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Editorial

The Cardiometabolic Index: A Promising Tool for Risk Stratification in Pregnant Women with Pregestational Diabetes

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We have read with great interest the recent advances published on cardiometabolic risk assessment tools in vulnerable populations. In this context, we wish to share our experience with the application of the cardiometabolic index (CMI) in a group of particular concern: pregnant women with pregestational diabetes (PGD).

Preeclampsia (PG), both type 1 and type 2, presents a major clinical challenge due to its association with serious maternal and perinatal complications such as preeclampsia, preterm birth, congenital malformations, and fetal death [1,2]. Accurate risk stratification in these patients is essential to optimize resources and enhance individualized clinical follow-up.

The metabolic score for insulin resistance (METS-IR), also known as the ICM, is a novel marker that integrates routine parameters (waist circumference, triglycerides, HDL cholesterol, and fasting glucose) to estimate insulin resistance and overall metabolic risk [3]. Its application in high-risk obstetric populations remains underexplored.

We present the results of an observational study conducted in 223 women with long-standing preeclampsia (mean: ~15 years) evaluated during the first trimester of pregnancy. We calculated the ICM using the formula: [HC (cm)/Height (m)] x [TG (mg/dL)/HDL (mg/dL)] x [Glucose (mg/dL)/HDL (mg/dL)], and categorized the patients according to previously established cut-off points [3,4].

The results were conclusive: 99.55% (222/223) of the pregnant women were classified as high risk (ICM ≥ 38). Only one patient (0.45%) presented moderate risk (ICM 30 - 37.9), and none were classified as low risk. Even more significant was the identification of an extreme risk subgroup: 183 women (82.1%) showed ICM values between 100 and 999, and 3 patients (1.3%) presented values greater than 1000.

These findings have immediate clinical implications. The MCI not only confirms the expected high metabolic risk in these patients but also allows for fine stratification within this already vulnerable population. Pregnant women with an MCI > 1000 constitute an absolute priority subgroup, with a "metabolic storm" profile that includes severe hypertriglyceridemia, profound hypoalphalipoproteinemia, and significant abdominal obesity. These patients require urgent multidisciplinary intervention (endocrinology, maternal-fetal medicine, nutrition) and intensive management of dyslipidemia and glycemia to mitigate the risk of catastrophic complications such as acute pancreatitis of pregnancy, severe early-onset preeclampsia, or intrauterine fetal death [5,6].

We believe that the ICM, due to its accessibility, low cost, and discriminatory capacity, should be incorporated into the initial routine evaluation of all pregnant women with pre-existing conditions. This tool would allow for:

1. Objectively confirm high baseline metabolic risk.
2. Identify patients at extreme risk (MCI > 1000) requiring immediate intervention as early as possible.
3. Optimize resource allocation in high-risk obstetric units.

We acknowledge the limitation of using general cut-off points, not specifically validated in obstetric patients with preeclampsia. Future multicenter studies should establish specific reference values for this population and evaluate the correlation between the MCI and adverse maternal and perinatal outcomes.

In light of our findings, we encourage healthcare teams to implement the systematic calculation of the MCI and to report their experiences, thus contributing to generating evidence that will improve the management of these high-risk patients.

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