Review Article

Gestational Diabetes : Screening and Treatment

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Abstract

Gestational diabetes is a form of diabetes which affects pregnant women. It is believed that the hormones produced during pregnancy reduce a woman's receptivity to insulin, leading to high blood sugar levels. Gestational diabetes affects about 4% of all pregnant women. Hormones involved in development of placenta results into insulin resistance in patients with GDM. When body is not able to use insulin due to insulin resistance it develops into gestational Diabetes. Screening,for GDM followed by good glycemic contol of pregnant women with GDM have implications for the positive health of the mother and developing child not only during index pregnancy but also for future development of diabetes in both.

Key Word : GDM-gestational diabetes

Introduction

Gestional diabetes (GDM) is a controversial entity with conflicting guidelines and treatment.diagnosis and management of this disorder have beneficial effects on maternal and neonatal outcomes.

SCREENING FOR GDM

Risk factors for GDM include current glycosuria,diabetes in first degree relative,H/o of glucose intolerance ,marked obesity and previous infant with macrosomia.Experts recommends a two step testing consisting 50 g non fasting one hour glucose challenge screening test, between 24 and 28 weeks of gestation, followed by a 100 g ,3 hour oral GTT in women with a positive screening test(1).

It would be advisable to screen for GDM at first antepartum visit in women with high risk of GDM..In Indian women screening is advisable at first registration,end of first and second trimester,and middle of third trimester

DIAGNOSIS OF GDM

The diagnostic test for GDM consists of 100 g 3 hour oral GTT in women who screened positive..Gestional diabetes is diagnosed if any two or more plasma glucose values meet or exceed the following values on OGTT (2).(carpenter and coustan modification of O'sullivan and mahan's criteria)(3).

Table 1; diagnostic criteria for GD

Plasma glucose (mg%)	fasting	1 hour	2 hour	3 hour
	95	180	155	140

The world health organization recommends screening and diagnosis using a 75 G OGTT

Table 2 ;WHO's 75 OGTT criteria(4)

Plasma glucose (mg%)	fasting	2 hours
	126	140

American diabetes association recommends diagnosis of GDM with 75 g OGTT, but applying carpenter and coustan cut off values

Table 3: ADA;S 75 g OGTT (5)

Plasma glucose (mg%)	fasting	1hours	2 hour
	95	180	155

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TREATMENT OF GD and GLUCOSE TARGET (6)
Table 4; Treatment targets for women with GDM

Test	glucose level (mg%)
Fasting	<96
1 hour postprandial	<140
2 hour postprandial	< 120 to 127

TRATMENT STRATEGIES

Pharmacotherapy is indicated when diatery therapy is inadequate. Insulin is the first line of drug for GDM .Single ,mixed or mixed and split insulin regimens with short acting regular insulin and intermediate acting insulin such as isophane (NPH) are recommended.insulin is typically stared at dosages of 0.7 units per kg per day based on prepregnancy weight, given in divided doses.two third of insulin given in morning and remainder is given before dinner.

Short acting insulin analogues such as Lispro and Aspart are being increasingly used in pregnancy.Little data is available on use of long acting insulin analogues such as glargine and detemir.thus NPH is intermediate acting insulin of choice in GDM.

Most women with GDM donot require insulin therapy following delivery,.approximatly 50% of women with GDM develop type 2 DM within 5 to 10 years(7).

Role of oral hypoglycemic agents (OHAs) in GDM.

OHAs are not recommended for use in pregnancy. There is risk of congenital anamolies and fetal hypoglycemic episodes through stimulation of fetal pancreas.Second generation sulphonuylurea, especially glibenclamide donot cross placenta and can be safely used in GDM (8) .Metformin reduces incidence of GDM in women with PCOS from 23 % to 3%.Use of metformin in GDM can be viable alternative to insulin.

The glucosidase inhibitors being only locally active in the intestine may be used in GDM without fear of adverse effects (9) .No data is available for use of Thiaozolidinediones in pregnancy.

References

1. Metzger, Coustan DR, Summary and recommendation of fourth interanational conference on geststional diabetes. Diabetes Care.1998;21 ,B161-B167
2. American Diabetes association. gestational diabetes mellitus. Diabetes Care. 2004: 27: S88-S90
3. Carpenter MW, Coustan DR. Criteria for screening tests for gestational diabetes. Am J Obstet Gynecol 1982; 144: 768-73.
4. Alberti KG , Zimmet PZ, Definition, diagnosis and classification of diabetes mellitus and its complication. Diabet Med.1998:15(7):539-553
5. American diabetes association. gestational diabetes mellitus. Diabetes Care. 2003: 26: S103-S105.
6. Metzeger BE, Buchanan TA, Coustan DR ,Summary and recommendation of fifth interanational conference on geststional diabetes. Diabetes Care.2007;30(12) ,S251-S260
7. Kim C, Herman WH, Vijan S, Efficacy and cost of postpartum screening strategies for diabetes among women with histories of GDM, Diabetes Care,2007:30950;1102-1106
8. Langer O, Conwway D, Berkus M et al, There is no association between hypoglycemic use and fetal anomalies,AMJ Obstet Gynecol, 1999: 180 (1);S38
9. Coniff RF,Seaton TB,et al.Reduction of glycosylated haemoglobin and post prandial hyperglycemia by acarbose in patients with NIIDM, Diabetes Care ,1995:18:817-20