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Gestational Diabetes

I have already had my baby. What now?

When women diagnosed with gestational diabetes hold their baby in their arms, they are told in the hospital that they can now follow a "normal" diet (as if it were abnormal to follow a healthy diet) and no longer need to check their blood glucose levels. But... can they forget about gestational diabetes now? Well, they really shouldn't. Their pancreas has not been able to sufficiently manage the increased in-

sulin resistance that occurred during their pregnancy. It is expected that any other situation that causes insulin resistance (sedentary lifestyle, abdominal fat accumulation, certain drugs like corticosteroids, etc.) will challenge their pancreas, which will likely become overwhelmed and probably return to showing hyperglycemia: pre-diabetes in early stages and type 2 diabetes mellitus if this condition progresses.

Additionally, there are rare situations in which the diagnosis of gestational diabetes is not accurate. It can happen that we are facing a pre-existing issue before pregnancy such as prediabetes, type 2 diabetes mellitus (T2DM), or certain types of genetic diabetes (*MODY - Maturity Onset Diabetes of the Young*) that had gone unnoticed, and performing a glucose curve results in elevated levels leading to the erroneous diagnosis of gestational diabetes. It is also possible to encounter a case of type 1 diabetes mellitus that develops during pregnancy.

This is why a follow-up check-up **between 4 and 12 weeks postpartum** is recommended for all women who have had gestational diabetes (1). In this follow-up, it is advisable to perform a **new oral glucose tolerance test**. The parameters we typically use to assess how carbohydrates are metabolized: glucose and glycated hemoglobin (HbA1c), are insufficient postpartum. HbA1c, which measures the mean blood glucose level over the past 3 months, results from the glycation of a portion of the hemoglobin contained in red blood cells. Glycation is the binding of glucose to some amino acids in the hemoglobin molecule. Therefore, its percentage is proportional to the amount of circulating glucose. Once glucose has bound to hemoglobin, it remains attached throughout the lifespan of the red blood cell. However, during pregnancy, there is a higher turnover of these cells, and blood loss during childbirth also increases this turnover. Since these red blood cells have a much shorter lifespan, HbA1c levels may be falsely low during pregnancy and postpartum. Thus, the best way to evaluate carbohydrate metabolism after gestation is through an oral glucose tolerance test (75 g over 2 hours).

In this first evaluation, we will know if there is:

- **An altered basal glucose level:** glucose at the start of the curve between 100 and 125 mg/dL.
- **Carbohydrate intolerance:** glucose at the end of the curve between 140 mg/dL and 199 mg/dL.

- **T2DM:** glucose at the beginning of the curve > 125 mg/dl or at the end of the curve > 200 mg/dL.
- **Normal carbohydrate metabolism:** glucose at the start of the curve < 100 mg/dL and at the end of the curve < 140 mg/dL.

Even if the glucose curve in the postpartum follow-up is completely normal, **lifelong monitoring is recommended** since up to 60% of women who have had gestational diabetes will eventually develop long-term T2DM. This increased risk is linear over time, being approximately 20% at 10 years, 30% at 20 years, 40% at 30 years, 50% at 40 years, and 60% at 50 years postpartum (2). In fact, the risk of developing T2DM is 10 times higher in women who have previously had gestational diabetes vs those who have not (3).

But these data should not be seen as a death sentence or anything like that. The truth is that we are facing an opportunity, and scientific data supports this. The NHS II study, which included a total of 4413 women who had gestational diabetes and were followed from 1991 to 2005, showed that those with good adherence to a healthy diet during pregnancy had less progression to T2DM later, with a risk reduction between 40% and 57% depending on the dietary pattern (4). In our environment, it has also been observed that adherence to the Mediterranean diet during pregnancy reduces the risk of developing metabolic syndrome three years postpartum (5). Metabolic syndrome is a group of disorders that occur simultaneously and includes, at least, 3 of the following conditions:

- Increased blood pressure.
- Blood sugar levels above normal.
- Abdominal fat accumulation (elevated waist circumference).
- Decreased HDL cholesterol levels (commonly known as good cholesterol).
- Elevated triglyceride levels.

Women who maintain a healthy lifestyle after pregnancy have up to a 35% lower risk of developing T2DM 10 years postpartum than those who do not continue with the recommendations (6).

For all these reasons, we must take advantage of the opportunity presented by the diagnosis of gestational diabetes for women to learn, incorporate, and maintain the recommended habits from pregnancy in the long term. This diagnosis occurs at a time when motivation is higher than at any other point in their lives. After all, there is nothing we wouldn't do for the well-being and safety of our children. This motivation can and should be transformed into a driving force for change that extends well beyond pregnancy, allowing the benefits gained to extend even to the rest of the family, as the habits parents adopt during child-rearing will largely determine their children's habits in the future.

What does this lifelong monitoring consist of? The ADA (American Diabetes Association) guidelines recommend (1):

- Annual follow-up with fasting glucose and HbA1c levels.
- Follow-ups every 3 years with a 75 g oral glucose tolerance test

Personally, I advise my patients to have an annual follow-up to also assess other metabolic and cardiovascular risk parameters such as lipid profile, liver profile, blood pressure, body mass index, and waist circumference. The values considered normal in this case are a glucose levels < 100 mg/dL and HbA1c levels < 5.7%.

Regarding **breastfeeding**, there is no contraindication for it due to having had gestational diabetes. However, several factors may hinder it:

- The higher percentage of obesity in these patients, as this is one of the main risk factors for developing gestational diabetes. Obesity is associated with greater difficulty in initiating and maintaining breastfeeding due to various mechanisms (7):



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- » ● A decreased prolactin response (the hormone that stimulates milk production) to sucking in women with pregestational obesity has been described.
 - There is an accumulation of progesterone and estrogens in breast adipose tissue. Progesterone inhibits milk production (lactogenesis) and estrogens inhibit its secretion.
 - The higher frequency of C-section deliveries, especially in those cases with worse metabolic control and fetal macrosomia (babies weighing > 4 kg).
 - The management of neonatal hypoglycemia, which is a possible complication of gestational diabetes. In these cases, it is necessary to ensure a minimum glucose supply to the baby, usually done artificially, which may complicate the initiation of breastfeeding.
 - Gestational diabetes can also hinder lactogenesis per se, especially in the case of poorer metabolic control, as it is those women who ultimately require insulin treatment that face the greatest difficulties in initiating breastfeeding (8).
- Despite these challenges, breastfeeding should be recommended and encouraged due to its beneficial effects on both mother and children. In fact, in cases of gestational diabetes, it has been shown that »

BREASTFEEDING SHOULD BE RECOMMENDED AND ENCOURAGED FOR ITS BENEFICIAL EFFECTS ON BOTH MOTHER AND CHILDREN

» breastfeeding is a strong protective factor against the development of metabolic syndrome in later years, reducing the risk of occurrence by 7% for every month exclusive breastfeeding is maintained (9). Similarly, breastfeeding also promotes the prevention of developing T2DM in the years following a gestational diabetes diagnosis, with this protective effect being stronger the longer the breastfeeding period (10).

It is believed that this beneficial effect is due to prolactin, which is capable of:

-Improving the sensitivity of the body's cells to insulin.

-Enhancing the function of pancreatic cells responsible for producing insulin.

-Suppressing fat accumulation in our adipocytes. Adipocytes are the cells where fat is stored, and the more fat accumulated, the greater the risk of developing T2DM. **D**

CONCLUSIONES:

- After childbirth, women with a previous diagnosis of gestational diabetes must maintain adherence to the lifestyle recommendations established during pregnancy, as their risk of developing T2DM is 10 times higher than that of women with normoglycemia during pregnancy.
- For this same reason, periodic analytical screening throughout life is recommended to rule out carbohydrate metabolism disorders.
- In addition to adherence to a healthy diet, breastfeeding also exerts a protective effect against the development of metabolic syndrome and T2DM in the long term.
- However, women who have experienced gestational diabetes face greater difficulties in initiating breastfeeding, so it should be encouraged, supervised, and supported by health care professionals.

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