CPR levels were significantly higher in the diabetic infants than in the non-diabetic infants ($p < .01$) (Table). The higher CPR levels were, the more likely infants were diabetic, with an adjusted odds ratio (OR) of 2.73 per 1 ng/ml (95% confidence interval [CI], 1.37-5.44). If CPR>2.0 ng/ml, adjusted OR for diabetic macrosomia was 7.06 (95% CI, 2.02-24.67).

CONCLUSION: Our findings suggest that, in term singleton LGA infants, cord serum CPR is a useful marker of diabetic macrosomia, being distinguishable from non-diabetic macrosomia.

Cord serum CPR levels in diabetic and non-diabetic infants

	Diabetic infants (n=25)	Non-diabetic infants (n=72)	P value
GA at birth (wk)	39.3±0.9	39.8±1.3	ns
BW (g)	3,863±235	3,781±265	ns
BWSD	2.9±0.8	2.4±0.7	< .01
Cord CPR (ng/ml)	1.75±0.07	1.18±0.61	< .01

BW, birthweight; *BWSD*, birthweight standard deviation; *GA*, gestational age.

262 Risk factors associated with postpartum impaired glucose tolerance at the first postpartum screening in women with gestational diabetes

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OBJECTIVE: Gestational diabetes mellitus (GDM) is associated with much increased risk of developing diabetes later on in life. The purpose of this study was to identify risk factors associated with abnormal glucose tolerance (AGT) at the first postpartum 75g oral glucose tolerance test (OGTT) in women with GDM in their index pregnancies.

STUDY DESIGN: We included women with GDM who had the first postpartum OGTT at 6-8 week postpartum. Women with overt diabetes in pregnancy were excluded. We investigated the association between abnormal OGTT results in the first glucose screening at 6-8 weeks postpartum and maternal risk factors including age, prepregnancy body mass index (BMI), insulin therapy in pregnancy, plasma glucose (PG) levels, HbA1c, fasting immunoreactive insulin (IRI), and insulinogenic index ($II = \Delta IRI[30\text{-min}]/\Delta PG[30\text{-min}]$) at the time of OGTT during pregnancy. We defined impaired glucose tolerance and diabetes by using WHO criteria as postpartum AGT. We tested the association between the risk factors and AGT by using logistic regression analysis.

RESULTS: We included 168 women with GDM, to whom we examined OGTT at 6.9±1.5 weeks postpartum. Fifty-seven women (34%) showed postpartum AGT. In univariate analysis, 1-hour PG at OGTT ($p<0.005$), HbA1c ($p<0.0005$), II ($p<0.02$), and insulin therapy ($p<0.001$) were associated with postpartum AGT. Among them, II ($p<0.05$) and insulin therapy ($p<0.0001$) were independent risk factors of postpartum AGT after adjusting for maternal age, prepregnancy BMI, gestational age, and PG levels at OGTT during pregnancy. Adjusted odds ratios for postpartum AGT in women with II<0.4 and women with insulin therapy were 5.6 (95% confidence interval, 1.56-20.39) and 3.43 (1.03-12.6), respectively.

CONCLUSION: In women with GDM, lower II, as a marker of early phase of insulin secretion during OGTT, and insulin therapy during pregnancy are independent risk factors of AGT at 6-8 weeks postpartum.

263 Glycemic control in gestational diabetes: it's all a matter of timing

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OBJECTIVE: For patients with gestational diabetes (GDM), achieving glycemic control (GC) earlier in pregnancy is presumably associated with improved maternal and neonatal outcome. We sought to determine if the gestational age (GA) at which good GC is achieved affects outcome regardless of the method used to diagnose GDM.

STUDY DESIGN: A retrospective cohort study was performed by reviewing the charts of all patients with GDM enrolled in our Diabetes in Pregnancy Program from January 2009-May 2012. Before 10/2010, the 2-step method was used, with a 50-gm OGCT followed by a 100-gm OGTT. From 10/2010, the 75-gm OGTT 1-step method was used, as recommended by the American Diabetes Association. Exclusion criteria included: <18 years of age and initial GDM screening or testing <24 weeks or ≥34 weeks gestation. Good GC was defined as a mean glucose ≤100mg/dL over a 2 week period. Failure to achieve GC with diet modification was followed by medical therapy. Patients were analyzed based on the GA at which good GC was achieved regardless of the diagnostic method used. Patients who achieved good GC by 28, 30, 32, 34 and 36 weeks were compared to those who achieved GC later. Statistical analysis included Chi square and Student's t-test.

RESULTS: The study included 566 patients: 323 were diagnosed by the 2-step method and 234 by the 1-step method. At each GA, regardless of the diagnostic method used, achieving good GC was associated with earlier diagnosis, earlier enrollment in the diabetes program, earlier initiation and lower doses of medications, lower mean glucose, and lower BMI, compared to patients who achieved good GC at a later gestational age. Achieving good GC prior to 32 weeks was also associated with less LGA. The table compares patients who achieved GC before and after 30 and 32 weeks.

CONCLUSION: The method of diagnosing GDM appears to be less significant than reaching good GC as early in pregnancy as possible. Both the 1-step and 2-step methods are acceptable diagnostic tools providing they lead to timely intervention.

	Glycemic Control < 30 wks	Glycemic Control ≥ 30 wks	p
BMI (Kg/m^2)	23.53 ± 4.2	25.19 ± 5.5	<0.001
GA at GTT (weeks)	25.50 ± 0.9	27.57 ± 2.01	<0.001
GA at diabetes program entry (weeks)	27.11 ± 1.1	29.76 ± 2.4	<0.001
GA at glyburide start (weeks)	30.32 ± 2.3	31.85 ± 2.7	<0.05
Final glyburide dose (mg)	3.07 ± 1.6	6.11 ± 4.9	<0.001
GA at insulin start (weeks)	29.78 ± 2.5	32.83 ± 2.5	0.0823
Mean glucose (mg/dL)	91.45 ± 4.6	96.90 ± 8.1	<0.001
	Glycemic control < 32 weeks	Glycemic control ≥ 32 weeks	p
BMI (Kg/m^2)	23.58 ± 4.4	25.75 ± 5.7	<0.001
GA at GTT (weeks)	26.28 ± 1.3	27.84 ± 2.3	<0.001
GA at diabetes program entry (weeks)	28.14 ± 1.6	30.08 ± 2.5	<0.001
GA at glyburide start (weeks)	31.33 ± 2.67	31.18 ± 2.7	0.2673
Final glyburide dose (mg)	3.10 ± 1.8	6.60 ± 5.0	<0.001
GA at insulin start (weeks)	29.68 ± 2.2	32.94 ± 2.5	<0.05
Final insulin dose (units/Kg)	31.60 ± 27.4	66.09 ± 54.7	0.05
Mean glucose (mg/dL)	91.52 ± 4.8	98.79 ± 8.2	<0.001

Data presented as mean ± SD.

264 The one-step method for screening and diagnosis of gestational diabetes: is it really better?

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OBJECTIVE: There is a lack of consensus regarding the optimal method to diagnose gestational diabetes (GDM). The goal of this study was to test the hypothesis that the 1-step method for the diagnosis of GDM

leads to earlier diagnosis, earlier intervention, and improved perinatal outcome when compared to the traditional 2-step method.

STUDY DESIGN: A retrospective cohort study was performed by reviewing the charts of all patients with GDM enrolled in our Diabetes in Pregnancy Program (DIPP) from January 2009-May 2012. Before 10/2010, the 2-step method was used, with a 50-gm OGCT followed by a 100-gm OGTT. From 10/2010, the 75-gm OGTT 1-step method was used, as recommended by the American Diabetes Association. Exclusion criteria included: <18 years of age and initial GDM screening or testing before 24 weeks or after 34 weeks gestation. Data extracted included demographics, method and timing of diagnosis, treatment specifics, glucose control, delivery data, and neonatal outcomes. Neonatal outcomes were excluded from analysis for patients with multiple gestation or delivery < 37 weeks. Statistical analysis was performed using Chi square and Student's t-test.

RESULTS: The study included 653 patients: 414 were diagnosed by the 2-step method and 239 by the 1-step method. The two groups differed with respect to gestational age (GA) at diagnosis, GA at entry into DIPP, GA at initiation of glyburide, GA at which good glycemic control was achieved, and medication dose at the end of pregnancy (Table). However, pregnancy outcome and newborn birthweight were similar in both groups.

CONCLUSION: Although the 1-step method leads to earlier diagnosis of GDM, earlier intervention, and achievement of glycemic control with lower doses of medications, it does not change neonatal outcome when compared to the traditional 2-step method.

	1-Step Method	2-Step Method	p
GA at OGTT (weeks)	26.2 ±1.73	28 ± 2.03	<0.001
GA at entry into diabetes program (weeks)	28.5 ± 2.35	29.9 ±2.32	<0.001
GA at glyburide start (weeks)	31.2 ± 2.81	32 ± 2.58	<0.05
Final glyburide dose (mg)	4.9 ±4.81	6.3 ± 4.38	<0.05
Final insulin dose (units/Kg)	50.5 ± 29.83	81.4 ± 64.01	<0.05
GA at achievement of glycemic control (weeks)	31.2 ± 2.8	32.7 ± 2.75	<0.001
GA at delivery (weeks)	39.2 ± 1.05	39.1 ± 0.96	0.8080
Birthweight (g)	3315.8 ± 390.15	3307.4 ±407.17	0.8085
Mean birthweight percentile	44.0 ± 25.17	44.3 ± 24.79	0.8944
% LGA	4.39	4.72	0.8578

Data presented as mean±SD or %.

265 Is the one-step test for the diagnosis of GDM a shortcut to achieving glycemic control?

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OBJECTIVE: Good glycemic control is the cornerstone of managing gestational diabetes (GDM). It is generally accepted that the earlier glycemic control is achieved, the better the outcome for mother and infant. We sought to determine whether using a 1-step method for screening and diagnosis of GDM leads to earlier glycemic control compared to the 2-step method.

STUDY DESIGN: A retrospective cohort study was performed by reviewing the charts of all patients with GDM enrolled in our Diabetes in Pregnancy Program (DIPP) from January 2009-May 2012. Before 10/2010, the 2-step method was used, with a 50-gm OGCT followed by a 100-gm OGTT. From 10/2010, the 75-gm OGTT 1-step method was used, as recommended by the American Diabetes Association. Patients were instructed to check fingerstick glucose with memory reflectance meters 4-7 times a day. Good glycemic control was defined as a mean glucose ≤ 100mg/dL over a period of 2 weeks. Failure to achieve good control with diet modification was followed by therapy with glyburide or insulin and doses were adjusted every week. The percent of patients who achieved good control was determined for the 1-step and 2-step groups at each gestational age. Statistical analysis was performed using Chi square and Student's t-test, as appropriate.

RESULTS: 566 patients for whom detailed glucose control data were available were included in this study. 332 patients were diagnosed by the 2-step method and 234 were diagnosed by the 1-step method. Patients' demographic characteristics did not differ significantly between these two groups. Patients in the 1-step group achieved good glycemic control significantly earlier than those in the 2-step group (table 1). Additionally, a larger percent of patients in the 2-step group never achieved glycemic control compared to the 1-step group ($p < 0.05$).

CONCLUSION: The 1-step method for the diagnosis of gestational diabetes leads to earlier glycemic control than the 2-step group.

Percent of patients achieving good glycemic control

Table 1.			
Gestational age at which glycemic control was achieved	2-Step	1-Step	p
< 28 weeks	0.6%	3.4%	<0.05
< 30 weeks	7.8%	26.5%	<0.001
< 32 weeks	30.1%	48.3%	<0.001
< 34 weeks	49.7%	62.8%	<0.05
< 36 weeks	61.4%	72.2%	<0.05
≥ 36 weeks	15.4%	12.4%	0.318
Never achieved good control	23.2%	15.4%	<0.05

266 Perinatal outcomes in patients with type 1 versus type 2 diabetes: a retrospective cohort study

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OBJECTIVE: To compare maternal and perinatal outcomes among patients with Type 1 Diabetes Mellitus (T1DM) and Type 2 Diabetes Mellitus (T2DM).

STUDY DESIGN: This was a retrospective cohort study of pregnant women with preexisting T1DM or T2DM delivering in California in 2006. Primary predictors included T1DM versus T2DM. Chi-squared tests, Fisher's exact tests, and multivariate regression analyses were performed to investigate the relationship between the primary predictors and a wide range of maternal and neonatal complications.

RESULTS: The study included 2787 women, of which 563 (20.2%) were complicated by T1DM and 2,224 (79.8%) by T2DM. In comparison to patients with T1DM, patients with T2DM had lower rates of preterm delivery (18.6% vs 28.8%, $p<0.001$), fetal anomalies (9.0% vs 12.4%, $p=.014$), and neonatal respiratory distress syndrome (2.2% vs 6.4%, $p<0.001$). These lower rates of respiratory distress syndrome (RDS) were persistently lower in T2DM when examining term patients alone (0.39% vs 2.0%, $p=0.002$). When controlling for potential confounders, having T2DM versus T1DM was associated with lower risks of RDS (AOR 0.47, 95% CI 0.28-0.81) and preterm delivery (AOR 0.58, 95% CI 0.46-0.72).

CONCLUSION: Women with T1DM have higher rates of fetal anomalies, preterm delivery, and neonatal RDS than patients with T2DM. The mechanism of increased RDS in T1DM requires further study.

Perinatal outcomes in type 1 vs type 2 diabetes mellitus

Perinatal Outcome	T1DM	T2DM	p-value	aOR	95%CI
Preeclampsia	14.2%	10.1%	0.01	0.86	0.64-1.15
Cesarean Section	61.8%	57.4%	0.06	1.02	0.75-1.39
Shoulder Dystocia	2.2%	1.7%	0.26	0.88	0.44-1.75
Hypoglycemia	2.0%	1.3%	0.29	0.89	0.43-1.85
Jaundice	25.8%	22.3%	0.05	1.01	0.80-1.27
Preterm Delivery	28.8%	18.6%	<0.001	0.58	0.46-0.72
Respiratory Distress Syndrome	6.4%	2.2%	<0.001	0.47	0.28-0.81
Stillbirth	1.5%	1.2%	0.59	1.85	0.51-6.69
Fetal Anomaly	12.4%	9.0%	0.01	0.71	0.52-0.97
SGA <10%il	11.1%	12.8%	0.35	1.22	0.86-1.75
Birth Weigh > 4000g	11.9%	12.4%	0.76	1.06	0.78-1.43