Expert Perspectives on Evolving Evidence on CGM Use in Pregnancy

Navigating the Gray Areas Where Data Are Lacking

American Diabetes Association®

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Acknowledgement of Commercial Support

This activity is supported by an educational grant from Dexcom.

Description

Glucose monitoring during pregnancy identifies hyperglycemia and hypoglycemia and provides information for glucose management to reduce harm to the mother and neonate. Continuous glucose monitoring (CGM) is a method of assessing and monitoring glucose levels that provide real-time data for glucose management. While evidence on the use of CGM for diabetes outside of pregnancy is well developed and clinical practice guidelines provide guidance regarding its use, research and guidance on CGM use during pregnancy is relatively limited.

This document presents four clinical cases addressing the use of CGM in pregnancy. Each case presents a patient with a clinical scenario not clearly addressed in clinical practice guidelines and explores “gray areas” in CGM use in pregnancy. Perspectives based on expert opinions and clinical experience provide insight into the appropriateness of CGM for each, and practical advice on implementation in provided.

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CGM in Pregnancy Case 1 (First Trimester, Diagnosis)

A 39-year-old woman with history of iron deficiency anemia and GDM in a previous pregnancy has an A1C of 6.8% at 12 weeks' gestation. Her A1C was 5.7% eight months prior to pregnancy.

Does this patient have pre-existing diabetes?

Pre-existing diabetes is a diagnosis of type 1 or type 2 diabetes made prior to pregnancy. The patient's A1C is in the overt diabetes range, but that alone cannot support a diabetes diagnosis. According to the ADA's *Standards of Care in Diabetes*, laboratory tests must be confirmed by a repeated test to diagnose diabetes.[1] Further, pregnancy and iron deficiency anemia complicate the interpretation of the A1C result. Pregnancy can lower A1C by increasing the production of new red blood cells,[2] while iron deficiency anemia can increase A1C by diminishing the production of new red blood cells.[3] Given the potentially high stakes of undiagnosed pre-existing diabetes in pregnancy, further diagnostic assessment is warranted.

A 75-gram two-hour oral glucose tolerance test (OGTT) is an alternative method to diagnose diabetes and is advisable, but awaiting a laboratory appointment can delay diagnosis and treatment.[1] Immediate commencement of self-blood glucose monitoring (SMBG) using capillary blood glucose meters could provide diagnostic confirmation and thereby facilitate more rapid entry into treatment.[4] Continuous glucose monitoring (CGM) is cleared by the Food and Drug Administration (FDA) for the management of diabetes in pregnancy and it is increasingly being used as an alternative to SMBG in nonpregnant people. There are currently no diagnostic criteria for diabetes based on CGM.[1]

The patient declines OGTT and SMBG, but she is excited about CGM.

How would you start CGM for this patient?

I recommend an office-provided professional CGM device (owned by your clinic and intended for short-term use) to assess hyperglycemia because they are factory-calibrated and therefore do not require concomitant SMGB use. This is important if you are using the device off-label in patients who do not have a diagnosis of diabetes. Examples include the Dexcom G7, Abbott Libre 2+, and Abbott Libre 3+ devices.

The patient wears the CGM for 10–14 days, depending on the device's wear period. While some CGMs have an optional "blinded" mode so the patient cannot see data, patients often prefer to see their values. Trained team members (e.g., a registered nurse) can place the device on the patient in an approved body area (e.g., the back of the arm) and instruct her on its use. The patient can use either a compatible smartphone to receive the CGM data via Bluetooth signal or a receiver provided by your practice. Patients using smartphones can connect to your clinic's account in the CGM manufacturer's portal to send their glucose data to the cloud, enabling you to review data remotely. Patients using receivers must bring them to the office to have their data downloaded.

Billing: CPT code 95250 can be billed when an office-provided sensor is placed and connected, the patient is trained in its use, and the data from at least 72 hours of monitoring is downloaded for interpretation.

> *In this scenario, your team nurse places an unblinded professional CGM, helps your patient download the appropriate applications on her smartphone, and links the patient's data to the clinic's cloud account. You schedule a follow-up virtual telehealth appointment in two weeks.*

How should you view your patient's CGM data?

CGM manufacturers each have a portal that allows you to view patient data, provided your patient has connected to the portal and permits you to view their data.

Outside of pregnancy, many clinicians use a standardized report called the Ambulatory Glucose Profile (AGP) to view data. However, the default ranges for this report are for non-pregnant patients with diabetes (70–180 mg/dl), which differ from the target glucose range in pregnancy (63–140 mg/dl).[5] Therefore, you need to change the target range.

> *Before your patient's appointment, log on to your clinic's account and find her name. You change the target glucose range for reporting to 65–140 mg/dl (only 5 mg/dl increments are allowed by the software). You view the data from the last 10–14 days.*

Your patient's data summary:

- Time active: 97%
- Average glucose: 108 mg/dl
- GMI: 5.9%
- Standard deviation: 23 mg/dl
- CV: 21%
- Time in range: (65–140 mg/dl) 91%
- Time above range: (>140 mg/dl) 9%
- Time below range: <1%

The patterns suggest an overnight glucose in the 90 mg/dl.

How do you interpret these data?

These data are not consistent with pre-existing diabetes, but they could indicate prediabetes. In this case, it is likely that iron deficiency anemia, exacerbated by pregnancy, contributed to the newly elevated A1C.[3]

This patient's CGM data is similar to that seen in someone with gestational diabetes (GDM), which is typically diagnosed after 24 weeks' gestation.[4] In the Glucose Levels Across Maternity (GLAM) study published in *Diabetes Care*® in 2024, participants with GDM who underwent CGM monitoring prior to routine GDM screening had an mean average CGM glucose of 109 mg/dl, time in range (63–140 mg/dl) of 87%, and time above range (>140 mg/dl) of 7.4%.[6]

Billing: CPT code 95251 can be billed when a CGM report with at least 72 hours of data is analyzed and interpreted by a physician or other qualified health care provider.

If you had not set target CGM ranges for pregnancy and instead used the default non-pregnant target range, your patient's data would have been summarized like this:

- Time active: 97%
- Average glucose: 108 mg/dl
- GMI: 5.9%
- Standard deviation: 23 mg/dl
- CV: 21%
- Time in range: (70–180 mg/dl) 99%
- Time above range: (>180mg/dl) 1%
- Time below range: <1%

How would you manage this patient?

How best to treat people without pre-existing diabetes who have mild hyperglycemia in early pregnancy is controversial. The ADA's *Standards of Care in Diabetes* recommends you consider monitoring and treatment for individuals in the first trimester with an A1C ≥5.9% or fasting glucose ≥110 mg/dl. However, the benefit of monitoring or treatment in this population has not been definitively demonstrated.[1] The American College of Obstetrics and Gynecology does not recommend SMBG or diabetes pharmacotherapy in early pregnancy for people without overt diabetes, but states that nutrition counseling can be considered for those with prediabetes.[4]

I suggest that a referral for medical nutrition therapy (targeting prediabetes) and performance of a diagnostic three-hour OGTT at 24–26 weeks' gestation to test for GDM would be reasonable for this patient. This patient previously declined OGTT and SMBG. If the patient declines the OGTT, another 10–14-day period of CGM can be performed at 24–26 weeks' gestation. Appropriate treatment with medical nutrition therapy and/or pharmacotherapy can be initiated if the patient is not meeting glycemic targets for pregnancy at that time.[7]

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CGM in Pregnancy Case 2 (Second Trimester, Diagnosis)

A 32-year-old woman with a history of GDM in a previous pregnancy at 26 weeks' gestation vomited 10 minutes after consuming the 50-gram glucose load for her glucose challenge test. She declines further OGTT-based testing but is willing to wear a continuous glucose monitor.

Can CGM be used to diagnose GDM?

While continuous glucose monitoring (CGM) devices have been FDA-cleared for monitoring during pregnancy for all types of diabetes, using them for diagnosis of gestational diabetes (GDM) is considered off-label use. There are no widely accepted CGM-based criteria for diagnosing GDM (or other types of diabetes).[1] That said, when patients are unable to undergo traditional screening and diagnostic testing procedures, CGM can provide a picture of glucose levels during daily life, which may identify hyperglycemia that merits treatment. In addition, pregnant patients may prefer CGM to an oral glucose tolerance test (OGTT).[2]

How would you go about starting CGM for this purpose?

I recommend an office-provided professional CGM device (owned by your clinic and intended for short-term use) to assess hyperglycemia because they are factory-calibrated and therefore do not require concomitant self-monitoring of blood glucose (SMBG). This is important if you are using the device off-label in patients who do not have a diagnosis of diabetes. Examples include the Dexcom G7, Abbott Libre 2, and Abbott Libre 3 devices.

The patient wears the CGM for 10–14 days, depending on the device's wear period. While some CGMs have an optional "blinded" mode so the patient cannot see data, patients often prefer to see their values. Trained team members (e.g., a registered nurse) can place the device on the patient in an approved body area (e.g., the back of the arm) and instruct her on its use. The patient can use either a compatible smartphone to receive the CGM via Bluetooth signal or a receiver provided by your practice. Patients using smartphones can connect to your clinic's account in the CGM manufacturer's portal to send their glucose data to the cloud, enabling you to review data remotely. Patients using receivers must bring them to the office to have their data downloaded.

Billing: CPT code 95250 can be billed when an office provided sensor is placed, connected, the patient is trained in its use, and data from at least 72 hours of monitoring is downloaded for interpretation.

> *Your team's nurse places an unblinded professional continuous glucose monitor, helps your patient download the appropriate applications on their smartphone, and links the patients' data to the clinic cloud account. You schedule a follow-up telehealth appointment over video conference in two weeks.*

How should you view your patient's CGM data?

CGM manufacturers each have a portal that allows you to view data, provided your patient has connected to your account and granted permission. You should be able to log on and search for your patient and see their data in real time.

Outside of pregnancy, many clinicians use a standardized report called the Ambulatory Glucose Profile (AGP) to view data. However, the default ranges for this report are for non-pregnant patients with diabetes (70–180 mg/dl), which differ from the target glucose range in pregnancy (63–140 mg/dl).[5] Therefore, you need to change the target range.

> *Before your patient's appointment, you log on to your clinic's account and find her name. You change the target glucose range for reporting to 65–140 mg/dl (only 5 mg/dl increments are allowed by the software). You view the data from the 10 days of sensor wear.*

Your patient's data summary:

- Time active: 99%
- Average glucose: 118 mg/dl
- GMI: 6.2%
- Standard deviation: 25 mg/dl
- CV: 21%
- Time in range: (65–140 mg/dl) 83%
- Time above range: (>140 mg/dl) 17%
- Time below range: <1%

How would you interpret these data?

The monitoring is adequate, given that you have coverage of 99% of the 10-day wear period.

This patient's average glucose and time above range is higher than in a normal uncomplicated pregnancy. This degree of hyperglycemia has been associated with adverse pregnancy outcomes and should likely be treated.

In the Glucose Levels Across Maternity (GLAM) study published in *Diabetes Care* in 2024, participants without GDM who underwent CGM prior to routine GDM screening had a mean average CGM glucose of 100 mg/dl, time in range (63–140 mg/dl) of 95%, and time above range (>140 mg/dl) of 2.6%. In patients with subsequent GDM, mean glucose was 109 mg/dl, time in range was 87%, and time above range was 7.4%.[4]

In a 2023 observational study, participants who were not diagnosed with GDM whose CGM time above range (>140 mg/dl) reached or exceeded 10% had an increased risk of a composite outcome comprised of neonatal complications of hyperglycemia (63% versus 18% of those with time above range <10%).[5]

Thus, this patient's degree of hyperglycemia surpasses that seen in patients with GDM and exceeds thresholds associated with adverse neonatal outcomes.

Billing: CPT code 95251 can be billed when a CGM report with at least 72 hours of data is analyzed and interpreted by a physician or other qualified health care provider.

How would you manage this patient?

This patient should be treated for GDM with glucose monitoring, medical nutrition therapy, and if needed to meet glycemic targets (fasting glucose < 95 mg/dl, one-hour postprandial glucose < 140 mg/dl, two-hour postprandial glucose < 120 mg/dl), pharmacologic glucose-lowering.[6]

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CGM in Pregnancy Case 3 (Third Trimester, Management)

A 30-year-old woman at 32 weeks' gestation with GDM on 24 units of insulin glargine nightly has fasting blood glucose meter readings for the past week ranging from 106–127 mg/dl. She works as a childcare provider and has not been able to check fingerstick blood glucose at work. A few bedtime blood glucose meter readings range from 134–178 mg/dl. You recommend a continuous glucose monitor.

How would you go about starting CGM for this purpose?

Three continuous glucose monitoring (CGM) devices are FDA-cleared for monitoring glycemia in pregnant patients. These are the Dexcom G7, Abbott Libre 2+, and Abbott Libre 3+ devices. Available data outside of pregnancy suggest that these devices have comparable accuracy to currently available blood glucose meters. None requires calibration with glucometer readings, but the Dexcom device allows for calibration. The Dexcom G7 device has a published peer-reviewed study in pregnancy demonstrating accuracy close to that outside of pregnancy.[1]

The ADA's *Standards of Care in Diabetes—2025* states that data are insufficient to recommend CGM use in all patients with gestational diabetes (GDM). However, the decision to use CGM in this population should be individualized.[2] Many patients may prefer CGM to blood glucose meters, but literature on pregnant patients' preferences for glucose monitoring is limited.

When a patient is going to use a CGM device on an ongoing basis, you should prescribe a personal CGM that they can access either through their preferred pharmacy or a durable medical equipment (DME) company. The out-of-pocket cost may differ depending on whether the pharmacy benefit or DME benefit is used. Most insurance companies will cover CGM for patients on insulin.

Trained team members (e.g., a registered nurse) can place the device on the patient on an approved body area (e.g., the back of the arm) and instruct her on its use. The patient can use either a compatible smartphone to receive the CGM via Bluetooth signal or a receiver provided by your practice. Patients using smartphones can connect to your clinic's account in the CGM manufacturer's portal to send their glucose data to the cloud, enabling you to review data remotely. Patients using receivers must bring them to the office to have their data downloaded.

Billing: CPT code 95249 can be used when a personal CGM system is set up and connected and the patient is trained in its use. This code can be billed once while the patient is using the device.

How should you view your patient's CGM data?

CGM manufacturers each have a portal that allows you to view patient data, provided your patient has connected to the portal and permits you to view their data.

Outside of pregnancy, many clinicians use a standardized report called the Ambulatory Glucose Profile (AGP) to view data. However, the default ranges for this report are for non-pregnant patients with diabetes (70–180 mg/dl), which differ from the target glucose range in pregnancy (63–140 mg/dl).[5] Therefore, you need to change the target range.

Before your patient's appointment, you log on to your clinic's account and find her name. You change the target glucose range for reporting to 65–140 mg/dl (only 5 mg/dl increments are allowed by the software). You view the data from the last 14 days.

How do you interpret these data?

Your patient's data summary:

- Time active: 96%
- Average glucose: 126 mg/dl
- GMI: 6.3%
- Standard deviation: 32 mg/dl
- CV: 25%
- Time in range: (65–140 mg/dl) 71%
- Time above range: (>140 mg/dl) 29%
- Time below range: <1%

The CGM data shows episodic hyperglycemia between 7:00–9:00 a.m., 12:30–2:30 p.m., and 6:00–8:00 p.m. Peak glucoses are as high as 185 mg/dl one hour after the glycemic excursion begins. Overnight blood glucose declines from an average of 154 mg/dl at 10:00 p.m. to 112 mg/dl at 6:00 a.m.

This patient's CGM data show substantial daytime hyperglycemia above targets for GDM. The degree of ongoing hyperglycemia was not captured by her self-blood glucose monitoring using intermittent blood glucose meter readings. The daytime glucose pattern is consistent with post-prandial hyperglycemia above conventional diabetes in pregnancy targets (one-hour postprandial < 140 mg/dl).[4]

While the CGM target range of 63–140 mg/dl is used for all types of diabetes in pregnancy,[3] there are no clear guidelines for how much time individuals with GDM or type 2 diabetes should spend in the pregnancy-specific target range.[3] A large study published in 2024 using the Dexcom G6 CGM system found that individuals with GDM start out with an average of ~94% time in the target range and an average glucose of 109 mg/dl prior to diagnosis.[5] We have known for more than a decade that treatment of even mild GDM reduces the risk of fetal overgrowth and other adverse outcomes.[6, 7] Therefore, it follows that goal time in pregnancy target range (63–140 mg/dl) should be substantially higher in GDM than the goal of >70% in type 1 diabetes.[3]

I suggest aiming for 95% time in pregnancy target range (63–140 mg/dl) and a mean glucose <100 mg/dl in patients with GDM, as long as this can be achieved without hypoglycemia. This patient is not meeting these targets.

Billing: CPT code 95251 can be billed up to once per month when a CGM report with at least 72 hours of data is analyzed and interpreted by a physician or other qualified health care provider.

Your patient returns to the office for a follow-up appointment. You confirm that she has continued to take glargine 24 units nightly. She weighs 83 kg.

How should you manage this patient?

This patient should be referred for ongoing medical nutrition therapy and should start prandial insulin while continuing the basal insulin glargine that has already been prescribed. The preferred rapid-acting insulins for pre-prandial use in pregnancy are aspart and lispro.[4] Faster aspart has also been studied in pregnancy with reassuring data.[8]

As far as dosing, patients in the third trimester frequently require more than 0.9 units per kg body weight of insulin daily,[9] but it is prudent to start with more modest dosing and up-titrate with close follow-up (less than one week). A reasonable starting dose for this patient is 10 units of rapid-acting insulin prior to each meal (resulting in a total daily dose of 0.65 units per kg body weight). In the third trimester, rapid-acting insulin works best if it is given well in advance of meal.[10] Some patients with GDM, who have considerable endogenous insulin production, can take their rapid-acting insulin only 15 minutes prior to eating. However, patients on larger doses of insulin or who do not have as much endogenous insulin secretion (such as in type 1 diabetes) may need to inject their rapid-acting prandial insulin as early as 45 minutes prior to meals.

> *Your patient returns to the office one week later and is now taking 24 units of glargine nightly as well as aspart 10 units prior to meals. Her CGM blood glucose over the last week is much closer to target with an average glucose of 111 mg/dl and time in pregnancy range (63–140 mg/dl) of 82%. She says that in addition to using her CGM system, she has started to intermittently check glucose with her blood glucose meter. She reports that the readings are sometimes very different. For example, yesterday, 90 minutes after breakfast, her CGM reading was 154 mg/dl and her blood glucose meter reading was 132 mg/dl.*

How should you address this patient's concern about CGM accuracy?

Studies suggest similar accuracy for CGM and commercially available glucometers. However, CGM measures interstitial glucose whereas home blood glucose meters measure capillary glucose. There is a 7–13 minute lag between the capillary glucose reading and the interstitial glucose reading,[11, 12] such that if their blood glucose is rapidly changing, the blood glucose reading and the CGM glucose reading will not match. This does not necessarily convey inaccuracy, though sensors may be more inaccurate on the first day of wear.[1]

Another potential source of discrepancy in CGM readings is compression of the sensor, which can cause falsely low readings. This often shows up in a CGM tracing as a rapid decline in blood glucose with a similarly steep return to baseline, resembling a "V" shape. Sensor compression commonly happens when sleeping patients are unaware that they are compressing the sensor, often overnight. When low blood glucose occurs overnight without symptoms, it is recommended that patients check for sensor compression and take a blood glucose meter reading before ingesting carbohydrates for treatment.

Dexcom CGM devices can be calibrated with a blood glucose meter reading. For the CGM systems FDA-cleared in pregnancy, calibration is not required. Because of the expected lag in the CGM glucose reading, any calibrations performed should be done when blood glucose is not changing. When treating GDM, the case author often recommends that patients check a fasting blood glucose reading when their blood glucose is stable. For devices that accept calibration, I advise you to counsel patients to calibrate the CGM device up to once per day if it is more than 20% different from the fasting blood glucose meter reading.

The postprandial discrepancy between this patient's CGM and blood glucose meter readings are likely due to expected CGM lag. This patient can continue to use CGM for monitoring, and calibration once daily while fasting can be performed if her particular CGM device allows for calibration.

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CGM in Pregnancy Case 4 (Third Trimester, Management)

A 26-year-old woman at 31 weeks' gestation with GDM is on nightly NPH insulin for fasting hyperglycemia. Her dose has been titrated to 58 units, but her fasting blood glucose levels for the past week checked via blood glucose meter still range from 103–118 mg/dl. Her postprandial blood glucose meter readings are all at goal. She was 91 kg at her last prenatal visit. One morning, she calls your office to let you know that she woke up feeling anxious with night sweats overnight last night. She woke her partner who said her speech was slurred. Her symptoms improved when he brought her a glass of apple juice.

What are the contributing factors to this patient's presentation?

This patient with gestational diabetes (GDM) experienced an episode highly concerning for severe hypoglycemia. Patients with GDM are often only on insulin for 10–12 weeks and may not have much experience with hypoglycemia prevention and treatment. The need to attain an intensive fasting glycemic target (<95 mg/dl) in pregnancy may lead to up-titration of bedtime insulin in pregnant patients and put them at risk for overnight hypoglycemia.[1]

NPH, which is a preferred insulin in pregnancy due to its safety record,[1] peaks four to six hours after administration and is associated with more overnight hypoglycemia than insulin glargine and other longer acting insulins.[2] Patients may experience the "Somogyi effect," where overnight hypoglycemia induces a counterregulatory response, resulting a fasting blood glucose above target.[3] If the overnight nadir in blood glucose is not recognized, this phenomenon can lead to up-titration of bedtime insulin for fasting hyperglycemia, ultimately worsening overnight hypoglycemia and leading to the type of event that this patient experienced.

Is there a role for CGM in this patient?

The Somogyi effect may go unrecognized in patients using conventional blood glucose meters for monitoring if an overnight reading is not checked as bedtime insulin is titrated.

Continuous glucose monitoring (CGM), which measures interstitial glucose and provides an estimation of blood glucose every few minutes, can detect impending hypoglycemia prior to its onset and allows patients to take preventive steps. In people with type 1 diabetes and a history of hypoglycemia unawareness or severe hypoglycemia, use of real-time CGM reduces the risk of hypoglycemia.[4] While the ADA's *Standards of Care in Diabetes—2025* states that data are insufficient to recommend CGM use in all patients with GDM, the decision to use CGM in this population should be individualized.[5]

This patient may benefit from CGM for prevention and treatment of overnight hypoglycemia and to provide data on overnight glucose trends to guide insulin titration. Three CGM devices are FDA-cleared for monitoring glycemia in pregnant patients with diabetes, including GDM. These are the Dexcom G7, Abbott Libre 2, and Abbott Libre 3 devices.

When a patient is going to use a CGM device on an ongoing basis, you should prescribe a personal continuous glucose monitor which they can access either through their preferred

pharmacy or a durable medical equipment (DME) company. The out-of-pocket cost may differ depending on whether the pharmacy benefit or DME benefit is used. Most insurance companies will cover CGM for patients on insulin.

Trained team members (e.g., a registered nurse) can place the device on the patient on an approved body area (e.g., the back of the arm) and instruct her on its use. The patient can use either a compatible smartphone to receive the CGM via Bluetooth signal or a receiver provided by your practice. Patients using smartphones can connect to your clinic's account in the CGM manufacturer's portal to send their glucose data to the cloud, enabling you to review data remotely. Patients using receivers must bring them to the office to have their data downloaded.

Billing: CPT code 95249 can be used when a personal CGM system is set up and connected and the patient is trained in its use. This code can be billed once while the patient is using the device.

> *You prescribe this patient a personal CGM and she returns after one week for an office visit. She has continued to take 48 units of NPH a night (you reduced the dose after the overnight hypoglycemia incident). She states that the continuous glucose monitor has been waking her up every night between 2:00–3:00 a.m. with a low alarm, but she was too tired to address it. You log in to the CGM manufacturer's portal to view the data and change the glucose target range to 65–140 mg/dl.*

The patient's data summary:

- Time active: 99%
- Average glucose: 106 mg/dl
- GMI: 5.8%
- Standard deviation: 23 mg/dl
- CV: 22%
- Time in range: (65–140 mg/dl) 93%
- Time above range: (>140 mg/dl) 3%
- Time below range: 4%

The CGM data show that the blood glucose nadirs every night around 2:00–4:00 a.m. around 55–60 mg/dl then increases to the 120s by 7:00 a.m.

How do you interpret these data?

The CGM summary statistics demonstrate excess hypoglycemia. Review of daily patterns and hourly statistics show that the blood glucose nadirs every night around 2:00–4:00 a.m. to 55–60 mg/dl, then increases to the low 100s by 7:00 a.m. when she usually wakes up. This suggests that the patient is indeed experiencing the Somogyi effect. It is also likely that the patient has some degree of hypoglycemia unawareness, since she is not consistently experiencing adrenergic symptoms of hypoglycemia.

Billing: CPT code 95251 can be billed when a CGM report with at least 72 hours of data is analyzed and interpreted by a physician or other qualified health care provider.

How should you manage this patient?

This patient's dose of bedtime NPH insulin is too high and is paradoxically resulting in fasting hyperglycemia. The bedtime NPH dose should be reduced by at least 20% (to <38 units, which is <0.4 units/kg body weight for this patient). I would reduce the dose more aggressively to 24 units. After dose reduction, CGM can be used to monitor for overnight hypoglycemia and achieve fasting glucose targets.

If the overnight hypoglycemia resolves with the NPH dose reduction but fasting glycemia is still above target, NPH insulin can be cautiously titrated by two units at a time until fasting glucose reaches target. If hypoglycemia recurs before the fasting glucose target (<95 mg/dl)[1] is reached, NPH should be switched to an insulin with a flatter pharmacokinetic profile, such as insulin glargine or insulin degludec.[6, 7]

The patient should be instructed to not ignore overnight CGM alarms and to treat overnight hypoglycemia with 15 grams of a fast-acting carbohydrate (such as glucose tabs, juice, non-diet soda, or candy). Fifteen minutes after treating low blood glucose, levels should be checked with a blood glucose meter (given the known lag in CGM-measured interstitial glucose), and treatment should be repeated if euglycemia (glucose >70 mg/dl) has not been achieved.

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