



Return Rate for Postpartum Glucose Tolerance Test in Women Diagnosed With Gestational Diabetes

KEYWORDS

Gestational Diabetes, return rate, postpartum

Dibu Sam

Assistant Professor, Department of Obstetrics and Gynecology, Christian Medical College Vellore, Tamil Nadu: India, 632004

Ruby Jose

Professor, Department of Obstetrics and Gynecology, Christian Medical College Vellore, Tamil Nadu: India, 632004

ABSTRACT **AIMS AND OBJECTIVES:** To determine the return rate for postpartum glucose tolerance test in women diagnosed with gestational diabetes, correlate the follow up rate with type of GDM management and outcome and use it for patient counseling at discharge.

MATERIALS AND METHODS: A retrospective analysis of all patients delivered at Christian Medical College Hospital Vellore from 01/01/2015 to 31/12/2015 was done and those who were diagnosed as GDM were followed up to assess the rate of OGTT between 6 weeks and 6 months postpartum.

RESTUTS: The overall return rate for postpartum GTT was 30 % (656/2183). Post-partum follow-up was highest for those managed with Insulin during antenatal period (53.1 %) and of these 58% had blood glucose levels in the diabetic range.

CONCLUSION: Postpartum follow-up rate of patients with GDM is low overall and more alarming is the low follow-up rate of those who were managed with Oral hypoglycemic drugs and Insulin during pregnancy

INTRODUCTION

Gestational diabetes mellitus (GDM) is a common medical complication of pregnancy, with a prevalence of 17% in the HAPO study population (Boyd E Metzger et al., 2008), 3.8 to 21% in India (Seshiah 2009; Swami et al., 2008; Zargar et al., 2004) and 15% in our hospital. GDM may be viewed as an unidentified preexisting disease or the unmasking of a compensated metabolic abnormality by the added stress of pregnancy. Women diagnosed to have GDM are at an increased risk of future diabetes predominantly type 2 DM as are their children (Dornhorst & Rossi, 1998). Indian women with GDM have high risk of developing diabetes and metabolic syndrome at a comparatively young age (Kale et al., 2004; Krishnaveni et al., 2007). With the emerging lifestyle changes and epidemic of obesity, pregnancy provides an opportunity to screen women. In those diagnosed to have GDM it offers an important opportunity for the development, testing, follow up and implementation of clinical strategies of diabetes prevention.

Diabetes predominantly type 2 rates are reported to be between 9 -43 % within 5-10 years and as much as 50% by the end of 20 years after the index pregnancy (Kitzmilller 2007; Lauenborg et al., 2004; Löbner et al., 2006) and 302 were followed with oral glucose tolerance tests at 9 months and 2, 5, 8, and 11 years postpregnancy. The 8-year postpartum diabetes risk was 52.7% (130 diabetic cases). The 5th Workshop-Conference on GDM, held in 2005 under the sponsorship of the American Diabetes Association has recommended that women with GDM undergo postpartum glucose tolerance testing with an oral glucose tolerance test (OGTT) at 6 -12 weeks, 1 year after delivery, and every 3 years thereafter (B. E. Metzger et al., 2007). The rationale for this recommendation is based on the potential to identify women with apparent diabetes as well as women with impaired glucose tolerance (IGT) in whom diabetes can be delayed or prevented by lifestyle intervention or moderate drug therapy (Knowler et al., 2002).

GDM is a significant risk factor for the development of diabetes mellitus. It is a well-recognized fact that simple life style modifications can prevent a large number of patients developing diabetes, however post natal follow up of GDM patients has been very low.

According to various studies the return rate for postpartum test is between 14% to 55% (Kitzmilller et al., 2007; Legardeur, Girard, & Mandelbrot, 2011; Löbner et al., 2006) and 302 were followed with oral glucose tolerance tests at 9 months and 2, 5, 8, and 11 years postpregnancy. The 8-year postpartum diabetes risk was 52.7% (130 diabetic cases) it has been reported that it was improved to 30% to 85 % with various techniques like patient counseling (Stasenکو et al., 2011), reminder call (Korpi-Hyövälti, Laaksonen, Schwab, Heinonen, & Niskanen, 2012) in two neighboring municipalities nurses were reminded to perform a ppOGTT on high-risk women (n = 110, electronic system to trigger reminder calls to patients who had not completed diabetes mellitus screening by 3 months postpartum (Vesco et al., 2012).

AIMS AND OBJECTIVES

To determine the return rate for postpartum glucose tolerance test in women diagnosed with gestational diabetes.

Correlate the follow up rate with domicile of the women and type of GDM management.

Determine post-partum return rate and use it for patient counseling at discharge.

To provide recommendations based on the findings.

MATERIALS AND METHODOLOGY

This is a retrospective single center analysis of patients delivered at Christian Medical College Hospital Vellore, Tamil Nadu which is a tertiary care referral center in South India, from 01/01/2015 to 31/12/2015. Those who were diagnosed as GDM during the last pregnancy were followed up to assess the rate of OGTT between 6 weeks and 6 months postpartum.

According to institutional protocol, all pregnant women receiving care at this hospital undergo screening for GDM between 24 to 28 weeks with 75 grams OGTT. GDM is diagnosed based on the International Diabetes in Pregnancy Study Group (IADPSG) criteria. (Panel, 2010) At discharge from the hospital postpartum, all women with GDM are given a laboratory requisition to obtain glucose testing prior to their 6 week postpartum visit. Those who do not have the test done before that visit are given another slip and encouraged to obtain testing as quickly as possible.

The primary outcome examined was whether the patients obtained postpartum glucose testing. Medical records were reviewed for documentation of OGTT within six months of delivery.

INCLUSION CRITERIA

Attended CMCH for antenatal care.

75 grams OGTT test done during antenatal period

Gestational diabetes as per IADPSG criteria.

RESULTS:

There were a total of 14811 deliveries during the study period, of which 2183(14.7%) were diagnosed to have GDM. Of this 1605 (73.5%) were from Vellore district, 338 (15.4%) from rest of Tamil Nadu, 232 patients (10.6%) from Andhra Pradesh and 8 (0.3 %) patients from the rest of India. Of 2183 GDM patients 656 (30%) came for follow-up with 75 gram GTT. (table1)

Table 1: Domicile based GDM and post natal follow-up rate.

Domicile	GDM (2183)	Followed-up (656)
Vellore	1605(73.5%)	490(30.5%)
Rest of Tamilnadu	338(15.4%)	96(28.4%)
AndhraPradesh	232(10.6%)	69(29.7%)
Rest of India	8(0.3%)	1(12.5%)

Post-partum follow-up rate was highest for those managed with insulin during the antenatal period (53.1%), 35.8% for those managed with oral hypoglycemic drugs and 20.2% for those on Medical Nutrition Therapy (MNT). (Table 2) 78.7% of women with GDM on MNT had a normal GTT report, 20.6% had impaired glucose tolerance and 0.5% of patients were with diabetes mellitus.

In the group of women treated with Oral hypoglycemic drugs during pregnancy, 36.7% had an impaired GTT on the postpartum follow up, and in the women who were treated with insulin, 56.3% were found to have diabetes mellitus in the postnatal period.

Table 2: Postpartum follow-up rate and outcome for GDM patients.

Method of GDM management antenatal	Antenatal GDM	Number of patients followed-up.	Patients followed-up and normal GTT	Patients followed-up and Impaired GTT	Patients followed-up and Type II DM
MNT	1693	343 (20.2%)	270(78.7%)	71(20.6%)	2(0.5%)
OHA	296	106 (35.8%)	51(48.1%)	39(36.7%)	16(15.1%)
INSULIN	194	103 (53.1%)	23(22.3%)	22(21.3%)	58(56.3%)

CONCLUSIONS

Postpartum follow-up rate of patients with GDM is low overall and more alarming is the low follow-up rate of those who were managed with Oral hypoglycemic drugs and Insulin during pregnancy. Methods to improve postpartum follow-up has to be instituted as a significant proportion of patients on Oral hypoglycemic drugs have impaired glucose tolerance .The progression to type II Diabetes can be delayed or prevented by lifestyle intervention or moderate drug therapy.

RECOMMENDATIONS

Contact with Diabetic Nurse Educator at 37 weeks of gestation and counseling regarding Diabetes, its prevention and importance of follow-up.

Ensure 100% compliance on giving GTT follow-up form at time of discharge.

Combining Post natal GTT testing with child's immunization schedule (6 and 14 weeks for DPT) may improve the compliance.

Reminder call at six weeks and three months if testing is not done.

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