Table 1: Demographic and clinical characteristics

Characteristic		Basal analogs (n=114)	NPH (n=119)	P value
Maternal age, years	<20	3 (2.6)	1 (0.8)	0.624
	20-34	63 (55.3)	65 (54.6)	
	≥35	48 (42.1)	53 (44.5)	
Race/Ethnicity	Non-Hispanic White	27 (23.7)	35 (29.4)	**0.033**
	Non-Hispanic Black	34 (29.8)	52 (43.7)	
	Hispanic	36 (31.6)	22 (18.5)	
BMI	<25	4 (3.5)	7 (5.9)	0.357
	25-29.9	14 (12.3)	21 (17.6)	
	≥30	96 (84.2)	91 (76.5)	
Chronic hypertension		49 (43.0)	49 (41.2)	0.780
Diabetic medication before pregnancy	None	36 (31.6)	42 (35.9)	**<0.001**
	Oral	38 (33.3)	39 (33.3)	
	NPH	8 (7.0)	32 (27.4)	
	Basal insulin	32 (28.1)	4 (3.4)	
GA at first prenatal visit		14.6 (±7.1)	15.8 (6.7)	0.178
Concurrent metformin treatment		47 (41.2)	16 (13.4)	**<0.001**

Data is presented in proportion (%) or mean (± Standard deviation)

Table 2: Neonatal and maternal outcomes

Characteristic		Basal analogs (n=114)	NPH (n=119)	P value	Adjusted RR*
			Neonatal outcome		
Primary outcome (CNM)		83 (73.5)	72 (60.5)	0.03	1.16 (0.90-1.49)
LGA		30 (26.5)	29 (24.4)	0.70	1.41 (0.79-2.52)
Shoulder dystocia		4 (3.5)	3 (2.5)	0.71	
NICU admission		65 (57.5)	58 (48.7)	0.18	1.00 (0.73-1.37)
Hypoglycemia		57 (50.0)	44 (37.0)	0.04	1.25 (0.85-1.84)
RDS		9 (7.9)	15 (12.6)	0.23	0.53 (0.19-1.46)
Preterm birth (< 37 wks)		62 (54.3)	59 (49.5)	0.31	0.93 (0.69-1.26)
Mechanical ventilation		4 (3.5)	6 (5.0)	0.74	0.68 (0.15-3.09)
Hyperbilirubinemia		24 (21.1)	33 (27.7)	0.23	0.56 (0.31-0.99)
Birth Trauma		2 (1.8)	2 (1.7)	1.00	
Perinatal death		7 (6.1)	4 (3.4)	0.31	
			Maternal outcomes		
Hypoglycemic events		15 (13.2)	24 (20.2)	0.15	0.67 (0.32-1.40)
Admission for glucose control		34 (29.8)	29 (24.4)	0.34	1.12 (0.67-1.86)
Preeclampsia/gestational hypertension		39 (34.2)	44 (37.0)	0.65	1.02 (0.64-1.62)
Induction of labor		44 (38.6)	42 (35.3)	0.60	0.94 (0.54-1.47)
CD	Total	38 (33.3)	32 (27.1)	0.30	0.93 (0.69-1.26)
	Primary	24 (21.1)	43 (36.4)	0.09	**0.43 (0.24-0.76)**

Data is presented in proportion (%) or mean (± Standard deviation)

Neonatal Hypoglycemia defined as blood sugar <40 mg/dL in the first 24 hours of life or blood sugar<50 mg/dL after the first 24 hours of life or requiring medical therapy; Hyperbilirubinemia defined as neonatal jaundice requiring therapy, Birth trauma defined as brachial plexus injury/neonatal fracture; Maternal hypoglycemia defined as recorded blood sugar < 60 mg/dL.

*Adjusted for age, race, diabetic medications before pregnancy, metformin use, diabetic education, year of delivery.

403 Screening for GDM— can we use the results of the GCT of the previous pregnancy?

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OBJECTIVE: To assess whether previous pregnancy glucose challenge test (GCT) result among non-diabetic women may serve in an index pregnancy. as a screening tool for Gestational Diabetes Mellitus (GDM)

STUDY DESIGN: Retrospective study based on computerized records in a single large university medical center. All women who had a singleton pregnancy and two subsequent deliveries in our medical center between 2005 and 2017 were included. Women with Diabetes Mellitus or GDM in the previous pregnancy and women without documented GCT results in their previous pregnancy, were excluded. GDM diagnosis is based on either National Diabetes Data Group criteria or the Carpenter and Coustan criteria.

Unpaired student T-test and one way ANOVA were used to asses associations between GCT levels and maternal characteristics. Multivariable logistic model was conducted to assess the independent role of GCT level at previous pregnancy on GDM at index pregnancy. ROC curves were constructed. All tests are two-sided. P value below 0.05 was considered statistically significant. Analyses were carried out using SPSS software package version 22 (IBM, Armonk, NY).

RESULTS: A total of 31,861 women met inclusion criteria. Of those, 670 (2.1%) had GDM in the index pregnancy. Parturients with GDM in the index pregnancy had higher mean levels of GCT in the previous pregnancy in comparison to parturients without GDM (127.5±28 VS. 98.7±24 mg/dl, respectively, p<0.001). There was a positive association between GCT results in previous pregnancy and rates of GDM in index pregnancy (Figure). Multivariate analysis controlling for known risk factors for GDM revealed that GCT levels in previous pregnancy were independently associated with rates of GDM in index pregnancy (1.04, 95% CI 1.03-1.04, p<0.001). Using a GCT value of 107 mg/dl (65th percentile), the area under the ROC curve was 0.79, suggesting a fair to good accuracy of GCT results in previous pregnancy in predicting GDM in index pregnancy. In addition, the NPV of this value is very high, only 7 of 1000 women with this results or lower will have GDM in the index pregnancy (Table).

CONCLUSION: GCT result in previous pregnancy may serve as a screening tool for GDM in an index pregnancy. Parturients with low levels of GCT may not need repeat screening for GDM in the index pregnancy.
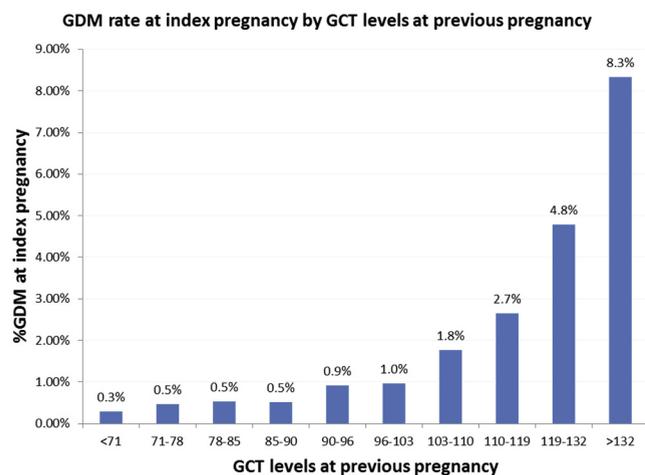
GDM rate at index pregnancy by GCT levels at previous pregnancy

Table: The sensitivity, specificity, PPV and NPV of GCT value, at previous pregnancy, divided to 10 percentiles, and their prediction of GDM at index pregnancy.

GCT (mg/dl)	Sensitivity	Specificity	PPV	NPV
63.7	0.990	0.058	0.022	0.996
75.1	0.973	0.165	0.024	0.997
82.0	0.948	0.272	0.027	0.996
88.0	0.928	0.374	0.031	0.996
93.0	0.896	0.462	0.035	0.995
99.5	0.840	0.572	0.041	0.994
107.0	0.787	0.676	0.049	0.993
114.8	0.669	0.772	0.059	0.991
125.4	0.527	0.862	0.076	0.988
147.7	0.246	0.955	0.104	0.983

404 Third trimester polyhydramnios as a first manifestation of gestational diabetes- clinical characteristics and risk factors

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OBJECTIVE: Being a common complication of GDM, newly diagnosed polyhydramnios often prompts clinicians to perform oral glucose tolerance test (OGTT), despite normal screening test result. However, the clinical yield of performing OGTT due to late polyhydramnios has not been determined. Thus, we aimed to determine the prevalence and implications of GDM diagnosis in pregnancies complicated by third trimester polyhydramnios and a prior normal glucose challenge test (GCT).

STUDY DESIGN: A retrospective cohort study of all pregnancies complicated by third trimester polyhydramnios at a tertiary center between 2014-2017. Included patients had a previous normal GCT result and polyhydramnios (AFI ≥240mm). Participants underwent 100g OGTT and targeted ultrasound anomaly scan. Exclusion criteria included multiple gestation and fetal anomalies. Pregnancies were allocated into two groups according to OGTT results: (1) ≥ 1 abnormal value on OGTT (2) normal OGTT

RESULTS: Abnormal OGTT was detected in 13 out of 110 pregnancies (11.8%). Patients with abnormal OGTT scored higher on GCT (118 vs 106, p=0.02) and had a lower gestational weight gain (GWG) (10.5 vs 14.8, p=0.03). A trend towards a higher maternal age was observed in the study group (35.9 vs 32.6, p=0.05). Both groups were comparable in maternal BMI (p=0.29), past macrosomia rate (p=1) and past GDM rate (p=0.12). Median gestational age at polyhydramnios diagnosis, (p=0.1), mean AFI (p=0.54), median fetal abdominal circumference percentile (p=0.15) and fetal LGA rate (0.17) did not differ significantly. Regression analysis revealed that GCT result (p=0.01) and GWG (p=0.04) remained significantly associated with newly diagnosed GDM after adjustment for maternal age, BMI and EFW>90th percentile. A trend for the association between EFW>90th percentile and GDM (p=0.055) was also observed. Gestational age at delivery was similar in both groups (p=0.89). Although a higher prevalence of LGA newborns was observed in the study group (46% vs 20%, p=0.04), there was no significant difference in birth weight (p=0.23), cesarean section (p=0.37), or macrosomia rate(p=0.21).

CONCLUSION: Late onset GDM was identified in 11.8% of pregnancies with third trimester isolated polyhydramnios and negative GCT. Initiation of restrictive diet may account for decreased GWG in these patients. A higher score on GCT test was associated with late onset GDM. Thus, if polyhydramnios occurs, a high normal GCT score may warrant a repeat evaluation for GDM.

405 Does the one-step method of GDM screening improve pregnancy outcomes?

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OBJECTIVE: Despite significant debate, the best method of diagnosing gestational diabetes (GDM) remains unknown. The most commonly used method of GDM screening in the US is the 2-step method, which includes screening with a 50-g, 1- hour glucose challenge followed by a 100-g, 3-hour diagnostic OGTT. The International Association of Diabetes and Pregnancy Study Group (IADPSG) recommended adopting the 1-step method using a 75-g, 2-hour OGTT. The IADPSG thresholds have been predicted to increase the rates of GDM, but it is unknown whether this leads to improved outcomes.

STUDY DESIGN: This is a retrospective cohort study of patients who delivered before and after our institution switched from the two-step method to the one-step IADPSG method in July 2015. Women with a due date of Jan 1, 2012 through Oct 1, 2015, were diagnosed with GDM using the 2-step method and the Carpenter and Coustan criteria. After allowing for a 6 month washout period, we evaluated women with a due date of May 1, 2016 through Feb 1, 2018, when the 1-step IADPSG criteria was used. Maternal and neonatal outcomes were compared during these time periods, using Chi square and t-tests, and multivariable logistic regression.