

# It's high time to change our management of gestational diabetes

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Diabetes has become the most common condition in pregnant women. According to data obtained from the National Health Fund in Poland, the percentage of pregnancies complicated by diabetes was 12% in 2021, which is almost a 60% increase compared to the frequency recorded in 2016 [1]. This may be related to the increasing number of women with obesity in reproductive age, as well as delaying the decision to become pregnant. Over 90% of cases of hyperglycemia in pregnancy are gestational diabetes mellitus (GDM), which is a transient intolerance to carbohydrates. Glycemic deviations are usually not very severe in the group of women with GDM, but there are significantly more complications in their offspring both during the neonatal period and later in life. Excessive intra-uterine growth of the fetus and accompanying metabolic disorders affect the processes of epigenetic programming and are a risk factors for the development of polymetabolic syndrome, cardiovascular diseases, cancer and mental disorders [2, 3]. Proper treatment of gestational diabetes is important not only to prevent complications during pregnancy and delivery (hypertension, shoulder dystocia, caesarean section), but also to improve the health of future generations.

However, the treatment methods currently used in cases of pregnancies complicated by diabetes, do not bring fully satisfactory results. New models of insulin therapy using insulin analogs and personal insulin pumps improved glycemic control in pregnant women with type 1 diabetes, but unfortunately the percentage of children with excessive body weight in relation to the gestational age (large for gestational age — LGA) increased significantly [4]. A less restrictive diet and more weight gain in pregnancy are considered the main causes of this phenomenon. More frequent use of insulin therapy in pregnant women with gestational diabetes did not result in improving obstetric outcomes. In the conducted epidemiological study, the percentage of women with GDM was 40%, but the incidence of neonatal

complications was similar to the results in pregestational diabetes group [1].

The development of new technologies has brought a significant change in the approach to treatment of diabetes in the general population. The use of continuous glucose monitoring methods in interstitial fluid (continuous glucose monitoring — CGM) allowed the establishment of new alignment criteria based on such exponents as TIR (time in range), glucose variability or glucose management indicator (GMI) [5]. Analysis of the results of studies on women with type 1 diabetics using CGM showed that an increase by 5% in TIR length during pregnancy significantly reduces the risk of fetal macrosomia [6]. Randomized, multicenter CONCEPT STUDY showed that pregnant women with type 1 diabetes using CGM had lower rates of LGA and neonatal hypoglycaemia, compared to women conducted only on the results obtained from glucometer measurements (self-blood glucose monitoring (SMBG) [7]. Also, the results of interventions conducted under the aegis of the Great Orchestra of Christmas Charity using the CGM system in women with type 1 diabetes, already in the preconception period, resulted in very good perinatal outcome [8].

Could the use of CGM systems in cases of GDM, with less severe hyperglycemia incidents, affect perinatal outcomes? A meta-analysis of the conducted research showed that the use of continuous monitoring systems promotes adherence to dietary recommendations and lower weight gain during pregnancy [9]. In the recently published randomized study FLAMIGO, in which the study group used only flash glucose monitoring (FGM) for the first month of GDM therapy, a significantly lower rate of neonatal macrosomia was observed compared to the SMBG control group (4% vs 20%) [10]. Women with gestational diabetes using FGM also achieved lower fasting and postprandial glucose levels after two weeks of therapy. Assessed in the 34<sup>th</sup> week, the Eating Assessment Test Score was higher in the study group than in the control group.

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Due to the ongoing metabolic changes and the dynamic growth of the fetus in the third trimester, it is necessary to introduce rapid modifications of diabetes treatment. Continuous glucose monitoring and associated alarms informing about the risk of hypo and hyperglycemia, increase the safety of the therapy. A very important aspect is also the individualization of treatment, considering the different profiles of patients, especially their body mass index (BMI). Excessive body weight both before pregnancy and in all trimesters are an additional risk factor for fetal complications [11]. Comprehensive obstetric, diabetic, dietary and physiotherapeutic care currently seems to be the best model of diabetes treatment during pregnancy and preconception period [12].

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