

Should Pregnant Women Be Tested for Hypothyroidism?

BY TIMOTHY F. KIRN
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LOS ANGELES — Recent evidence suggests many hypothyroid pregnant women are not identified as such by their medical providers, to the detriment of the mother and child, Dr. Jorge H. Mestman said at a meeting of the Obstetrical and Gynecological Assembly of Southern California.

The experts cannot reach a consensus on whether pregnant women should be routinely screened for thyroid disease, but even hypothyroidism that is subclinical prior to pregnancy appears to have a severe, negative impact on the pregnancy and child, said Dr. Mestman, director of the Center for Diabetes and Metabolic Diseases at the University of Southern California, Los Angeles.

"There is no agreement," Dr. Mestman said. "You have to decide in your office if you are going to check everybody for thyroid disease in the same way as for diabetes."

One important new study might not have been seen by many in the obstetrics community because it was published in an endocrinology journal,

he noted. The investigators attempted to see if the strategy of identifying women at high risk of thyroid disease (those with a personal or family history) and performing thyroid testing only in those women would pick up most cases.

They enrolled 1,560 pregnant women on their first prenatal visit, and tested their thyroid function and determined whether they had thyroid antibodies. Forty were found to have elevated thyroid-stimulating hormone (TSH) levels. Of those, 70% were in the high-risk group due to a personal history of thyroid or autoimmune disease, or a family history of thyroid disease.

But 12 of the 40 had no history, and would not, therefore have received testing according to the protocol being examined by the study (*J. Clin. Endocrinol. Metab.* 2007;92:203-7).

Chronic thyroiditis occurs in between 5% and 20% of women of child-bearing age, Dr. Mestman said. Subclinical hypothyroidism—a normal thyroxine (T4) level but an elevated TSH—may have an incidence of 2%.

Many studies have shown that hypothyroidism, even subclinical hypothyroidism, is associated with a two- to fivefold higher risk of miscarriage and premature delivery.

One study found that at age 7-9 years, children of mothers who were hypothyroid in pregnancy had a mean IQ 4 points lower than controls. The mean IQ of children of women who were hypothyroid during pregnancy and not treated was 7 points less (*N. Engl. J. Med.* 1999;341:549-55).

The detrimental effects of hypothyroidism presumably occur because the

mother produces all the thyroid hormone for her fetus during the first trimester at least, and fetal brains have been shown to have thyroid hormone receptors.

During the first trimester, T4 levels need to increase by 50%, which is why women who may be subclinical before conception can run into trouble. They cannot compensate for the increased demand.

By the second and third trimester, T4 levels return to normal; however, some women who become hypothyroid during the first trimester will become hypothyroid again after delivery. Those women will become hyperthyroid for the first 3 months after delivery, and then hypothyroid for approximately another 6 months.

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Of those, about 30% will become clinically hypothyroid within 5 years. All of these women should be followed for thyroid function after their pregnancy, Dr. Mestman said. The pattern can occur even after spontaneous abortion.

Treatment prevents pregnancy complications, Dr. Mestman said. In a series of 88 hypothyroid women, the pregnancy complication rate of those who never became euthyroid during their pregnancy was 32% (6 of 19 patients), compared with 17% in those

women who became euthyroid but only after 20 weeks' gestation (7 of 42), and 5% in those who became euthyroid before 20 weeks (1 of 21).

One of the tragedies observed in that series concerned the 30% already on levothyroxine prior to their pregnancy, Dr. Mestman said. Some were told to stop all medications when they became pregnant and they stopped their thyroid medication.

"This is a very common practice in many, many places," he said.

Another, more recent study also looked at the pregnancy complication rate in women who were euthyroid but who had thyroid peroxidase antibodies. They treated half of a group of 115 antibody-positive women with levothyroxine, and compared those women with 869 pregnant women who were antibody negative.

The treated antibody-positive women had a miscarriage rate of 3%, similar to the rate in the control group, 2%. But the untreated antibody-positive women had a rate of 14%. The treated women had a premature delivery rate of 7%, similar to the 8% for the control group. That compared with a rate of 22% for the untreated women.

Given those findings, Dr. Mestman recommended that pregnant, antibody-positive euthyroid women should be treated. The treatment should include a prenatal vitamin with 150 mcg of iodine. They should have TSH and T4 levels monitored every 4-6 weeks during the first 20 weeks of pregnancy. After 20 weeks, they should have their TSH and T4 measured once at 28 weeks and should take 50-75 mcg a day of levothyroxine. If the patient is already on levothyroxine, the dose should be increased by 25 mcg. ■

Diabetes Is Often Inadequately Managed During Pregnancy

BY TIMOTHY F. KIRN
Sacramento Bureau

LOS ANGELES — Recent research shows that even relatively minor elevations in blood glucose in pregnancy can have severe effects, and that diabetes in pregnant women is not being controlled as well as it should be, Dr. Jorge H. Mestman said at the Obstetrical and Gynecological Assembly of Southern California.

A short time ago, many experts believed that the problems of diabetes in pregnancy had been addressed and that it was easy for patients to do well. But that is not really the case, said Dr. Mestman, director of the University of Southern California Center for Diabetes and Metabolic Diseases in Los Angeles.

One study looked at a Danish registry of pregnant women with diabetes and found that this group of patients had elevated rates of stillbirth and congenital malformation relative to the general population, largely because their blood glucose was not under control (*Diabetes Care* 2004;27:2819-23).

Another recent study, looking at pregnant women with diabetes in Canada, found much the same thing. Moreover, these researchers compared pregnancy outcomes from 1988 to 2002 and saw almost no improvement over that time (*Obstet. Gynecol.* 2006;108:644-50).

Two other studies published within the last 2 years have shown that good glucose control could improve those outcomes, Dr. Mestman said.

One of those studies randomly assigned 1,000 women with gestational di-

abetes, who were between 24 weeks' and 33 weeks' gestation, to routine diabetes care and education or to routine care plus insulin therapy. The researchers reported that care and insulin therapy reduced the perinatal complication rate to 1% vs. 4% for care and education (*N. Engl. J. Med.* 2005;352:2477-86).

The second study looked at women in a gestational diabetes program who delivered at term, and compared the outcomes of those who had good glucose control and suboptimal glucose control. Good glucose control had a very rigorous definition in the study—an average fasting glucose level below 95 mg/dL, an average 1-hour postprandial level below 140 mg/dL, and an average 2-hour postprandial level of below 120 mg/dL.

More than one-third of the women with poor control (1,118 subjects) had poor pregnancy outcomes—which included macrosomia, large-for-gestational-age infants, hypoglycemia, jaundice, or stillbirth—compared with only 24% of those with optimal control (2,030 subjects; *Diabetes Care* 2007;30:467-70).

Treatment of the infants in the intensive care unit and cesarean deliveries was also more common in the poorly controlled women.

Although there has been some concern about the use of oral diabetes drugs in pregnancy being associated with congenital abnormalities and neonatal hypoglycemia, Dr. Mestman said that based on the literature and his institution's experience, there is no risk and that what differences have been seen are probably result from glycemic control. ■

Use Obstetric History to Identify Diabetes Before Conception

BY SHERRY BOSCHERT
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SAN FRANCISCO — The first step in preparing a diabetic woman for pregnancy is noticing that she has diabetes before she conceives.

Women with type 2 diabetes often don't get diagnosed until pregnancy, by which time it's too late to reduce the risk of congenital anomalies through better glycemic control, Dr. Ingrid Block said at a meeting on diabetes and endocrinology sponsored by the University of California, San Francisco.

Congenital anomalies in infants of diabetic mothers occur as early as 5 weeks after the last menstrual period (for caudal regression) and as late as 8 weeks after the last period (for cardiac anomalies).

"If you don't sit down with that patient and ensure that she plans her pregnancy and that she has good glycemic control before conception, you run the risk that she'll find out she's 8 weeks pregnant and she has missed the opportunity" to avoid these congenital anomalies, said Dr. Block, of the university. ■

With any new female patients, pay attention to their obstetric histories, she urged. If a nondiabetic woman has delivered a large baby or had gestational diabetes, she's at increased risk for developing type 2 diabetes and should be screened for it periodically.

Congenital anomalies occur in 6%-10% of pregnancies among diabetic women with uncontrolled hyperglycemia, compared with an incidence of 2% in nondiabetic women. Emphasize effective contraception until diabetes patients achieve stable glycemia, Dr. Block said.

Preconception counseling and care should help women optimize glycemic control before pregnancy, which significantly reduces the risks of anomalies and fetal death, studies have shown. Women with type 2 diabetes should transition before conception from managing their diabetes using diet alone or oral therapies to using insulin, she added.

Identification and treatment of long-term complications of diabetes will give physicians an opportunity to warn some patients about difficult or nonviable pregnancies. ■