



ROLE OF DIPSI GUIDELINES AS A SCREENING FOR GESTATIONAL DIABETES MELLITUS

Obstetrics & Gynaecology

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ABSTRACT

Aims & Objectives:- This study aimed to evaluate validity of DIPSI guidelines as a screening for gestational Diabetes Mellitus. This study also estimate the incidence of Gestational Diabetes Mellitus and evaluate neonatal outcome in patients of Gestational Diabetes Mellitus.

Material and Methods:- A total of 200 antenatal patients after excluding pre gestational diabetes were screened for GDM with 75 gm oral glucose irrespective of their last meal timing and venous plasma was drawn at 2 hours (DIPSI). Pregnant women with 2 hour plasma glucose ≥ 140 mg/dl underwent 100 gm glucose tolerance test as per Carpenter and Coustan criteria to diagnose Gestational Diabetes Mellitus and rest were classified as normal glucose tolerant (NGT) women.

RESULTS:- The incidence of GDM was 5.6 % using the DIPSI method and 3.6 % using Carpenter and Coustan criteria. Age ≥ 25 years, BMI ≥ 25 Kg/m² family history of diabetes were the risk factors for GDM. GDM was more frequently associated with pregnancy induced hypertension, Polyhydramnios, NICU admission.

CONCLUSION:- DIPSI recommended 75gm oral glucose challenge test irrespective of the last meal is a very simple, cost effective and feasible procedure for universal screening and diagnosis of GDM.

KEYWORDS

Gestational Diabetes Mellitus (GDM), Diabetes in pregnancy study group India (DIPSI), Carpenter and Coustan Criteria.

INTRODUCTION

Pregnancy is a diabetogenic state associated with increased insulin resistance. Gestational diabetes mellitus is carbohydrate intolerance of variable severity with onset or first diagnosed during pregnancy. Diabetes in pregnancy study group of India (DIPSI) recommends universal screening for gestational diabetes in India. This study will help us to diagnose Gestational Diabetes Mellitus at the earliest with a simple, feasible and economical test.

MATERIALS AND METHODS:-

This was a prospective observational study conducted in the Department of Obstetrics and Gynaecology, PMCH, Patna for a period of 1 Year from May 2019 to May 2020. A total of 200 consecutive antenatal patients were screened for GDM after excluding pre gestational diabetes. Informed consent was taken from all patients. Later irrespective of their last meal pregnant women were given 75 gm oral glucose load and venous plasma was drawn at 2 hours. Pregnant women with 2-hour plasma glucose ≥ 140 mg/dl (DIPSI criteria) underwent 100 gm Glucose Tolerance Test as per carpenter and Coustan criteria to confirm Gestational Diabetes Mellitus and rest classified as normal glucose tolerant. All women with GDM were followed up as per standard antenatal protocol.

Appropriate treatment/interventions for GDM were administered as per requirement. Maternal and fetal outcomes were recorded.

The parameters include age, family history of diabetes, gravidity, Maternal BMI, blood pressure, blood sugar level after DIPSI, basic sugar level after Carpenter and Coustan criteria, mode of delivery, neonatal birth weight, APGAR Score at 1 minute, NICU admission.

RESULTS:-

Table 1:- Association between various factors and DIPSI positive subjects.

Factors	DIPSI Positive (N=14) (%)	DIPSI Negative (N=186) (%)	P value
Age	6(42.85)	66(35.48)	0.17
BMI	10(71.42)	38(20.4)	<.0001
Family History	4(28.57)	9(4.8)	0.015
Polyhydramnios	3(21.42)	3(1.6)	0.016
Twin pregnancy	0	2(2.1)	1
PIH	4(28.5)	4(2.1)	0.002
NICU Admission	10(71.42)	39(20.9)	<0.0001

Table 2 :- Association between various factors and GDM subjects.

Factors	GDM (N=10) (%)	Non GDM (190) (%)	P value
Age ≥ 25 Yrs.	6(60)	60(31.57)	0.026
BMI ≥ 25 Yrs.	8(80)	40(21.05)	0.001
Family History	4(40)	8(4.21)	0.002

Parity	2(20)	3(1.57)	0.006
Twins	0	2(1.05)	1
PIH	5(50)	3(1.57)	0.001
NICU	8(80)	40(21.05)	0.001

RESULTS:-

It was a prospective observational study including 200 pregnant women out of 200 pregnant women 14 women had OGCT Positive as per DIPSI Criteria. 10 out of these 14 DIPSI positive pregnant women had positive OGTT with 100gm glucose (Carpenter and Coustan Criteria) and were termed as Gestational Diabetes Mellitus.

Among the DIPSI Positive Subjects statistically association significant was found with factors like BMI, family history of diabetes; polyhydramnios, PIH and NICU admission. Majority were delivered by LSCS (58%) followed by normal delivery (42%). Incidence of macrosomic neonates was higher in DIPSI positive study group.

According to Jovanovic L et al, advanced maternal age, family history of diabetes and obesity are risk factors for GDM. In our study the GDM increased with age.

Das et al found that pre pregnancy, overweight or obesity predisposes to GDM by 25%. In our study 80% women with GDM had BMI ≥ 25 Kg/m² which confirms that increased BMI is a risk factor for GDM. GDM also increases the risk of diabetes in future. Hence, they have to do lifestyle modification or exercise or pharmacological intervention in order to delay the onset of overt type 2 diabetes mellitus in later life.

In our study the most common complications seen in GDM mothers were PIH (50%), Polyhydramnios while G affar et al and Jendal et al found that 60% and 48% of GDM mothers respectively had PIH.

Cesarean Delivery rate in the study by Kalra et al was 78.8% among the GDM patients with arrest of labor being the most common indication. Naylor et al reported Cesarean section rate of 20% for glucose tolerant women, 29.6% for untreated GDM women and 33.6% for treated GDM women. The high rate of Cesarean section among women with GDM is possibly a consequence of the diagnosis and not the condition. Balaji et al and Kalra et al reported 9.9 % and 18% incidence of macrosomia in GDM mothers. Newborn of GDM mothers were observed in NICU as per protocols of department of neonatology.

CONCLUSION

DIPSI recommended 75gm oral glucose challenge test irrespective of the last meal is a very simple, fast, effective and feasible procedure for universal screening and diagnosis of GDM. Advanced maternal age, family history of diabetes and obesity are important risk factors for GDM.

Pregnancy induced hypertension and polyhydramnios are commonly

associated complications in women with GDM. Increased rate of cesarean delivery in women with GDM contributes to increased maternal morbidity. Adequate glycemic control in antenatal period might reduce the incidence of macrosomic infants.

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