

GESTATIONAL DIABETES: ARE WE DOING TOO MUCH?

Monceny Chatman, MD, FACOG (Maternal-Fetal Medicine)

The disproportionate deposition of excess fat in the fetal shoulders and chest almost doubles the risk for shoulder dystocia. Some studies have reported that even when confounding factors such as maternal weight, age, and race are controlled for, macrosomia can be independently attributed to gestational diabetes. For the neonate, problems with hypoglycemia, respiratory distress syndrome, electrolyte abnormalities, and hyperbilirubinemia must be considered in the hours to days of life after delivery. All of the aforementioned concerns lead us to want to “control” gestational diabetes. But does management in pregnancy really affect outcomes?

THE SCREENING

Although many would agree that all pregnant patients should be screened for gestational diabetes mellitus, there is no consensus on how this should be done. Some only advocate screening by obtaining a patient’s history or assessing clinical risk factors. If all of the low-risk criteria are met, many would state that there is no need for any laboratory screening test. Not all patients require the experience of the famous “glucola cocktail”. There are no standard guidelines. In 2003, the U.S. Preventive Services Task Force concluded that “because of the lack of high-quality evidence concerning critical issues, we are unable to determine the extent to which screening has an important impact on maternal and neonatal health outcomes.” There is no direct evidence from a randomized controlled trial or indirect evidence that confirms a complete link between screening and improved health outcomes. Well how can this be? Studies of untreated gestational diabetes are older, flawed, and would not be considered consistent with the practices of modern obstetrical care. In the more recent studies, women received some type of treatment for gestational diabetes based on the feared consequences of lack of treatment. For these reasons, the Task Force considered the literature “scant and mixed as to whether untreated gestational diabetes is associated with increased perinatal mortality” and “the extent to which gestational diabetes mellitus is truly associated with perinatal

mortality remains unclear.” To begin the quest for the evidence, in 2005, Crowther *et al.* conducted a randomized clinical trial to determine whether treatment of women with gestational diabetes mellitus reduced the risk of perinatal complications. In this study, 1000 women between 24 and 34 weeks’ gestation who had gestational diabetes were randomly assigned to receive dietary advice, blood glucose monitoring, and insulin therapy as needed (the intervention group) or routine care. The rate of perinatal complications (defined as death, shoulder dystocia, bone fracture, and nerve palsy), was significantly lower among the infants of women in the intervention group than among the infants of women in the routine-care group (1 percent vs. 4 percent; RR adjusted for maternal age, race or ethnic group, and parity, 0.33; 95% CI, 0.14 to 0.75; P=0.01). This study is certainly a step in the right direction. Despite the limited evidence of any benefit to the overall population and no recommendation from the American College of Obstetricians and Gynecologists (ACOG), 94% of surveyed Fellows in office-based practices reported using universal screening. The lack of “sufficient evidence” did not stop the assignment of clinical recommendations for management of this disease by committees such as the American Diabetes Association and ACOG alike. Many would argue that even though the epidemiology may not support management, to completely ignore the potential clinical consequences of this disease would be costly.

THE TREATMENT

With the goals of decreasing the likelihood of macrosomia and neonatal hypoglycemia, treatment of gestational diabetes is deemed important. Dietary therapy and exercise are considered key in the initial treatment of the disease. Often times medical therapy is necessary and the once, gold standard insulin therapy, now has to make room for alternative oral hypoglycemic agents such as glyburide. Although still not FDA-approved for use in pregnancy, this second-generation sulphonylurea has minimal transport across the placenta, thereby providing some reassurance regarding its safety. In 2000, Langer *et al.*, in a randomized trial comparing glyburide to insulin in the treatment of gesta-

tional diabetes, concluded that there was no difference between the two groups in maternal complications or neonatal outcomes. The rate of maternal hypoglycemia was lower in the glyburide group and only 4% of this group required insulin therapy. Also, glyburide was not detected in the cord blood of any infant in that group. However, glyburide therapy will not be an appropriate treatment for all gestational diabetics. In 2006, Kahn *et al.* performed a cohort study attempting to identify those who were not ideal candidates for glyburide therapy. The oral hypoglycemic was reported to be more likely to fail in women diagnosed at < 25 weeks’ gestation, older than 34 years of age, higher in parity, and those with a higher fasting blood glucose level on the diagnostic 3-hour GTT. So while glyburide offers a less expensive, more comfortable alternative for some patients, it may not serve as a replacement to insulin therapy for all diabetics. With the goal of preventing adverse pregnancy outcome, management plans usually include some type of increased fetal surveillance in those patients requiring medical therapy. Again, there is no ‘standard’ form of testing recommended and the evidence to determine the appropriate antenatal testing for women with diet-controlled disease is deemed “insufficient”.

CONCLUSION

The approach to gestational diabetes, like many issues in obstetrics, lends itself to controversy and management despite a preponderance of evidence for support. Some would agree that the conservative approach to management and treatment of this disease, with the goals of reducing morbidity and mortality, is substantiated enough. Those of us having had the experience of dealing with complications and adverse pregnancy outcomes associated with diabetes would tend to agree.

The author of this article has no business interest in Healthy Connections Homecare Services, Inc. The viewpoints and opinions expressed in this article do not necessarily represent the views or opinions of Healthy Connections Homecare Services, Inc.



OUR SERVICES

- Pre-Term Labor Program
HUAM & Terbutaline Pumps
- Hyperemesis Program – Reglan®/Zofran® Pumps
- In-Home IV Hydration
- Total Parenteral Nutrition (TPN)
- Infusion/Antibiotic Therapy
- In-Home Non-Stress Tests
- Pregnancy-Induced Hypertension Program
- Gestational Diabetes Teaching Program
- 17-OH Progesterone Injection Program

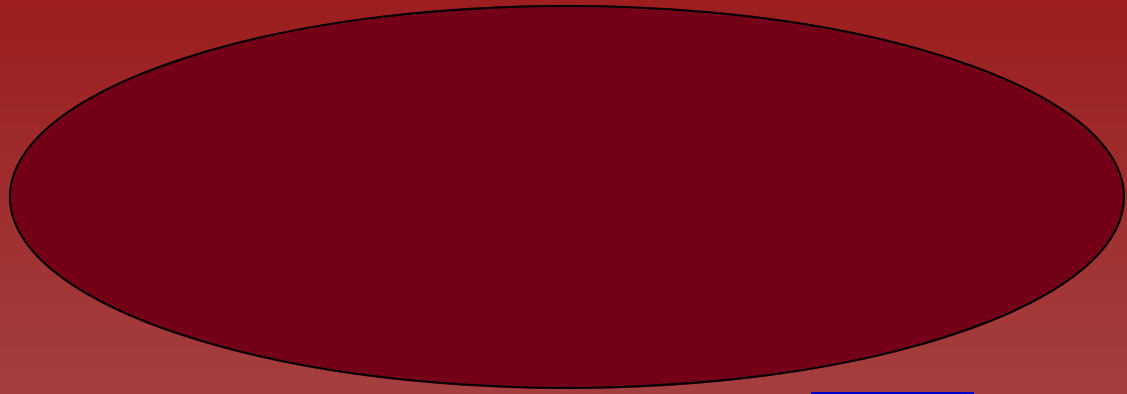
REFERRAL LINE:
1-888-304-1800

OUR STAFF

Gaylynn Thomas, RN, BSN COO
Timothy B. Waterhouse, MD, FACOG Medical Director
John Gee, RPh Pharmacy Director

Cheryl Bryant, RN	Angela Miller, RN, BSN
Laurie Cunningham, RN, BSN	Cathy Olliff, RN
Holly Dutton, RNC	Stacey Rainwater, RN, BSN
Shquetta Flanigan, RN, BSN	Cynthia Ramirez, RN
Katy Gerritt, RN, CCM	Monique Rhodes, RN, BSN
Geri Gigliotti, RN	Holly Rorick, RN, BSN
Elvia Gomez, RN, BSN	Margaret Sissons, RN, BSN
Melodie Green, RN, MSN	Sue Thompson, RN, BSN
Julie Kearney, RN, BSN	Brenda Ventura, RN
Bobbie LeBlanc, RN, BSN	Abbey Young, RN, BSN
Lydia Marsh, RN	

Monique Crochet, MEd., Clinical Liaison (Houston)
Lisa Hunter, Clinical Liaison (Houston)
Laura Vance, Clinical Liaison (Dallas)



ADDRESS:

515 N. SAM HOUSTON PARKWAY EAST
SUITE 610
HOUSTON, TEXAS 77060



A FEW WORDS FROM



We know the Obstetricians who use our services for their patients have a choice of high-risk pregnancy homecare providers. Healthy Connections appreciates those of you that continually use our services because of the value we provide to you and your pregnant patients. Obstetricians that have not given us a chance to prove how well we educate and care for your patients at home may have some misconceptions about us. To set the record straight for all of our providers and potential clients, Healthy Connections has:

- **CHAP-Accredited Nursing Agency (Community Healthy Accreditation Program)**
 - **FDA-Approved Home Uterine Activity Monitors (HUAM)**
 - **FDA-Approved Pumps for Terbutaline/Zofran/Reglan**
 - **Nursing Staff with 100+ Years of High-Risk OB Experience**

Healthy Connections is honored to be selected to care for your high-risk OB patients and will do our best to meet your needs and those of your patients and staff. Please feel free to call us if you have questions about our company or the services we provide .

Thank You!



GESTATIONAL DIABETES: ARE WE DOING TOO MUCH?

Moncenyia Chatman, MD, FACOG (Maternal-Fetal Medicine)

Many maternal diseases complicate pregnancy management and outcomes with diabetes mellitus at the forefront as a major cause of maternal and perinatal morbidity. Gestational diabetes represents almost 90% of those cases of diabetes complicating pregnancy. With a commonly stated prevalence of 2-5%, some studies have reported rates as high as 14% in high risk populations such as African Americans, Hispanic Americans, Asian, and Native Americans. With approximately 135,000 cases of gestational diabetes diagnosed yearly in the US, these statistics will likely increase as obesity continues to rise in this country and our pregnant population continues to show an increasing trend toward advanced maternal age. While it is often times difficult to find 'standards' for diagnosis and management of issues in pregnancy, the goal of reducing maternal, perinatal, and neonatal morbidity by decreasing the levels of maternal hyperglycemia has been well-adopted. However, some continue to question whether it truly makes a difference in the long-run.

THE CAUSE

Gestational diabetes is defined as "carbohydrate intolerance of variable severity with onset or first recognition during pregnancy. The definition applies regardless of whether insulin is used for treatment or the condition persists after pregnancy. It does not exclude the possibility that unrecognized glucose intolerance may have antedated the pregnancy". Pregnancy, the third trimester in particular, is marked by normal physiologic insulin resistance and decreased sensitivity to insulin action. This resistance is brought on by placental production of hormones such as human placental lactogen, progesterone, cortisol,

and prolactin. This alteration of glucose metabolism is well-documented, with insulin resistance increasing as pregnancy progresses.

THE COMPLICATIONS

Mother, fetus, and neonate are all considered when discussing the potential complications of any disease, and gestational diabetes is no exception. For the mother, there is the concern for the increased risk of developing pre-eclampsia and the development of overt diabetes later in life. The risk of cesarean delivery is always a consideration in management. For the fetus, fears of macrosomia and its consequences of shoulder dystocia and subsequent brachial plexus injury loom in the minds of those caring for the diabetic mother. The maternal glucose level determines the glucose level in the fetus since glucose freely crosses the placenta. Fetal hyperglycemia subsequently causes stimulation of insulin production. With insulin as a major fetal growth hormone, hyperinsulinemia causes excessive fetal growth especially in fat tissue.

