The Influence of Gestational Diabetes Management on Pregnancy Outcome

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Abstract: The clinical course of gestational diabetes mellitus is complex, which is harmful to mothers and children. Through data collection and control, it was found that through health education, diet and exercise guidance, insulin therapy, the incidence of pregnancy hypertension, polyhydramnios, cesarean section, postpartum hemorrhage in pregnant women was lower, and the incidence of macrosomia, fetal growth restriction, respiratory distress syndrome, hypoglycemia in perinatal infants was also lower. Objective: To explore the effect of pregnancy-induced diabetes mellitus on the outcome of pregnancy-induced vibration after pregnancy management. Patients with gestational diabetes were randomly divided into intervention group and control group. The intervention group was administered during pregnancy, and the control group was not administered during pregnancy. The pregnancy outcomes of the two groups were compared. The probability of cesarean section, premature delivery, genital tract infection, postpartum hemorrhage, fetal distress and macrosomia in the control group was slightly higher than that of the experimental group. Conclusion: Pregnancy-induced diabetes patients undergoing pregnancy management during pregnancy and controlling blood glucose levels can effectively improve the outcome of pregnancy-induced hypertension, reduce the probability of maternal and child complications, and improve maternal and child health and quality of life.

1. Introduction

Gestational diabetes is the first occurrence or discovery of diabetes during pregnancy, with an incidence of 1% to 5% [1]. It is a common gestational complication. The clinical course of the disease is complicated, and it is harmful to both mother and child. Pregnant women are prone to pregnancy-induced hypertension, abortion, polyhydramnios, infection, premature delivery, dystocia, increased chance of surgery, huge children, fetal growth restriction, deformed children. Neonatal respiratory distress syndrome, neonatal hypoglycemia rate increased, the implementation of pregnancy management and full-course nursing intervention for GDM pregnant women, can effectively reduce the incidence of maternal and child complications [2]. About 1.2 million to 1.4 million pregnant women in China suffer from gestational diabetes every year, which is extremely harmful to maternal and child health [3]. For pregnant women, it can lead to high blood sugar, high blood pressure, urinary tract infection, headache, premature birth, etc. About 30% of patients with gestational diabetes will also become chronic type 2 diabetes after 5 to 10 years. For children, it may cause fetal congenital malformation, neonatal hypoglycemia and respiratory distress, stillbirth, excessive amniotic fluid, fetal giant, and great risk of obesity, diabetes, hypertension and coronary heart disease in the future [4]. As long as the glucose absorbed by the fetus during pregnancy comes from the pregnant woman, the blood glucose demand will increase, and the effect of various hormones synthesized by the placenta will lead to insulin resistance and relative insufficient insulin secretion, which will eventually lead to the occurrence of GDM [5].

Diabetes mellitus is a chronic disease with a long course of disease. It is generally neglected in the absence of sudden complications for women with mild symptoms. The health of mothers and children and the occurrence of adverse pregnancy outcomes are directly related to the quality of blood sugar control. Therefore, systematic intervention in blood sugar management during

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pregnancy is particularly important [6]. Gestational diabetes mellitus (GDM) refers to women who do not suffer from diabetes before pregnancy, but during pregnancy due to changes in body metabolism, the blood sugar is too high, which usually occurs in the middle and late pregnancy. If a woman's blood sugar is too high during pregnancy, it is not only harmful to pregnant women, but also a serious short-term and long-term impact on the fetus [7]. The main symptoms of gestational diabetes mellitus are high blood sugar level. The incidence of gestational diabetes mellitus has increased significantly in recent years [8]. Gestational diabetes can cause serious harm to maternal and child health. It is not only easy to cause obstetric complications, abnormal signs of infants, or even fatal fetuses, and the probability of obesity and diabetes in mothers and children will increase significantly in the future [9]. In gestational diabetes, 1 in 3 people develop type 2 diabetes within 5 to 10 years after birth, 1/3 of people have abnormal glucose tolerance, and 1 / 3 of people return to normal under intervention [10]. Therefore, the management of GDM during pregnancy can effectively control the blood glucose during pregnancy, which has a positive effect on improving the outcome of pregnancy and reducing the cesarean section rate.

2. Materials and Methods

Hyperglycemia will cause serious damage to the pregnant women during pregnancy and fetal health in the near future, gestational diabetes can cause a severe vascular lesions of the pregnant women, main symptom is thickening of vascular endothelial cells, blood, etc., are predisposed to pregnancy-induced hypertension syndrome, if concurrent high blood pressure, easy to cause fetal intrauterine hypoxia, limited growth, pregnant women, kidney failure, etc. Pregnant women with high blood sugar, amniotic membrane will stimulate the secretion of amniotic fluid, which is prone to premature birth. In addition, high blood glucose in pregnant women can also indirectly lead to long-term excessive blood glucose in the fetus, excessive development in the uterus, abnormal accumulation of fat, and the formation of giant baby. In the process of birth, giant baby will cause excessive expansion of the uterus, which is extremely likely to cause postpartum hemorrhage in pregnant women. Moreover, the long-term incidence of diabetes, obesity and other chronic diseases in these fetuses is significantly higher than that in normal children, and this effect will continue for generations. The incidence of gestational hypertension, cesarean section and polyhydramnios was higher in the observation group than in the control group. There was no significant difference between the observation group and the control group (Table 1). In the early stage of gestational diabetes mellitus, there are usually no obvious symptoms and signs. The only diagnostic method is to carry out diabetes screening in stages. Especially for pregnant women with high risk factors, blood sugar or glucose tolerance screening should be started from the first maternal screening, so as to promptly diagnose, treat and intervene to improve the maternal and infant outcomes of GDM.

Table 1 Complications of pregnant women

Group	Number of cases	Hypertension in pregnancy	Amniotic fluid	Cesarean section	Postpartum hemorrhage
Observation group	88	11	7	61	9
Control group	75	8	6	53	8

Health education is an important part of GDM care. Throughout pregnancy, health education improves the understanding of diabetes during pregnancy, and can guide the whole habits of pregnancy, proper diet, proper exercise and the correct understanding of the importance of maintaining normal blood sugar. , thereby reducing the use of insulin. Avoid the occurrence of maternal and child complications. Significantly reduce the incidence of various obstetric complications. The study found that pregnant women with gestational diabetes during pregnancy management can maintain blood glucose levels within the normal range through diet or medication control. Pregnant women with genital tract infection, premature delivery, postpartum hemorrhage, and macrosomia are present in this experimental group. The probability of illness is basically close

to that of normal pregnant women, which is significantly higher than that of pregnant women with gestational diabetes who have not received pregnancy management. This indicates that the incidence rate of various obstetric complications can be significantly reduced by prenatal management and reasonable control of blood glucose level during pregnancy. Health education enables pregnant women to improve their awareness of gestational diabetes, and can guide their life habits, reasonable diet, appropriate exercise and correct understanding of the importance of maintaining normal blood sugar throughout pregnancy. Early intervention measures, such as health education, diet control and moderate exercise, can control blood glucose in an ideal state and reduce the use of insulin and the occurrence of hypoglycemia in macrosomia and neonates.

3. Results

The focus of pregnancy management is to control blood sugar, but because of the special physical and physiological conditions of pregnant women, blood sugar is more difficult to control: (1). With the approaching of childbirth, in order to maintain the health of pregnant women and normal growth of fetuses, pregnant women need more and more calories every day. In terms of current medical conditions, it is difficult to accurately calculate the specific value of heat energy required, so it is difficult to correctly control the pregnant women's food intake, leading to high blood sugar. (2) Pregnant women with gestational diabetes mellitus in different gestational weeks have different resistance to insulin, so doctors are required to detect blood sugar level in time and adjust insulin dosage. (3) Because of the small amount of exercise and changeable dietary habits of pregnant women, changes in physiological conditions at different gestational weeks will lead to changes in the ability to absorb food nutrition. Therefore, dietary plans should be formulated according to the patient's own physical condition and exercise volume, and blood sugar changes should be monitored at any time to coordinate with insulin therapy and timely adjust dietary plans. Gestational diabetes is often mild, and 85% of patients with GDM can achieve therapeutic goals with only dietary treatment. In terms of diet, specific guidance is given according to the individual differences of pregnant women, so that pregnant women and their families can learn the food exchange method, promote pregnant women to develop good habits, and establish a reasonable diet structure to facilitate blood sugar control. Diet is based on a small number of meals, diet control should not be too strict, the ideal diet control can not only meet the nutritional needs of the mother and fetus during pregnancy, but also does not cause excessive intake of carbohydrates resulting in postprandial hyperglycemia. Controlling a reasonable diet has positive significance for the pregnancy outcome of gestational diabetes, as shown in Figure 1.

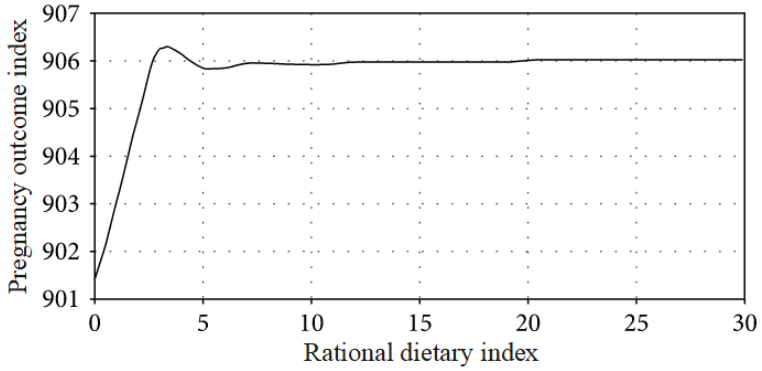

Fig.1 Pregnancy outcomes

Gestational diabetes mellitus includes two types: pre-pregnancy and post-pregnancy. It includes not only diabetes mellitus, but also impaired glucose tolerance and fasting blood sugar. It is a general term for impaired glucose tolerance, abnormal fasting blood sugar and diabetes mellitus. Poor control of gestational diabetes mellitus can lead to serious short-term and long-term complications and complications of both mother and fetus. Current studies have shown that age, obesity, race, history of poor fertility and family history of diabetes mellitus are the main factors

affecting gestational diabetes mellitus. The incidence of gestational diabetes mellitus is 1%-14% and 1%-5% in China. The incidence of gestational diabetes mellitus has increased significantly in recent years (Figure 2). Affected by gestational diabetes mellitus, pregnant women may suffer from severe vascular diseases. High blood glucose in pregnant women may indirectly lead to long-term excessive blood glucose in the fetus, and excessive development in the womb will result in abnormal accumulation of fat, forming a giant baby. In the process of birth, excessive expansion of the uterus can easily cause postpartum hemorrhage, which is not conducive to the smooth birth of pregnant women, and the resulting fetus has a much higher probability of diabetes and obesity than normal fetus, and this effect is long-term. Hypoglycemia can affect the energy metabolism of brain cells. It is of great significance to strengthen the monitoring of blood glucose in the newborn of GDM pregnant women, feed sugar water early, open milk early, and prevent other complications, so as to reduce the incidence of neonatal hypoglycemia and reduce the long-term brain damage caused by hypoglycemia.

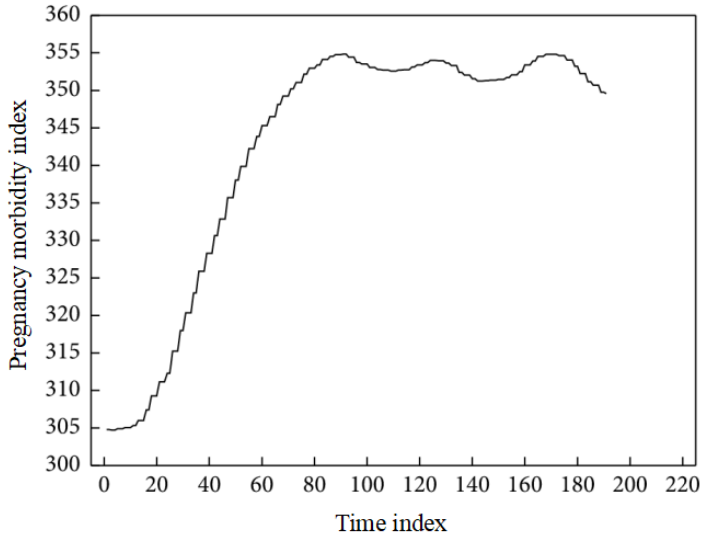

Fig.2 Incidence trend

4. Conclusion

At present, numerous studies have shown that the control of blood glucose during pregnancy is an important factor determining the prognosis of maternal and infant patients with GDM, and the control of blood glucose during pregnancy is close to or reaches the normal level, which can effectively reduce the occurrence of maternal and infant complications. As a medical worker should vigorously popularize gestational diabetes related knowledge as well as adjust the diet, monitoring blood sugar, insulin use methods such as knowledge, make the pregnant women and their families to fully realize the dangers of gestational diabetes and pregnancy management, the importance of hospital treatment when necessary, make the gestational diabetes, pregnant women can better cooperate with pregnancy management, control blood sugar levels. In summary, through the implementation of the necessary pregnancy management mode for pregnant women with gestational diabetes, the system regulates the systemic management of gestational diabetes patients during pregnancy, which can reduce the occurrence of complications related to pregnant women and reduce the physical and psychological aspects of patients. The pain has greatly improved the patient's condition, and has been well received by patients and their families. The comprehensive and humanized concept of pregnancy management has good social benefits.

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