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Review Article

CONTINUOUS GLUCOSE MONITORING (CGM) DURING PREGNANCY: SIGNIFICANCE AND CHALLENGES

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ABSTRACT

Objective: This review aims to evaluate the clinical significance, accuracy, and implementation challenges of continuous glucose monitoring (CGM) in pregnancies complicated by type 1 diabetes (T1D), type 2 diabetes (T2D), and gestational diabetes mellitus (GDM). Specifically, it assesses the impact of CGM on maternal glycemic control and perinatal outcomes compared to self-monitoring of blood glucose (SMBG).

Methods: A comprehensive systematic review of randomized controlled trials (RCT) and observational studies was conducted. Data were synthesized regarding glycemic targets, device accuracy (Mean Absolute Relative Difference: MARD), maternal outcomes (HbA1c, preeclampsia, gestational weight gain), and neonatal outcomes (large for gestational age: LGA, hypoglycemia, NICU admission).

Results: Evidence from the CONCEPTT trial and subsequent studies confirms that real-time CGM (rt-CGM) significantly improves neonatal outcomes in T1D, reducing LGA rates and NICU admissions. For GDM and T2D, results are heterogeneous; while CGM consistently detects nocturnal hyperglycemia and reduces gestational weight gain, its impact on LGA is variable, though recent trials (GRACE) indicate significant benefits. Modern CGM devices demonstrate high accuracy in pregnancy (MARD 9.5-10.3%). Higher Time in Range (TIR) is strongly associated with reduced adverse outcomes.

Conclusion: CGM is the standard of care for T1D in pregnancy, offering superior glycemic insight and improved neonatal health. Its role in GDM is evolving, showing promise for risk stratification and behavioral modification, though cost and lack of standardized targets remain barriers.

Key words: Continuous glucose monitoring, Gestational diabetes mellitus, Type 1 diabetes, Pregnancy outcomes, Time in Range, Glycemic variability

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INTRODUCTION

Hyperglycemia in pregnancy, affecting approximately 16% of live births globally, poses significant risks for both maternal and fetal health, including preeclampsia, macrosomia, and neonatal hypoglycemia [1–3]. The management of diabetes in pregnancy requires stringent glycemic control to mitigate these risks. Traditionally, self-monitoring of blood glucose (SMBG) via finger-prick testing has been the cornerstone of management. However, SMBG provides only intermittent snapshots of glycemic status, often missing acute fluctuations such as postprandial spikes or asymptomatic nocturnal hypoglycemia [4,5].

Continuous glucose monitoring (CGM) systems measure interstitial glucose levels every 1-5 minutes, offering a comprehensive glycemic profile that includes the direction and rate of glucose change [6,7]. The underlying electrochemical mechanism enabling this high-frequency quantification of interstitial glucose is delineated in Figure 1. While CGM is now widely accepted as the standard of care for T1D pregnancies, its application in GDM and T2D is less established but rapidly evolving [5]. This review synthesizes current evidence regarding the accuracy, clinical efficacy, and economic viability of CGM in pregnancy, addressing the significance of granular data in improving perinatal outcomes and the challenges of implementation.

GLYCEMIC TARGETS AND ACHIEVEMENT IN PREGNANCY

Pregnancy induces a state of dynamic metabolic adaptation characterized by increasing insulin resistance [9]. Consequently, glycemic targets in pregnancy are stricter than in non-pregnant states to prevent fetal overgrowth and metabolic programming.

- Standard Guidelines: International consensus and the American Diabetes Association (ADA) recommend a pregnancy-specific Time in Range (TIR) of 63-140 mg/dL (3.5-7.8 mmol/L) [10,11].

- Type 1 Diabetes: The recommended targets are >70% TIR, <25% Time Above Range (TAR), and <4% Time Below Range (TBR). Achieving these targets

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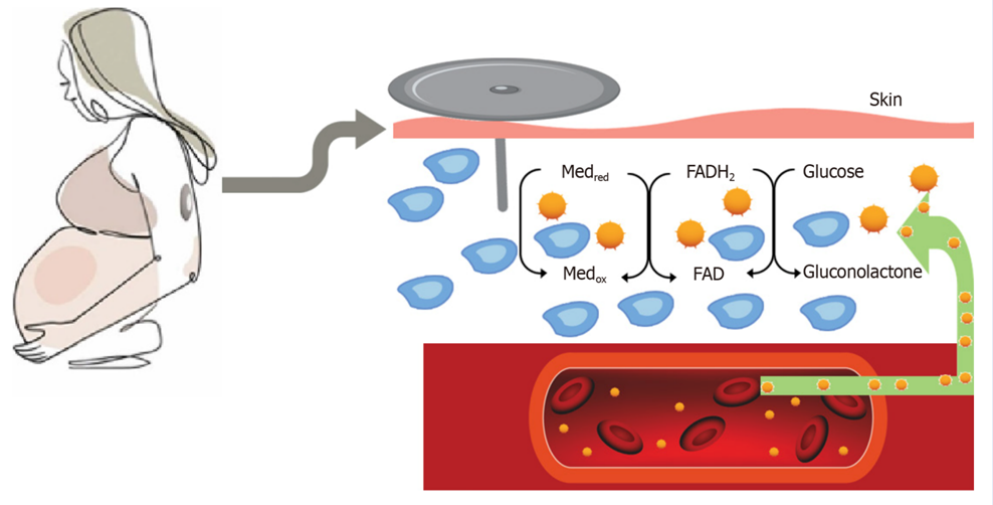

Figure 1: Basic operational mechanism of continuous glucose monitoring sensor measuring interstitial glucose (Jeeyavudeen MS et al.[8])

is challenging; in the landmark CONCEPTT trial, participants achieved approximately 68% TIR by 34 weeks[12].

- T2D and GDM: Specific CGM targets for GDM and T2D are not yet formally standardized due to insufficient data[12]. However, given the lower risk of hypoglycemia in these populations compared to T1D, some experts suggest stricter targets, such as TIR >90% or mean glucose <110 mg/dL, may be required to significantly reduce the risk of LGA[13].

A comprehensive comparative summary of these population-specific continuous glucose monitoring parameters is consolidated in Table 1.

ACCURACY OF CGM IN PREGNANCY

Accuracy is critical for clinical decision-making, particularly when insulin dosing is based on sensor data. The Mean Absolute Relative Difference (MARD) is the standard metric for CGM performance, representing the average absolute difference between the CGM reading and a reference value. However, a primary consideration in interpreting this metric is physiological lag, as CGM measures glucose in the interstitial fluid, which creates a physiological lag time compared to capillary blood glucose (Figure 2), especially when glucose levels are changing rapidly[7,18]. Despite this inherent delay, modern devices have demonstrated safety and accuracy in pregnancy. For instance, the Dexcom G7 achieved an overall MARD of 9.5% in a study involving pregnant women with T1D, T2D, and GDM[19]. Similarly, the Dexcom G6 reported a MARD of 10.3%, while the FreeStyle Libre (isCGM) has a reported MARD of 11.8% in pregnancy[12]. Furthermore, regarding agreement rates, in head-to-head comparisons with the YSI laboratory reference, 92.5% of G7 CGM values were within 20% or 20 mg/dL of the reference values. This high level of accuracy supports the use of modern CGM systems for therapeutic decision-making in pregnancy without confirmatory fingersticks[19].

CGM IN PREGNANCY: EVIDENCE FROM CLINICAL TRIALS AND OBSERVATIONAL STUDIES

Preexisting Type 1 Diabetes in Pregnancy

The evidence supporting CGM in T1D is robust. The multicenter randomized CONCEPTT trial remains the pivotal study in this field. It demonstrated that real-time CGM (rt-CGM) use was associated with significant improvements in neonatal outcomes, specifically a significant reduction in large-for-gestational-age (LGA) infants (53% vs. 69%; OR 0.51), fewer NICU admissions >24 hours (27% vs. 43%), and reduced neonatal hypoglycemia (15% vs. 28%) compared to SMBG[12]. Furthermore, the trial highlighted advancements in maternal glycemia, demonstrating improved TIR (68% vs. 61%) and reduced glycemic variability without increasing maternal hypoglycemia[12]. Regarding the study's limitations, it was observed that despite these benefits, maternal outcomes such as preeclampsia and cesarean section rates were not significantly different between groups

Table 1: Summary of Current Glycemic Targets in Pregnancy

CGM Metrics	Target for Type 1 Diabetes (T1D)	Target for Type 2 Diabetes (T2D) & GDM	Notes
Time in Range (TIR) (% time 63-140 mg/dL)	> 70%	> 90%	TIR > 70% equates to > 16 hours 48 mins/day. For T2D/GDM, due to lower hypoglycemia risk, experts suggest a stricter target of > 90% [13,14].
Time Above Range (TAR) (% time > 140 mg/dL)	< 25%	< 5% (or < 10%)	TAR > 140 mg/dL is the primary driver of Large for Gestational Age (LGA) infants. Some studies suggest keeping TAR < 10% or < 5% for GDM [13–15].
Time Below Range (TBR) (Level 1: < 63 mg/dL)	< 4%	< 4%	< 4% equates to < 1 hour/day. This metric includes Level 2 hypoglycemia [13,15].
Time Below Range (TBR) (Level 2: < 54 mg/dL)	< 1%	< 1%	< 1% equates to < 15 minutes/day. Critical for safety in insulin-treated patients [13,16].
Mean Glucose		< 110 mg/dL (6.1 mmol/L)	While not a standard consensus target for T1D, studies in GDM suggest maintaining mean glucose < 110 mg/dL is associated with optimal outcomes [14].
Glycemic Variability (%CV)	≤ 36%		CV ≤ 36% is recommended to ensure glycemic stability [13,17].

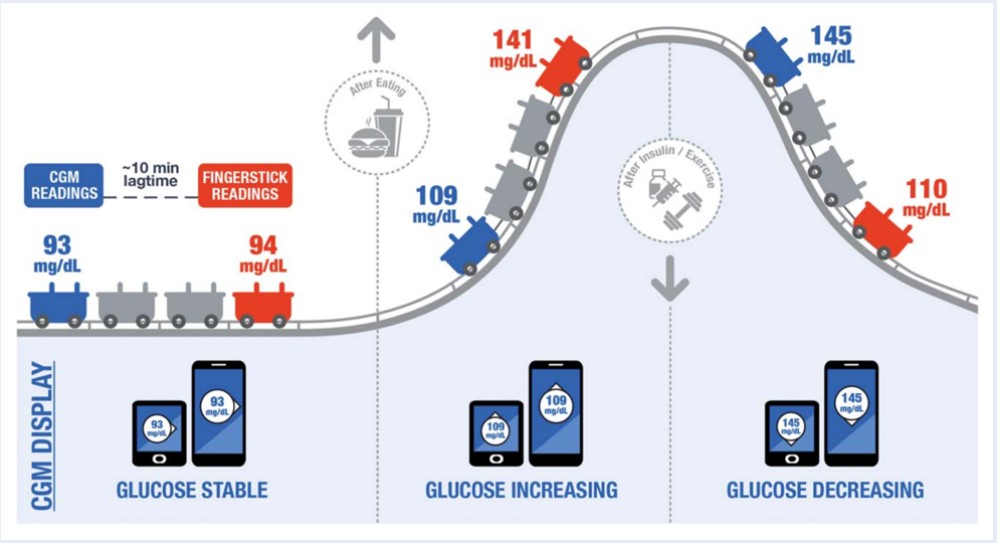

Figure 2: Lag time of continuous glucose monitoring (CGM) and trend arrows (Battarbee AN et al. [7])

in the CONCEPTT trial[20]. However, subsequent observational analyses suggest that higher TIR is associated with reduced risk of preeclampsia[15].

Preexisting Type 2 Diabetes in Pregnancy

Data on CGM in T2D pregnancies are more limited than those available for type 1 diabetes. With respect to glycemic detection, CGM detects significantly more nocturnal hypoglycemia and postprandial excursions than SMBG in T2D pregnancies. Specifically, one study found that isCGM detected nocturnal hypoglycemia in 31.2% of women compared to 8.3% in the SMBG group[12]. Regarding clinical outcomes, evidence regarding perinatal outcomes is mixed. While some studies show improved HbA1c and TIR, meta-analyses have often lacked the power to demonstrate reductions in LGA or other complications conclusively[21]. However, observational data suggest that achieving TIR >70% in T2D is associated with fewer adverse outcomes[22]. Beyond glycemic metrics, the integration of technology with culturally tailored education proves vital for management. Recent research in diverse T2D populations indicates that combining rt-CGM with educational interventions results in greater reductions in HbA1c and TAR compared to education alone. Importantly, rt-CGM aids patients in comprehending glucose changes regardless of health literacy or language barriers, suggesting a visual learning benefit applicable to diverse groups[23]. Furthermore, for non-insulin or basal-insulin-only T2D populations, cyclical use of rt-CGM has demonstrated feasibility and efficacy, offering a potential cost-saving strategy while maintaining glycemic improvements[23].

Gestational Diabetes

The utility of CGM in GDM is a subject of ongoing debate, though recent evidence is strengthening the case for its use. In terms of glycemic control, CGM is superior to SMBG in detecting nocturnal hyperglycemia and asymptomatic hypoglycemia[5]. A meta-analysis of six RCTs showed that CGM use was associated with lower HbA1c levels at the end of pregnancy (Mean Difference: -0.22%) and less gestational weight gain[12]. Moving to neonatal outcomes, the data on LGA reduction is conflicting but evolving. Earlier meta-analyses found no significant difference in LGA or macrosomia between CGM and SMBG groups[24]. However, a recent large multicenter RCT (GRACE) demonstrated that rt-CGM significantly reduced the proportion of LGA newborns (4% vs. 10%; OR 0.32) in women with GDM[25]. This suggests that real-time feedback may be necessary to drive the behavioral changes required to impact fetal growth. Finally, considering the behavioral impact, CGM serves as a powerful educational tool, allowing women to visualize the immediate impact of diet and exercise on their glucose levels, thereby improving adherence to lifestyle modifications[13].

Early diagnosis of GDM and use of CGM

CGM is emerging as a potential tool for the early detection of dysglycemia, potentially complementing or replacing the traditional Oral Glucose Tolerance Test (OGTT). This potential is underscored by the identification of early biomarkers; specifically, a prospective study found that individuals diagnosed with GDM at 24-28 weeks exhibited higher mean glucose and greater time >120 mg/dL on CGM as early as 13-14 weeks of gestation compared to those who did not develop GDM[12]. In terms of diagnostic concordance, in a study comparing concurrent CGM and OGTT, CGM glucose levels were slightly higher than venous blood glucose, suggesting that using standard OGTT thresholds on CGM data might lead to overdiagnosis[26]. However, CGM is highly acceptable to patients and avoids the nausea associated with the glucose load[27]. Moreover, the capacity for prediction is notably high, as CGM metrics in early pregnancy, such as mean glucose and TIR, have shown high precision (AUC 0.81) in predicting a subsequent GDM diagnosis[28].

Accuracy and Mean Absolute Relative Difference (MARD) in Pregnancy

The accuracy of CGM devices in pregnancy is comparable to non-pregnant populations, which is vital for safety.

- Dexcom G7: Demonstrated a MARD of 9.5% in a diverse cohort of pregnant women[19].
- Dexcom G6: Reported a MARD of 10.3% in pregnancy[12].
- FreeStyle Libre: Reported a MARD of approximately 11.8%[12]. These values (<10-12%) indicate that modern sensors are sufficiently accurate for clinical dosing decisions[19].

A overview of these accuracy profiles, detailing the specific validation methodologies and study population, is delineated in Table 2.

Note: MARD: Mean Absolute Relative Difference; rt-CGM: Real-time Continuous Glucose Monitoring; is-CGM: Intermittently Scanned Continuous Glucose Monitoring; SMBG: Self-Monitoring of Blood Glucose, YSI: Yellow Springs Instruments.

Table 2: Reported accuracy of modern continuous glucose monitoring systems in pregnancy

Sensor Model	CGM Type	Study Population	Comparator Method	MARD (%)	Reference
Dexcom G7	rt-CGM	Pregnant women with T1D, T2D, GDM	YSI / Laboratory Reference	9.5%	Polsky et al. [19]
Dexcom G6	rt-CGM	Pregnant women with T1D, T2D, GDM	YSI / Capillary SMBG	10.3%	Rodacki et al. [12]
FreeStyle Libre	is-CGM	Pregnant women with T1D, T2D, GDM	YSI / Capillary SMBG	11.8%	Rodacki et al. [12]

Modern sensors demonstrate high performance, with MARD values ranging from 9.5% to 11.8%. Notably, the Dexcom G7 achieves a MARD of 9.5% against the laboratory YSI standard, indicating superior precision across diverse diabetes types (T1D, T2D, and GDM). These values fall within the clinically acceptable range for therapeutic decision-making, supporting the use of modern CGM systems for insulin dosing in pregnancy without the need for confirmatory fingerstick testing.

CGM-derived metrics and adverse pregnancy outcomes

CGM metrics provide a more granular association with outcomes than HbA1c. A synthesis of recent literature evaluating the associations between these CGM-derived metrics and adverse perinatal outcomes across diverse diabetic populations is delineated in Table 3.

- Time in Range (TIR): For T1D, every 5% increase in TIR is associated with a 28% reduction in the odds of neonatal morbidity[29]. The optimal TIR threshold to reduce complications appears to be >70%[12]. For GDM, achieving TIR >90% is associated with the lowest risk of LGA[14].
- Time Above Range (TAR): TAR is a strong predictor of LGA and neonatal hypoglycemia. In T1D, TAR >25% significantly increases the risk of adverse outcomes[12] . In GDM, TAR >10% is associated with increased LGA risk[14].
- Mean Glucose: Higher mean glucose, particularly nocturnal mean glucose, is a potent driver of fetal overgrowth (LGA) in both T1D and GDM[12]. Maintaining mean glucose <110 mg/dL in GDM is associated with optimal outcomes[14].
- Glycemic Variability (GV): High GV is associated with preeclampsia and preterm birth.

Table 3: Comparison of CGM-Derived Metrics and Adverse Pregnancy Outcomes

Author	Population	CGM Metric Evaluated	Association with Adverse Pregnancy Outcomes
Sanusi et al.[29]	Preexisting T1D & T2D	Time in Range (TIR)	Every 5% increase in TIR was associated with a 28% reduced odds of composite neonatal morbidity (LGA, hypoglycemia, NICU admission). Also associated with lower risk of cesarean delivery.
		Time Above Range (TAR)	Higher TAR (>140 mg/dL) was associated with increased risk of LGA, neonatal hypoglycemia, and NICU admission.
		Glycemic Variability (GV)	Higher GV was uniquely and independently associated with increased odds of Preeclampsia and Preterm birth (<37 weeks).
		Mean Glucose & GMI	Higher average glucose and GMI were associated with LGA, NICU admission, hypoglycemia, and earlier gestational age at delivery.
Liang et al.[30]	GDM	TAR, AUC, Mean Glucose	Higher TAR, AUC, and Mean Glucose (Nighttime/Daytime/Daily) were significantly associated with increased risk of LGA and any adverse pregnancy outcome.
		TAR	Higher TAR specifically linked to increased risk of NICU admission. Threshold of TAR >2.5% distinguished women with adverse outcomes.
		Time Below Range (TBR)	Inverse association: Higher TBR was associated with a lower risk of LGA.
Kusinski et al.[14]	GDM	Mean Glucose	Mean glucose <110 mg/dL (6.1 mmol/L) at 29 weeks was associated with reduced risk of LGA and SGA (Small for Gestational Age).
		TIRp (Pregnancy TIR)	Achieving TIRp >90% (at 29 weeks) was associated with reduced risk of LGA and SGA.
		Nocturnal Metrics	Nocturnal mean glucose <110 mg/dL and TARp <10% were associated with reduced odds of Preterm birth.

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Table 3 continued

Author	Population	CGM Metric Evaluated	Association with Adverse Pregnancy Outcomes
Battarbee et al.[31]	T1D & T2D	Glucose Profiles (Machine Learning Clusters)	Profile 4 ("Poorly controlled with peak hyperglycemia overnight") had the highest odds of Preeclampsia (aOR 4.29), LGA, Neonatal Hypoglycemia, and NICU admission. Profile 2 ("Suboptimal control with high variability") was significantly associated with LGA but not other adverse outcomes.
Linder et al.[25]	GDM	rt-CGM Use (Intervention)	Use of rt-CGM (vs. SMBG) significantly reduced LGA (4% vs 10%). However, SGA rates were numerically higher in the CGM group (19% vs 13%), suggesting tight control might impact growth.

LGA is the most consistent adverse outcome associated with suboptimal CGM metrics across all diabetes types, driven primarily by elevated Mean Glucose and TAR [15,30,31]. While higher TIR acts as a strong protective factor, with every 5% increase reducing the odds of neonatal morbidity by approximately 28% in pre-existing diabetes [29], emerging evidence for GDM indicates that standard targets may be insufficient; stricter thresholds (TIR >90% or mean glucose <110 mg/dL) appear necessary to effectively reduce LGA risks [14]. Furthermore, the data highlights the critical role of temporal profiling, identifying Glycemic Variability and nocturnal hyperglycemia as specific, independent predictors for preeclampsia and NICU admissions, often missed by traditional monitoring [29,31]. However, the results also suggest a potential therapeutic trade-off, where overly aggressive control (indicated by higher TBR or lower mean glucose) is inversely associated with LGA but may increase the risk of Small for Gestational Age (SGA) infants [25,30], underscoring the need for precision in defining optimal glycemic safe zones during pregnancy.

INDICATIONS FOR USE OF CGM IN PREGNANCY

The choice between real-time CGM (rtCGM) and intermittently scanned CGM (isCGM) depends on the patient's specific needs and risk profile. In modern obstetric practice, Real-time CGM (rtCGM): Strongly indicated for all pregnant women with T1D and those with T2D/GDM on intensive insulin therapy. The "real-time" alerts for high and low glucose are crucial for preventing severe hypoglycemia and minimizing glycemic variability [13]. The NICE guidelines and ADA recommend offering rt-CGM to all pregnant women with T1D [13]. In contrast, Intermittently scanned CGM (isCGM): May be sufficient for women with diet-controlled GDM or those on simpler regimens where hypoglycemia risk is low [13]. It is generally lower cost but may lack predictive alarms in older generations. Studies like FLAMINGO suggest isCGM can reduce macrosomia risk in GDM compared to SMBG [12]. Regarding risk stratification, CGM should not necessarily be applied "en masse" for all low-risk GDM due to cost, but rather targeted at those requiring pharmacotherapy or those with evidence of fetal accelerated growth [12].

COST-EFFECTIVENESS OF CGM USE IN PREGNANCY

In the management of Type 1 Diabetes, CGM is considered cost-effective in T1D pregnancies. Analyses from the CONCEPTT trial indicated that the cost of the devices is offset by the savings from reduced NICU admissions (numbers needed to treat = 6 to prevent one NICU admission) and shorter hospital stays [12]. However, regarding GDM/T2D, the cost-effectiveness for GDM is less clear. Although SMBG is cheaper, if CGM can prevent LGA and cesarean sections (as suggested by the GRACE trial), it may prove cost-effective in high-risk GDM subgroups, but broader economic analyses are needed [13].

DISCUSSION

CGM represents a paradigm shift in obstetrics, moving from intermittent monitoring to continuous surveillance. The significance of CGM lies in its ability to unmask hidden pathologies, specifically postprandial spikes and nocturnal sustained hyperglycemia, that drive fetal overgrowth despite normal fasting capillary glucose. However, challenges remain significant:

- Cost and Access: High costs restrict access, particularly in low-resource settings and for GDM populations where insurance coverage is inconsistent [12].
- Data Overload: The sheer volume of data can cause alarm fatigue and anxiety for patients, and increase workload for clinicians who need to interpret ambulatory glucose profiles (AGP) [32].
- Lack of Consensus Targets for GDM: While targets for T1D are well-defined (TIR >70%), targets for GDM are extrapolated. Recent studies suggest GDM targets need to be stricter (e.g., TIR >90%) to show benefit, which may explain why some earlier trials with looser targets failed to show reduced LGA [32].
- Dermatological Issues: Skin irritation from sensor adhesives remains a barrier for some users [15].

Beyond these systemic barriers, a significant clinical challenge lies in the inherent physiological lag between interstitial glucose levels and capillary blood glucose, which becomes clinically critical during periods of rapid glycemic flux. This delay necessitates rigorous patient counseling on the interpretation of trend arrows to prevent premature or aggressive insulin corrections that may lead to secondary hypoglycemia. Furthermore, the pursuit of intensified glycemic targets in GDM introduces a complex therapeutic trade-off; while achieving a TIR >90% or a mean glucose <110 mg/dL is associated with reduced LGA, emerging evidence suggests that such narrow safe zones may inadvertently increase the risk of SGA outcomes. This highlights the necessity for precision in defining optimal glycemic thresholds that balance the prevention of macrosomia against the preservation of physiological fetal growth velocity. Finally,

the integration of high-density CGM data into routine obstetric workflows requires enhanced digital infrastructure to prevent clinician burnout and ensure that granular metrics translate effectively into actionable therapeutic adjustments.

CONCLUSIONS

Continuous glucose monitoring is a transformative technology in the management of diabetes in pregnancy. For T1D, it is unequivocally beneficial, reducing neonatal morbidity and serving as the standard of care. For GDM and T2D, the evidence is maturing; CGM offers clear benefits in glycemic visualization, maternal engagement, and potentially reducing LGA in insulin-treated or high-risk cohorts. Future implementation depends on establishing specific glycemic targets for GDM, improving reimbursement models, and integrating CGM data into streamlined clinical workflows to reduce burden.

COMPETING INTERESTS

The authors declare that there are no conflicts of interest in conducting this research.

AUTHORS' CONTRIBUTIONS

Ho Minh Tuan: Conceptualization, Methodology, Formal analysis, Writing - Original Draft
Nguyen Thi Yen: Software, Validation, Formal analysis, Writing - Review & Editing.

ABBREVIATIONS

ADA: American Diabetes Association
AGP: Ambulatory Glucose Profile
CGM: Continuous Glucose Monitoring
GDM: Gestational Diabetes Mellitus
GV: Glycemic Variability
LGA: Large for Gestational Age
MARD: Mean Absolute Relative Difference
NICU: Neonatal Intensive Care Unit
OGTT: Oral Glucose Tolerance Test
RCT: Randomized Controlled Trial
rt-CGM: Real-time Continuous Glucose Monitoring
is-CGM: Intermittently Scanned Continuous Glucose Monitoring
SMBG: Self-Monitoring of Blood Glucose
T1D: Type 1 Diabetes
T2D: Type 2 Diabetes
TIR: Time in Range
TAR: Time Above Range
TBR: Time Below Range

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Bài tổng quan

THEO DÕI ĐƯỜNG HUYẾT LIÊN TỤC TRONG THAI KỲ: Ý NGHĨA VÀ THÁCH THỨC

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TÓM TẮT

Mục tiêu: Tổng quan này nhằm đánh giá ý nghĩa lâm sàng, độ chính xác và những thách thức trong việc triển khai theo dõi đường huyết liên tục ở các thai kỳ có biến chứng đái tháo đường típ 1, đái tháo đường típ 2 và đái tháo đường thai kỳ. Cụ thể, nghiên cứu đánh giá tác động của theo dõi đường huyết liên tục đối với việc kiểm soát đường huyết của người mẹ và các kết cục chu sinh so với phương pháp tự theo dõi đường huyết mao mạch.

Phương pháp: Chúng tôi rà soát các nghiên cứu đối chứng ngẫu nhiên và các nghiên cứu quan sát đã được thực hiện có liên quan đến theo dõi đường huyết liên tục và thai kỳ. Dữ liệu được tổng hợp dựa trên các tiêu chí: mục tiêu đường huyết, độ chính xác của thiết bị, kết cục của mẹ (HbA1c, tiền sản giật, mức tăng cân trong thai kỳ) và kết cục của trẻ sơ sinh (thai to so với tuổi thai, hạ đường huyết, nhập đơn vị chăm sóc tích cực sơ sinh).

Kết quả: Các bằng chứng từ thử nghiệm CONCEPTT và các nghiên cứu sau đó xác nhận rằng theo dõi đường huyết liên tục thời gian thực cải thiện đáng kể kết cục sơ sinh trong đái tháo đường típ 1, làm giảm tỷ lệ thai to so với tuổi thai và tỷ lệ nhập đơn vị chăm sóc tích cực sơ sinh. Đối với đái tháo đường típ 2 và đái tháo đường thai kỳ, kết quả ghi nhận không đồng nhất; trong khi theo dõi đường huyết liên tục phát hiện một cách nhất quán tình trạng tăng đường huyết về đêm và giúp giảm tăng cân trong thai kỳ, thì tác động của nó đối với thai to so với tuổi thai lại thay đổi tùy nghiên cứu, mặc dù các thử nghiệm gần đây đã chỉ ra những lợi ích đáng kể. Các thiết bị theo dõi đường huyết liên tục hiện đại cho thấy độ chính xác cao trong thai kỳ. Thời gian trong khoảng mục tiêu cao hơn khi theo dõi đường huyết liên tục có mối liên hệ mật thiết với việc giảm các kết cục bất lợi của thai kỳ.

Kết luận: Theo dõi đường huyết liên tục là phương pháp cần thiết đối với đái tháo đường típ 1 trong thai kỳ, mang lại thông tin ưu việt về mức đường huyết và cải thiện sức khỏe sơ sinh. Vai trò của theo dõi đường huyết liên tục trong đái tháo đường thai kỳ đang ngày càng phát triển, cho thấy triển vọng trong việc giúp phân tầng nguy cơ và điều chỉnh hành vi, mặc dù chi phí và sự thiếu hụt các mục tiêu chuẩn hóa vẫn là những rào cản ở hiện tại.

Từ khoá: Theo dõi đường huyết liên tục, Đái tháo đường thai kỳ, Đái tháo đường típ 1, Kết cục thai kỳ, Thời gian trong khoảng mục tiêu, Dao động đường huyết

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