Case 4
A 29-Year-Old Woman with Type 1 Diabetes, Pregnant with Triplets

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Patient History
A 29-year-old patient with previously diagnosed type 1 diabetes presented with a nonplanned pregnancy with triplets. Her A1c at 14 weeks of gestation was 7.3%.

Rationale for Initiating Professional Continuous Glucose Monitoring
The provider usually manages pregnant women with type 1 diabetes using an insulin pump because of the rapidly changing needs for insulin during pregnancy. The patient had a hypoglycemic seizure due to insulin stacking and was transported to the hospital by ambulance. Her baseline treatment was a Medtronic Paradigm 722 pump, and she tested her blood glucose (BG) six to eight times daily.

Initial Professional Continuous Glucose Monitoring Results
Professional continuous glucose monitoring (CGM) revealed multiple hyperglycemic and hypoglycemic episodes, of which the patient was unaware of, because she did performed self-monitored blood glucose (SMBG) at times other than when the peaks or lows occurred (Fig. 11). Although the CGM device has 70 mg/dL as the default, the value should be changed to 60 for pregnancy. For pregnancy, target BG 2 hours postprandial is 120 mg/dL, and the patient did not always achieve that.

Therapy Adjustments
She initiated her pump very early in the pregnancy, and her pump downloads indicated hypoglycemia regularly. Premeal targets in pregnancy are 60 to 80 mg/dL, and she was having readings in the 50 mg/dL range.

After looking at the professional CGM output and at the patient’s A1c, the provider recommended personal CGM. The patient’s A1c started out at 9.9% before pregnancy and then declined, first to 7.3% and then to 5.6%, once on insulin pump therapy.

Response to Therapy Adjustments
In early September, the patient had some complications. She underwent an intrauterine laser surgery to separate blood vessels of the two identical twins within this triplet pregnancy that were sharing a blood source; one of the fetuses was not growing. She subsequently developed preeclampsia. She delivered via C-section at 22 weeks’ gestation. One male infant weighed 1 pound 4 ounces, and another male 1 pound 3 ounces; the third infant died within 18 hours of birth. Both live infants were placed on ventilators. The patient developed postpartum pneumonia and Escherichia coli infection. While being treated for the infections, she was taken off her pump and given insulin infusions for a couple of days and then returned to the insulin pump.

Conclusions
Professional CGM helped this pregnant woman with type 1 diabetes, to realize that she was experiencing hypoglycemic excursions and hyperglycemia on a daily basis, and drove the decision to pre-
scribe a personal sensor. The CGM technology enabled day by day adjustments that resulted in a shift from an A1c of 9.9% to 5.6%.

As the pregnant abdomen expands, placement of sensors has to change. Sometimes the patients may move the sensor from the abdominal area to the legs or buttocks.

This patient was compliant with her regimen after the hypoglycemic episode. The patient used her Bolus Wizard 100% of the time, and performed SMBG four to five times daily.

Often times with pregnancy in women with type 1 diabetes, especially with triplets, you may not have the best outcome. Her preterm labor was likely related either to the intervention they did at the hospital or to her extremely poor control before conception, at which time the patient was followed by a different provider. The two surviving babies are doing well.

**Disclosure Statement**

Kathleen C. Arnold, A.N.P., BC-ADM, is a speaker for Lilly, Medtronic Diabetes, NovoNordisk, and Sanofi Aventis.