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Case Study on Gestational Diabetes Mellitus.

Jamuna S*.

Sree Balaji College of Nursing (Bharath University) Chrompet, Chennai-44, Tamil Nadu, India.

ABSTRACT

Gestational diabetes is a condition that develops during pregnancy when the body is not able to make enough insulin the lack of insulin causes the blood glucose level to become higher than normal Gestational diabetes is a condition that develops during pregnancy when the body is not able to make enough insulin.

Keywords: Insulin, gestational diabetic mellitus, Glucose intolerance, pregnancy

**Corresponding author*

GESTATIONAL DIABETES MELLITUS

Gestational diabetes is a condition that develops during pregnancy when the body is not able to make enough insulin. Gestational diabetes is caused when insulin receptors do not function properly. Gestational diabetes generally has few symptoms and it is most commonly diagnosed by screening during pregnancy [1,2].



Case presentation on Mrs. x

Mrs. x ,25 Years old women without previously diagnosed diabetes exhibit high blood glucose (blood sugar) levels during pregnancy (especially during their third trimester).

Definition:

The lack of insulin causes the blood glucose level to become higher than normal Gestational diabetes is a condition that develops during pregnancy when the body is not able to make enough insulin.

CAUSES:

Gestational diabetes is caused when insulin receptors do not function properly. This is likely due to pregnancy-related factors such as the presence of human placental lactogen that interferes with susceptible insulin receptors. This in turn causes inappropriately elevated blood sugar levels [3].

Gestational diabetes generally has few symptoms and it is most commonly diagnosed by screening during pregnancy. Diagnostic tests detect inappropriately high levels of glucose in blood samples. Gestational diabetes affects 3-10% of pregnancies, depending on the population studied. As with diabetes mellitus in pregnancy in general, babies born to mothers with untreated gestational diabetes are typically at increased risk of problems such as being large for gestational age (which may lead to delivery complications), low blood sugar, and jaundice. If untreated, it can also cause seizures or stillbirth. Gestational diabetes is a treatable condition and women who have adequate control of glucose levels can effectively decrease these risks. The food plan is often the first recommended target for strategic management of GDM.

Women with unmanaged gestational diabetes are at increased risk of developing type 2 diabetes mellitus (or, very rarely, latent autoimmune diabetes or Type 1) after pregnancy, as well as having a higher incidence of pre-eclampsia and Caesarean section,^[3] their offspring are prone to developing childhood obesity, with type 2 diabetes later in life. Most women are able to manage their blood glucose levels with a modified diet and the introduction of moderate exercise, but some require ant diabetic drugs, including insulin [4].

CLASSIFICATION:

Gestational diabetes is formally defined as "any degree of glucose intolerance with onset or first recognition during pregnancy". This definition acknowledges the possibility that a woman may have previously undiagnosed diabetes mellitus, or may have developed diabetes coincidentally with pregnancy. Whether symptoms subside after pregnancy is also irrelevant to the diagnosis. A woman is diagnosed with gestational diabetes when glucose intolerance continues beyond 24–28 weeks of gestation [2,3].

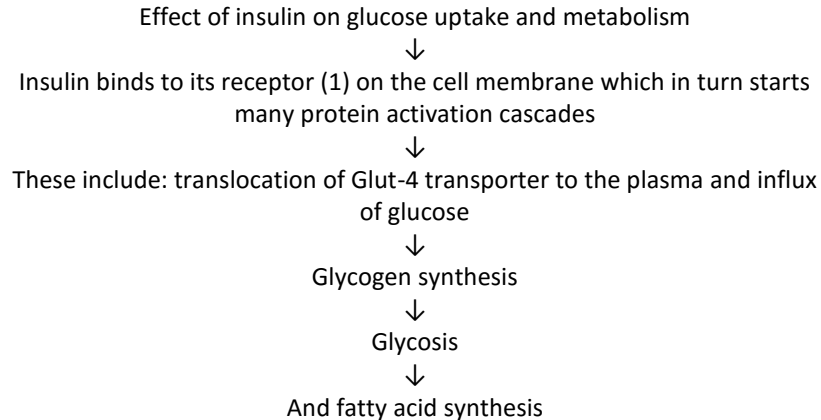
- Polycystic Ovary Syndrome
- A previous diagnosis of gestational diabetes or prediabetes, impaired glucose tolerance, or impaired fasting glycaemia
- A family history revealing a first-degree relative with type 2 diabetes
- Maternal age - a woman's risk factor increases as she gets older (especially for women over 35 years of age).
- Ethnicity (those with higher risk factors include African-Americans, Afro-Caribbean's, Native Americans, Hispanics, Pacific Islanders, and people originating from South Asia)
- Being overweight, obese or severely obese increases the risk by a factor 2.1, 3.6 and 8.6, respectively.
- A previous pregnancy which resulted in a child with a macrosomia (high birth weight: >90th centile or >4000 g (8 lbs 12.8 oz))
- Previous poor obstetric history
- Other genetic risk factors: There are at least 10 genes where certain polymorphism is associated with an increased risk of gestational diabetes, most notably TCF7L2.

In addition to this, statistics show a double risk of GDM in smokers. Polycystic ovarian syndrome is also a risk factor although relevant evidence remains controversial. Some studies have looked at more controversial potential risk factors, such as short stature.

RISK FACTORS [3,6]

- Age greater than 25
- Family or personal health history
- Excess weight
- Non-white race

PATHOPHYSIOLOGY [7]



DIAGNOSIS(8)

- No challenge blood glucose test
- Fasting glucose test
- 2- hours postprandial (after a meal) glucose test
- Random glucose test
- Screening glucose challenge test
- Oral glucose tolerance test (OGTT)

PREVENTION:

A 2015 review found that when done during pregnancy moderate physical exercise is effective for the prevention of gestational diabetes. A 2014 review however did not find a significant effect. Theoretically, smoking cessation may decrease the risk of gestational diabetes among smoker [4,9].

MANAGEMENT:**MEDICAL MANAGEMENT:**

The oral medication metformin is better than glyburide. While metformin and insulin if needed may be better than just insulin [5,10].

Metformin being available by mouth oral is preferred to injections. Treatment of polycystic ovarian syndrome with metformin during pregnancy has been noted to decrease GDM levels.

DIETARY MANAGEMENT:

Any diet needs to provide sufficient calories for pregnancy, typically 2,000 - 2,500 kcal with the exclusion of simple carbohydrates. The main goal of dietary modifications is to avoid peaks in blood sugar levels. This can be done by spreading carbohydrate intake over meals and snacks throughout the day, and using slow-release carbohydrate sources—known as the G.I. Diet. Since insulin resistance is highest in mornings, breakfast carbohydrates need to be restricted more. Ingesting more fibre in foods with whole grains, or fruit and vegetables can also reduce the risk of gestational diabetes [5,8].

LIFE STYLE:

Counselling before pregnancy (for example, about preventive folic acid supplements) and multidisciplinary management are important for good pregnancy outcomes. Most women can manage their GDM with dietary changes and exercise. Self monitoring of blood glucose levels can guide therapy. Some women will need antidiabetic drugs, most commonly insulin therapy. Regular moderately intense physical exercise is advised, although there is no consensus on the specific structure of exercise programs for GDM [9].

PROGNOSIS:

Women diagnosed with gestational diabetes have an increased risk of developing diabetes mellitus in the future. The risk is highest in women who needed insulin treatment, had antibodies associated with diabetes. Women requiring insulin to manage gestational diabetes have a 50% risk of developing diabetes within the next five years. Depending on the population studied, the diagnostic criteria and the length of follow-up, the risk can vary enormously. The risk appears to be highest in the first 5 years, reaching a plateau thereafter. One of the longest studies followed a group of women from Boston, Massachusetts; half of them developed diabetes after 6 years, and more than 70% had diabetes after 28 years. In a retrospective study in Navajo women, the risk of diabetes after GDM was estimated to be 50 to 70% after 11 years. Another study found a risk of diabetes after GDM of more than 25% after 15 years. In populations with a low risk for type 2 diabetes, in lean subjects and in women with auto-antibodies, there is a higher rate of women developing type 1 diabetes. (8)(10)

Complications

The two main risks GDM imposes on:

- the baby are growth abnormalities and chemical imbalances after birth, which may require admission to a neonatal intensive care unit [7]
- Infants born to mothers with GDM are at risk of being both large for gestational age (macrosomic) in unmanaged GDM,
- and small for gestational age
- Intrauterine growth retardation
- Macrosomia in turn increases the risk of instrumental deliveries (e.g. forceps, ventouse and caesarean section) or problems during vaginal delivery such as shoulder dystocia.

SUMMARY:

Mrs. X was cooperative with health personnel. He was recovering from his symptoms and problems. She didn't develop any complications.

CONCLUSION

Gestational diabetes is a condition that develops during pregnancy when the body is not able to make enough insulin. Gestational diabetes is caused when insulin receptors do not function properly. Gestational diabetes generally has few symptoms and it is most commonly diagnosed by screening during pregnancy.

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