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Cardiovascular Risk in Women with Gestational Diabetes

Gestational diabetes (GD) is defined as an alteration of glucose metabolism that is initially detected during pregnancy. It is important to differentiate it from diabetes that may have been present before conception, as they have different characteristics.

Although initially, the diagnosis of GD aimed to identify which women would be at higher risk of developing diabetes mellitus in the future, the focus of attention on this pathology shifted away from the mother to focus on the offspring. The interest has been almost exclusively directed at avoiding complications in the fetus and newborn, relegating the mother to a secondary role.

Although GD resolves in most cases after the end of pregnancy, its diagnosis has implications for the mother's health in the years following childbirth.

CARDIOVASCULAR RISK

In recent years, attention has again been paid to the mother's health after childbirth. Several studies have reported an increased cardiovascular risk (mainly risk of vascular disease in the heart and brain) in women who had GD.

Two meta-analysis studies (a method by which data from different studies conducted on the same topic are analyzed) have found that the risk of experiencing a cardiovascular event is somewhere between 45% and 52% higher among women who had GD vs those who did not (1, 2). The risk increases even more if they had obesity before becoming pregnant, reaching 76% (3).

The greatest risk is of suffering from heart disease (72%), followed by brain disease (40%). This increased risk is observed even when the woman is still very young, in the first years after childbirth.

Part of the increased risk is related to the development of type 2 diabetes mellitus after pregnancy (1, 2). If the development of diabetes were avoided, the risk would be reduced by 23%, especially the risk of developing heart failure, which is reduced by 64% (3).

RISK OF DIABETES MELLITUS

Having had GD significantly increases the risk of developing type 2 diabetes mellitus, between 8 to 10 times higher than if GD has not occurred (4). At 5 years after childbirth, 15% of women who had GD have type 2 diabetes mellitus, at 10 years 25%, and at 15 years 35%.

Having had GD identifies women with a high

risk of developing diabetes mellitus and also of developing it at a young age. This is important because the earlier diabetes develops, the greater the risk that diabetes will cause higher mortality and cardiovascular disease (5).

When the oral glucose tolerance test is performed to diagnose gestational diabetes, sometimes the results are not high enough to diagnose the presence of gestational diabetes, but they are above what is considered normal. This is known as gestational glucose intolerance. Women who are in this situation also have a high risk of developing type 2 diabetes mellitus. In this case, it is approximately double compared to those whose results were all normal, being higher the more points on the glucose curve were abnormal.

CARDIOMETABOLIC TRAJECTORY OF WOMEN WHO HAVE HAD GD

Women who grow GD already have a more unfavorable lipid, glucose, and HbA1c profile before pregnancy, and therefore from a cardiovascular point of view, than those who do not develop it. Pregnancy does not lead to a worsening of lipids, but it does for glucose (6).

Pregnancy can change the association of cardiovascular risk factors from before pregnancy, improving or not worsening the lipid profile, but it can accelerate the rate of worsening of others, as occurs with glucose metabolism.

Women who have GD have a dysfunctional beta cell (the only cell capable of producing insulin), unable to synthesize all the insulin needed to compensate for insulin resistance in the second half of pregnancy, resulting in the diagnosis of GD. This dysfunction can undergo a progressive worsening after pregnancy, which is behind the risk of developing type 2 diabetes mellitus.

The diagnosis of GD must serve to identify a woman with a high risk of developing type 2 diabetes and cardiovascular events and act as soon as possible to prevent it.

HOW TO REDUCE THIS RISK?

It is important to understand that the diagnosis of GD is not a complication that is li»

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» mited to the months of pregnancy, but that if we do not act appropriately, it can compromise the woman's health in the following 5 to 10 years, when she is still a very young person.

Fortunately, we have tools that can change the cardiovascular risk. The first tool should be considered during gestation per se, encouraging the mother that after the end of pregnancy, she maintains

breastfeeding. Prolonged breastfeeding, understood as a cumulative duration of breastfeeding of 18 months or more throughout the woman's life, halves the risk of cardiovascular disease compared »

» to women who never breastfed. And if it is exclusive breastfeeding, the risk is reduced by 70% (7). Even if the mother had diabetes before becoming pregnant, breastfeeding also provides benefit.

After giving birth, if the woman is obese and has analytical alterations typical of a “situation at risk for developing diabetes or prediabetes,” maintaining a healthy diet and performing aerobic exercise accumulating 2.5 hours per week can reduce the risk of developing diabetes mellitus type 2 by 35% (8). In this same clinical situation, incorporating treatment with metformin once breastfeeding has ended (since metformin is excreted in breast milk) can reduce this risk by 40% (8). If the occurrence of type 2 diabetes mellitus is reduced, the risk of cardiovascular events will be reduced, thus avoiding two dangerous situations.

If the mother is no longer breastfeeding and is obese, some drugs indicated for the treatment of obesity have been shown to be capable of reducing the risk of developing type 2 diabetes mellitus in a very effective way. Semaglutide at a dose of 2.4 mg/week can reduce the risk of developing diabetes mellitus in just more than 70% of people with obesity, a benefit that is maintained with prolonged use of the drug and that is related to the degree of weight loss achieved. The risk of developing diabetes was reduced even in people who started using semaglutide starting from a “prediabetes” situation (9). Tirzepatide at doses of 5, 10, or 15 mg in people with obesity and prediabetes reduced the risk of developing diabetes by 99%, normalizing glucose metabolism in 90-97% of patients (depending on the dose administered), in a proportion related to the proportion of weight loss achieved (10).

There is no single proposal for all women who have or have had gestational diabetes; in each case, it will be necessary to assess which is the proposal that best adapts to the needs and situation of each moment. **D**

CONCLUSIONS

The diagnosis of gestational diabetes identifies a woman at high risk of developing type 2 diabetes mellitus and cardiovascular disease throughout her life. The risk compared to women who have not had GD is higher from the first 5-10 years after pregnancy, a very important fact because it represents a young population group.

After giving birth, this risk can be reduced. Prolonged breastfeeding, weight reduction with a healthy diet together with exercise, drugs such as metformin, semaglutide, and tirzepatide used in certain situations have been shown to be capable of reducing the risk of developing diabetes mellitus type 2. Part of the increase in cardiovascular risk is mediated by the onset of diabetes; if we prevent it from appearing, the risk of developing cardiac and cerebral vascular disease will be reduced. In each woman, it will be necessary to assess which treatment to propose.

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