

GESTATIONAL DIABETES – (CHD MATERNITY PROGRAM)

I. DEFINITION:

Gestational diabetes is a form of diabetes which manifests itself during pregnancy as a result of hormonally mediated stress on carbohydrate metabolism and familial predisposition to diabetes. Glucose intolerance may be transitory for the duration of the pregnancy, but frequently recurs later in life. With current management approaches, gestational diabetes should no longer be associated with poor pregnancy outcome.

II. CLINICAL FEATURES:

A. Subjective Information

Client will probably not be aware of any symptoms.

B. Objective Information

1. Glucosuria value of 1+ or greater on two or more occasions, or 2+ or greater on one occasion (not first urine of the day)
2. Hyperglycemia, previously demonstrated
3. Macrosomia
4. Polyhydramnios
5. Recurrent or chronic monilial-vulvo-vaginitis or urinary tract infections
6. Obesity – BMI > 26 pre-pregnancy
7. Hypertension

C. Risk factors known to be associated with gestational diabetes are:

1. Family history of diabetes in first degree relatives, (parents, siblings or children).
2. Personal history of abnormal glucose tolerance test or hyperglycemia
3. Obesity - greater than 15-20% above recommended weight or pre-pregnancy BMI > 26
4. Maternal age over 25
5. Native American, Hispanic, or African American
6. Polycystic Ovary Syndrome (PCOS), cardiovascular disease, hypertension, hyperlipidemia
7. Obstetrical history of:
 - a. Large baby - over 4000 gm (8 lbs.13 oz)
 - b. Multiparity of 5 or more
 - c. Polyhydramnios
 - d. Stillbirth
 - e. Fetal congenital anomalies
 - f. Two or more spontaneous abortions

III. MANAGEMENT PLAN:

A. Laboratory Studies

1. Blood Glucose Screen:

- a. Maternity clients should have a **one hour 50 gram** glucose screening (challenge) routinely at 24-28 weeks gestation.
- b. Early blood glucose screening is only indicated for clients when the following criteria are present: polydipsia, polyphagia, and polyuria, in combination with persistent glycosuria. For these clients, a one hour 50 gram blood glucose screening (Gestational Diabetes Screen) should be done upon presentation to clinic and again at 24-28 weeks if not positive at earlier test. Do not repeat the screening at 24-28 weeks if the early screening was done at 20-24 weeks.
- c. Clients who are previously diagnosed as having diabetes should not be screened, but referred to the clinician. The clinician then refers to his/her protocols for management of the client.
- d. The client should be screened by using a glucose challenge:

Client is given 50 grams of standard glucose solution to be ingested in ten (10) minutes without regard to time of day or last meal.
 - 1) Client should not eat, drink, or smoke for one hour.
 - 2) Draw venous sample and submit to contract laboratory.
 - 3) A venous blood glucose level equal to or greater than 140 mg/dl indicates a positive screen.

2. Rescreening by Glucose Tolerance Test (GTT):

- a. If the client has a positive screen, a fasting and three hour oral GTT should be scheduled. The client should be instructed to return at the appointed time in a fasting state of 8 hours or more. After the fasting blood sample is drawn, give the client a **100 gm** glucose solution to be ingested in 10 minutes; then at one, two and three hour intervals draw venous blood glucose samples utilizing gray top tubes; send all samples to contract lab with current laboratory forms (the form should indicate Oral GTT and hour, and label the requisition stating "one-half hour blood not drawn").
- b. The client should remain seated during the three hours and should not eat, drink, or smoke. The client will be referred to the medical consultant if two or more of the following blood (venous plasma) glucose levels are met or exceeded:

Fasting:	Greater than 92 mg/dl
1 Hour:	Greater than 180 mg/dl
2 Hour:	Greater than 153 mg/dl
3 Hour:	Greater than 140 mg/dl

IV. CLIENT EDUCATION:

A. The client should receive counseling/client education as to the following:

1. Interaction of pregnancy and diabetes
2. Importance and frequency of self blood glucose monitoring
3. Exercise
4. Nutrition - clients should be referred to OSDH nutritionist for nutrition assessment and nutrition plan
5. Risk of developing overt diabetes mellitus within 5 to 10 years (usually Type #2, approximately 30-60%)
6. If the client cannot be controlled with dietary measures, she should be referred to a high risk provider

V. REFERRAL:

The women with a positive three hour oral glucose tolerance test should be referred to the APRN or OB provider. The health care provider will then refer to his/her guidelines for management of the client.

VI. FOLLOW-UP:

Postpartum follow-up of the client with gestational diabetes is the responsibility of the health care provider. The nurse may assist with the following:

- A. Because women with a history of gestational diabetes mellitus (GDM) have a greatly increased subsequent risk for diabetes, they should be screened for diabetes 6-12 weeks postpartum, and should be followed up with subsequent screening annually by the private health care provider for development of diabetes or pre-diabetes.
- B. If a client presents to a service site clinic and a postpartum glucose screen is indicated:
1. The client should be instructed to return at the appointed time in a fasting state of 8 hours or more. Draw a fasting venous sample and submit to contract laboratory.
 2. The client should be referred to private physician if the fasting blood glucose level is equal to or greater than 110 mg/dl.
- C. Clients should be counseled to reach their pre-pregnancy weight 6-12 months after delivery. If still overweight (BMI \geq 25), counsel or refer to the nutritionist for counseling to lose and maintain loss of at least 5-7 percent of body weight slowly, over time (10-14 pounds for weight of 200), reducing intake of calories and fat.
- Offer the NDEP tip sheet for preventing Type 2 diabetes after gestational diabetes: <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=93>
- Choose healthy foods such as fruits and vegetables, fish, lean meats, dry beans and peas, whole grains, and low-fat or skim milk and cheese.
 - Choose water and smaller portions of healthy foods.
 - Be active at least 30 minutes, 5 days a week (moderate activity such as walking).

- D. Infants of gestational diabetic women should be referred to the infant's primary care provider for follow-up if available.
- E. Educate women regarding the need for family planning to assure optimal glycemic regulation from the start of any subsequent pregnancy.
- F. As always, encourage breastfeeding. It may lower the child's risk for type 2 diabetes and helps fight infections and reduces allergies. Breastfeeding also helps with mom's weight loss by using up extra calories.
- G. Advise women to seek medical attention if they develop symptoms suggestive of hyperglycemia (polyuria, polydipsia, and unexplained weight loss).
- H. Advise women that if they become pregnant again, they have a greater risk of gestational diabetes with future pregnancies, and also an increased risk (30-60%) of developing diabetes later in life.

REFERENCES:

- American Diabetes Association. Standards of Medical Care in Diabetes. *Diabetes Care*. 2011;34(Suppl 1):S11-S61.
- Gabbe, S.G., Niebyl, J.R., Galan, H.L., Jauniaux, E. R. M., Landon, M.B., Simpson, J.L., Driscoll, D.A., (2012). *Obstetrics: Normal and Problem Pregnancies* (6th ed.). Philadelphia, PA: Saunders
- Kriebs, J. M., & Gregory, C. L. (2005). *Varney's pocket midwife* (2nd ed.). Sudbury, MA: Jones and Bartlett.
- Metzger, B.E. (2011). Detecting and diagnosing gestational diabetes. *Physicians Weekly*. 30. Retrieved from: http://www.physiciansweekly.com/Features/11_30/gestational_diabetes.html
- Nursing Press.Guidelines for Diagnosis of Hyperglycemia in Pregnancy – 2011
<http://www.cdph.ca.gov/programs/cdapp/Documents/MO-CDAPP-HyperglycemiaAlgorithm-7-18-11.pdf> Accessed 9/8/12