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diabetics when they really should be called type 2 diabetics.

The recently completed National Institutes of Health–sponsored Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study and the study on gestational diabetes by the Maternal-Fetal Medicine Units Network (MFMU) used fasting plasma glucose levels of 105 mg/dL and 95 mg/dL, respectively, as thresholds for the exclusion of patients from the studies.

The HAPO study linked adverse pregnancy outcomes with glycemia levels that have traditionally been considered normal, and the MFMU study is yielding similar findings. However, given the studies' exclusion thresholds (which were set with ethical considerations in mind), we have disallowed ourselves the opportunity to firmly establish whether patients with impaired glucose tolerance should be considered type 2 diabetics.

Current diagnostic criteria for the population in general—by which a fasting blood glucose level (FBG) of 126 mg/dL indicates diabetes and an FBG of 100-125 mg/dL indicates impaired fasting glucose or prediabetes—were set several years ago when it became apparent that the previous diagnostic threshold of 140 mg/dL was too high. Studies showed clearly that complications relating to hyperglycemia—from retinopathy to nephropathy, neuropathy, and various micro- and macrovascular complications—occur in patients with FBG levels much lower than 140 mg/dL.

Recent research has shown, moreover, that long-term damage to the body may occur even in patients diagnosed with prediabetes. Investigators have reported, for instance, that approximately 10% of these patients have neuropathy and/or retinopathy.

When I see an FBG level of 100-125 mg/dL in a pregnant patient, even though this is by current standards considered "prediabetes" in the nonpregnant state, I consider this to be diabetes. This approach takes into account the fact that fasting plasma glucose levels during pregnancy are lower than actual values post pregnancy. It also takes into consideration something I have found in my discussions with patients: the observation that psychologically, these women are significantly more receptive to a serious approach to glycemic control if we're talking about diabetes rather than prediabetes or gestational diabetes.

With respect to the glucose threshold that will minimize adverse perinatal outcome, studies have shown that glucose levels of pre- and postprandial and fasting blood glucose under 140 mg/dL will be sufficient to achieve rates of congenital anomalies, spontaneous abortion, and perinatal mortality comparable with those seen in nondiabetic populations.

The target glucose threshold for the prevention of macrosomia and its accompanying complications, however, is significantly lower. Studies suggest that we need to achieve mean blood glucose levels of less than 100 mg/dL to prevent macrosomia (J. Matern. Fetal Neonatal Med. 2000:9;35-41). Fortunately, we have a bit more time to impact the rates of macrosomia since this complication develops later in pregnancy, in contrast to the development of congenital anomalies so early.

We still have much to learn about the exact levels of glycemia that are necessary to reduce complications, but our current knowledge that different glucose thresholds exist for different types of complications enables us to keep patients motivated to improve glycemic control.

Even when it's not possible to achieve optimal glycemic control, any improvement should be beneficial because it will reduce the rate of complications for a given glucose threshold.

As obstetricians work together to improve care for pregnant patients with type 2 diabetes, it is also important that we develop criteria for blood glucose measurement and monitoring. Should we all measure fasting blood glucose? Postprandial blood glucose? Right now, our approaches vary. We need consistency and clear definitions if we are to compare outcomes effectively.

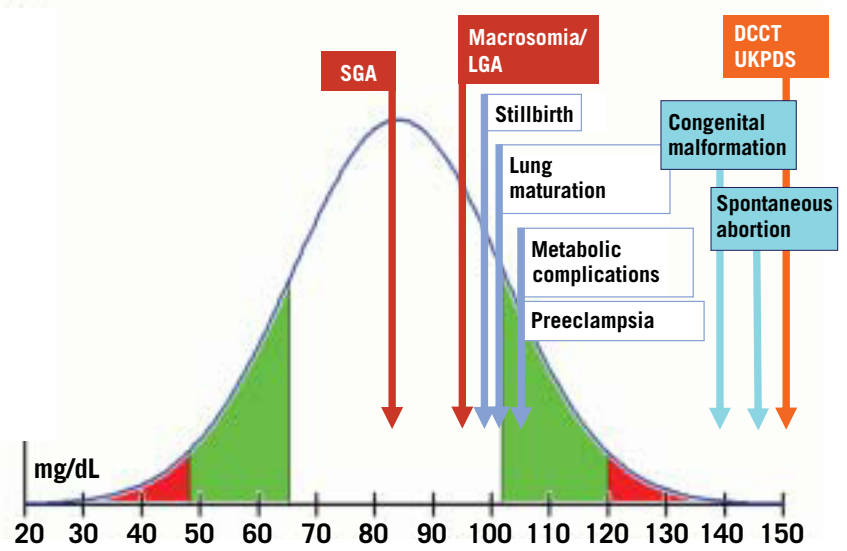
I always tell patients that if we work together, we will be able to improve outcomes, and I tell them never to give up. In the preconception phase, we aim for an FBG of less than 140 mg/dL, then we work on continuously lowering this level until, at around 20 weeks' gestation, we tighten glycemic control to prevent stillbirth, macrosomia, and metabolic complications.

We need to remember that diabetes in pregnancy is a chronic disease that is extremely demanding, requiring frequent blood glucose tests throughout the day, insulin injections or ingestion of oral hypoglycemic agents, frequent fetal testing, and adherence to a diet protocol. This all requires patient-physician cooperation.

Compliance in these patients should comprise all the above demands so that if a patient fails to adhere to the diabetic protocol, we can ask whether her failure to comply is based on her needs and expectations, or her physician's needs and expectations. In the end, we as obstetricians treat two patients whose needs sometimes coincide and sometimes collide. Our goal is to develop management protocols that maximize the mutual needs of both. ■

Dr. Langer said he has no disclosures relevant to this article.

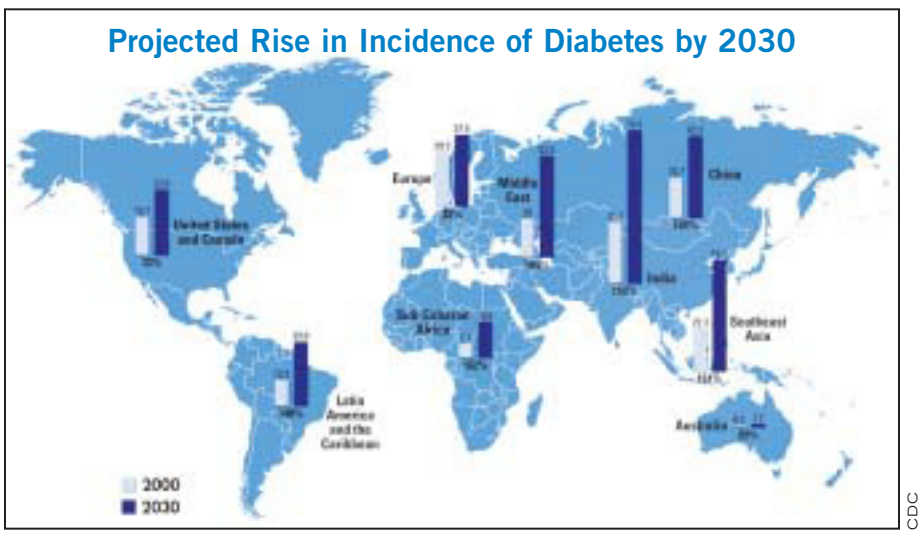
Spectrum of Mean Blood Glucose Thresholds Associated With Complications in the Pregnant Diabetic Patient



Note: The Diabetes Control and Complications Trial (DCCT) and the United Kingdom Prospective Diabetes Study (UKPDS) box represents the mean blood glucose threshold that these two major studies found for the prevention of complications of diabetes in nonpregnant subjects, and is part of this figure to demonstrate that the threshold for complications in pregnancy is much lower.

Source: Dr. Langer

Projected Rise in Incidence of Diabetes by 2030



CDC

Study: Metoclopramide May Not Raise Risks to Fetus

BY MARY ANN MOON

The use of metoclopramide to control nausea and vomiting in the first trimester does not increase the risk for congenital malformations, low birth weight, or perinatal death, according to a report in the New England Journal of Medicine.

These findings from a large retrospective cohort study "provide reassurance about the safety of metoclopramide," which has not been convincingly established until now, wrote Ilan Matok of Ben-Gurion University of the Negev, Beer-Sheva, Israel, and associates.

"Despite its extensive use, only a few studies have assessed the safety to the fetus of maternal exposure to metoclopramide during the first trimester, and the relatively small sizes of these studies limited their power to detect adverse effects of the drug," they noted.

The researchers assessed singleton deliveries between 1998 and 2007 at the largest HMO in Israel, where metoclopramide is the antiemetic drug of choice during pregnancy. Approximately half of the 81,703 infants in the study were born to Jewish parents and half to Bedouin Muslim parents.

A total of 3,458 (4%) of these infants were exposed to metoclopramide during the first trimester. The mean duration of exposure was 1 week.

The rate of major congenital malformations was 5.3% among exposed infants, compared with 4.9% among unexposed infants, a nonsignificant difference. This difference remained nonsignificant when data from pregnancies that were terminated were included in the analysis.

The rates of minor congenital malformations (3.8% vs. 3.5%) and of multiple malformations (2.5% vs. 2.3%) also were similar between exposed and nonexposed infants. There also were no significant associations between subclasses of congenital malformations and metoclopramide exposure, nor was there any clustering of anomalies among exposed infants.

When the data were analyzed according to subjects' ethnic backgrounds, the drug did not raise risks to infants of either Jewish or Bedouin Muslim parents (N. Engl. J. Med. 2009;360:2528-35).

Metoclopramide also was not associated with an increased risk of preterm birth, low Apgar scores, perinatal death, or low birth weight.

A subgroup of 758 mothers who took metoclopramide refilled their prescriptions at least once. No dose-response effect of exposure to the drug was found.

The researchers reported having no relevant conflicts of interest. ■