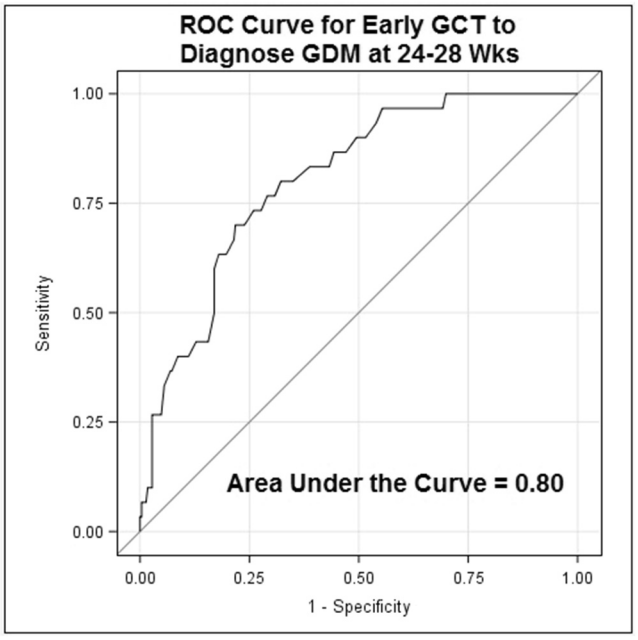

50-g, One-Hour Glucose Challenge Test Cutoffs at 14-20 wks

Cut Off	Sensitivity	Specificity	# of GTT performed per 100 patients	Incidence of Primary Outcome in ≥ Cutoff	Incidence of Primary Outcome in < Cut off	p
105	96.7	34.9	68	143/225 (63.6%)	55/94 (58.5%)	0.39
110	96.7	44.6	59	124/194 (63.9%)	74/125 (59.2%)	0.40
115	86.7	52.9	50	111/170 (65.3%)	87/149 (58.4%)	0.21
120	83.3	61.2	42	97/145 (66.9%)	101/174 (58.1%)	0.10
125	76.7	70.5	33	77/112 (68.8%)	121/207 (58.5%)	0.07
130*	70.0	78.2	26	64/90 (71.1%)	134/229 (58.5%)	0.04
135	63.3	81.3	22	52/74 (70.3%)	146/245 (59.6%)	0.10
140	43.3	85.8	16	39/58 (67.2%)	159/261 (60.9%)	0.37

*Liu Cutoff

401 Pregnancy outcomes with telemedicine management in women with gestational diabetes mellitus

Maisa Feghali[1], Anna Binstock[1], James Henderson[2], Hyagriv Simhan[1]
[1]University of Pittsburgh, Magee Womens Research Institute, Pittsburgh, PA, [2]Wolff Center at UPMC, Pittsburgh, PA

OBJECTIVE: Telemedicine care is an innovative healthcare delivery approach to help overcome difficulties with access to care. We sought to compare pregnancy outcomes with in-person and telemedicine Maternal-Fetal Medicine consultation in women with gestational diabetes mellitus (GDM).

STUDY DESIGN: This is a retrospective cohort study of 542 pregnant women with GDM who underwent Maternal-Fetal Medicine consultation between 2016 and 2017. GDM management included physician consultation, medical nutrition therapy counseling by a certified diabetes educator, and weekly glycemic surveillance for both telemedicine and in-person groups. We compared baseline maternal characteristics and pregnancy outcomes based on the type of care.

RESULTS: Telemedicine management was performed in 88 (16%) of women with GDM. Women undergoing telemedicine management were younger (29.6 vs 32.2, p<0.001), more likely to be obese (71.6 vs 55%, p=0.02), and to actively smoke (22.7 vs 11.1, p=0.01), but there were no differences in gestational age at GDM diagnosis (23.7 vs 25.1 weeks, p=0.06). Need for pharmacologic therapy was similar in both groups (53.4 vs. 54.8%, p=0.8). Also, mean fasting (100.5 vs 98.7 mg/dL, p=0.4) and postprandial (130.8 vs 129.9 mg/dL, p=0.7) glucose values were similar in women undergoing telemedicine and in-person consultation. Pregnancy outcomes did not differ by management type including preterm birth, hypertensive disorders of pregnancy and cesarean delivery. Neonatal outcomes were similar including NICU admission (17.1 vs. 25.2%, p=0.1) and composite neonatal morbidity (52.3 vs. 45.2%, p=0.2) in women with GDM undergoing telemedicine and in-person management.

CONCLUSION: We found no difference in pregnancy outcomes in women with GDM who underwent telemedicine or in-person management. Our findings suggest a potential role for telemedicine care in the management of women with GDM.

402 Basal insulin analogs versus neutral protamine hagedorn for type 2 diabetics

Michal Fishel Bartal, Clara Ward, Jerrie S. Refuerzo, Sunbola S. Ashimi, Cornthwaite A. Joycelyn, Han-Yang Chen, Suneet P. Chauhan, Baha M. Sibai
McGovern Medical School – University of Texas at Houston (UTHealth), Houston, TX

OBJECTIVE: Based on data from non-pregnant women, American Diabetes Association (ADA) recommends long- acting basal analogs (glargine or detemir) be used instead of intermediate-acting insulin (neutral protamine hagedorn [NPH]) to reduce adverse outcomes in type 2 diabetic (T2DM) (Diabetes Care, 2018). However, in pregnant women with T2DM there is a paucity of reports focused exclusively on T2DM. The aim of this study was to compare whether basal insulin analogs reduces rate of composite neonatal morbidity (CNM) and maternal adverse outcomes compared to NPH in women with T2DM.

STUDY DESIGN: A retrospective cohort study of all women with T2DM and singleton pregnancy (March 2012 to May 2018) managed at a single tertiary center. Exclusion criteria were known major anomalies, diabetic nephropathy or proliferative retinopathy. The primary outcome was a CNM of any of the following: large for gestational age, shoulder dystocia, NICU admission, hypoglycemia (BS< 40 mg/dL in the first 24 hours of life or <50 mg/dL after 24 hours or requiring medical therapy) or RDS. Secondary outcomes were rates of maternal hypoglycemia events, hypertensive disorders, admission for glucose control, preterm birth (< 37 wks) and primary cesarean delivery. Adjusted relative risk (aRR) and 95% confidence intervals (CI) were calculated.

RESULTS: Of 233 women with T2DM, 114 (49%) were treated with basal insulin analogs and 119 (51%) with NPH. Table 1 compares demographic and clinical characteristics. Significant differences on univariate analysis are bolded. The rate of CNM was similar between groups (73% vs 60%, aRR 1.16, 95% CI 0.90-1.49). Basal insulin treatment was associated with a lower risk for a primary cesarean delivery compared to NPH (21% vs 36%, aRR 0.43; 95% CI 0.24-0.76). There were no differences in the rates of maternal hypoglycemic events, admission for glucose control, preeclampsia or preterm birth between the groups (Table2).

CONCLUSION: The rate of CNM, neonatal or maternal hypoglycemia—were similar for T2DM managed with either basal or NPH insulin regimen. Since this is a retrospective study, a randomized trial enrolling patients with T2DM prior to 20 weeks of gestation and comparing short and long-term maternal and neonatal outcomes between the two treatment regimens is warranted.

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?

Misgav Rottenstreich, Reut Rotem, Orna Reichman, Rivka Farkash, Arnon Samueloff, Hen Y. Sela
Shaare Zedek Medical Center, Jerusalem, Jerusalem, Israel

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.