

Today's column focuses on treating diabetes before and during pregnancy. Part One featured Gestational Diabetes Mellitus.



Dr. Eric Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv.

Dr. Eric Johnson writes a column for this space every other Friday.

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Control diabetes before getting pregnant -- Part Two

Q. What are the differences in treating pregnant women who already have diabetes when they conceive?

This week's column focuses on the pregnant patient with pre-existing diabetes, either type 1 or type 2. These patients are different, of course, from those with gestational diabetes because they will have usually had at least some experience managing their diabetes.

Ideally, good management of diabetes starts before conception. Treatment standards before and during pregnancy are part of the American Diabetes Association's annual guidelines. It publishes the Guidelines on Treatment and Management of Diabetes for Health Care Providers each January. Watch for it at: www.diabetes.org

Although tight glucose control is recommended for patients with diabetes who get pregnant, this can be challenging! After all, they need to keep at this level of control for months, not just weeks—which can be the case with gestational diabetes.

While tight targets remain the "gold standard," this can be especially difficult for those with type 1, whose glucose levels tend to vary more than patients with type 2.

Before a diabetic woman gets pregnant, she should strive to achieve A1C targets of ~6.0 for at least a few months prior to conception. That holds for both type 1 and type 2 patients.

Numerous studies show that effective counseling and education on diabetes management -- before pregnancy -- can reduce complication rates dramatically. A diabetes educator and dietitian should always be part of a supportive team dedicated to helping women stay healthy and deliver healthy babies.

Concerns over complications

Women with poorly controlled diabetes can present with many different pregnancy complications, including:

- Cardiac: VSD, transposition of great vessels
- Anencephaly, Spina Bifida
- Sacral agenesis or caudal dysplasia
- Complications associated with polyhydramnios, oligohydramnios (i.e. growth retardation)
- Neonatal hypoglycemia (can be severe)
- Macrosomia
- Fractures
- Shoulder dystocia,
- Nerve palsies (Erb's C5-6)
- Pregnancy outcomes can be very poor with HTN/nephropathy

Treatment

Controversy exists over the roles of various insulin products for pregnant women. Although no insulins have official FDA indication in pregnancy, experience is greatest with NPH and Regular, since they are the oldest insulins on the market. NPH and Regular are Category B. And, recently the FDA gave Category B status to the newer insulins aspart (Novolog) and lispro (Humalog).

Many type 1 patients are on multiple daily injections with a basal insulin, such as glargine or detemir, and a rapid-acting insulin, such as aspart or lispro with meals.

A strong case could be made for a type 1 patient to stick with her regular insulin regimen, including glargine or detemir, if she is doing well and meeting target goals. Both are Category C.

Insulin pumps are an excellent option in pregnancy, particularly newer models that offer "real-time" glucose monitoring. They automatically sense blood glucose values every five minutes.

Type 1 patients will usually need dramatic increases in insulin during the last trimester. It's important for members of a pregnant woman's health care team to tell

her this may happen before it occurs. That will cut down on stress, which is good for any patient.

Metformin in pregnancy

Most, if not all, type 2 patients will be on Metformin when they get pregnant. That's because most of these women have polycystic ovarian syndrome and its accompanying infertility issues. Metformin is considered a Category B medication, and is often continued in the first trimester to help avoid miscarriage.

However, it will usually not be sufficient for glucose control. Then insulin will very likely become part of the treatment plan. Multiple daily injection programs then become routine, as with type 1 patients. Some providers feel more comfortable recommending NPH and Regular for pregnant women with type 2. Pumps are an excellent option for Type 2 patients using insulin as well.

Currently, there is no known role for TZD's (Actos, Avandia), Byetta, Januvia, or Symlin in pregnancy. Inhaled insulin (Exubra) may be a possible option, but there is little data on this, and the drug is currently classified as Category C. More experience will be needed before any of these choices become more common practice.

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[If you have comments about the column, or questions for Dr. Johnson's future columns, please contact gailhand@gwest.net](mailto:gailhand@gwest.net)