), while there is no significant difference in the statistical level of postpartum hemorrhage (P<0.05). Similarly, through the analysis of the influence of GDM on newborns, it is found that compared with the control group, the neonatal hypoglycemia [7-10], macrosomia, hyperbilirubinemia, neonatal referral and fetal distress are all statistically significant with P <0.05. In addition, although there is no statistical significance in terms of neonatal asphyxia and mortality, pregnant women with GDM in the observation group have a higher prevalence than those in the control group, which indicates that The impact of GDM on the health of pregnant and lying-in women and perinatal babies is critical. Pregnant hypertension, polyhydramnios and premature delivery are common clinical complications. Therefore, early prevention, early detection and early treatment should be carried out. The pregnancy improvement can be achieved through strengthening the health education and publicity for women of childbearing age, improving the individual's initiative consciousness, and attracting the attention of the majority of medical staff [4-7].

References


