Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

baseline characteristics as well as several pregnancy and neonatal outcomes. Multivariate logistic regression was used to adjust outcomes for potential confounders such as maternal age, race/ethnicity, body mass index (BMI), chronic hypertension, pregestational diabetes, and prior preterm birth. Results were presented as adjusted odds ratios (aOR) with 95% confidence intervals (CI), and statistical significance was set as P value < 0.05.

RESULTS: IVF singleton births comprised 0.84% of the study cohort (83,624 of 9,936,721). Baseline characteristics such as maternal age, BMI, race/ethnicity, pre-gestational diabetes, and smoking varied significantly between the groups (Table 1). IVF pregnancies were associated with several adverse pregnancy and neonatal outcomes including hypertension disorders of pregnancy (aOR 1.73, CI 1.64-1.77), maternal transfusion (aOR 3.12, CI 2.91-3.35), gravid hysterectomy (aOR 2.92, CI 2.47-3.44), maternal ICU admissions (aOR 2.28, CI 2.02-2.56) and preterm deliveries (aOR 1.47, CI 1.44-1.50), as well as adverse neonatal outcomes including low Apgar score (aOR 1.40, CI 1.34-1.47), NICU admission (aOR 1.65, CI 1.61-1.68), prolonged ventilation (aOR 2.18, CI 2.09-2.27), and neonatal seizures (aOR 1.85, CI 1.41-2.42) amongst others (Table 2).

CONCLUSION: We report a significant increase in several adverse pregnancy and neonatal outcomes in singleton pregnancies conceived via IVF compared to those conceived spontaneously. Our data add to the clinical information available regarding pregnancy risks in this population, suggesting that Maternal Fetal Medicine specialist should be involved in the care of patients conceived via IVF.

Table 1. Baseline characteristics of the two study groups.

Maternal variable	IVF [n (%)] N=83,624	Spontaneous [n (%)] N=9,936,721	P-value
Maternal age (years)			
Under 20	21 (0.03%)	502,142 (5%)	
20-24	699 (0.8%)	1,970,605 (19.8%)	
25-29	7,720 (9.2%)	2,918,300 (29.4%)	<.0001
30-34	27,469 (32.8%)	2,839,429 (28.6%)	
35-39	29,692 (35.5%)	1,408,445 (14.2%)	
40 and Above	18,023 (21.5%)	297,800 (3%)	
Body mass index (kg/m^2)			
Underweight < 18.5	1,994 (2.4%)	335,728 (3.4%)	
Normal 18.5 to 25	42,889 (51.3%)	4,326,278 (43.5%)	
Overweight 25 to 30	21,491 (25.7%)	2,619,999 (26.4%)	<.0001
Obese class I	10,048 (12%)	1,451,910 (14.6%)	
Obese class II	4,690 (5.6%)	704,729 (7.1%)	
Obese class III	2,512 (3%)	498,077 (5%)	
Race/Ethnicity			
Non-Hispanic White	60,989 (72.9%)	5,316,405 (53.5%)	
Non-Hispanic Black	4,132 (4.9%)	1,436,178 (14.4%)	<.0001
Asian	11,551 (13.8%)	679,624 (6.8%)	
Hispanic	6,952 (8.3%)	2,504,514 (25.2%)	
Pre-gestational diabetes	899 (1.1%)	86,939 (0.9%)	<.0001
Chronic HTN	2,636 (3.1%)	178,082 (1.8%)	<.0001
Previous preterm delivery	2,663 (3.2%)	314,839 (3.2%)	0.792
Smoking	372 (0.4%)	654,354 (6.6%)	<.0001
Multiple gestation	33977 (28.9%)	314352 (3.1%)	<.0001

Table 2. Pregnancy, maternal and neonatal outcomes adjusted for maternal age, race/ethnicity, BMI, and pre-pregnancy dispositions.

Outcome	IVF N=83,624	Spontaneous N=9,936,721	aOR	95% CI	P-Value
Maternal/pregnancy outcomes					
Gestational diabetes	8,857 (10.6%)	616,903 (6.2%)	1.25	1.22-1.28	<.0001
HTN disorders of pregnancy	8,423 (10.1%)	621,467 (6.2%)	1.73	1.64-1.77	<.0001
Eclampsia	282 (0.3%)	24,696 (0.2%)	1.34	1.19-1.51	<.0001
Malpresentation	6,395 (7.7%)	400,405 (4%)	1.61	1.57-1.65	<.0001
Preterm delivery	11,171 (13.4%)	954,725 (9.6%)	1.47	1.44-1.50	<.0001
Maternal transfusion	846 (1%)	31,907 (0.3%)	3.12	2.91-3.35	<.0001
Gravid hysterectomy	154 (0.18%)	3,762 (0.04%)	2.92	2.47-3.44	<.0001
Ruptured uterus	41 (0.05%)	2,893 (0.03%)	1.36	0.99-1.85	0.056
Maternal admission to ICU	305 (0.4%)	12,797 (0.1%)	2.28	2.02-2.56	<.0001
Neonatal outcomes					
Low birth weight	6,910 (8.3%)	626,555 (6.3%)	1.15	1.12-1.19	<.0001
Macrosomia	7,777 (9.3%)	805,953 (8.1%)	0.99	0.96-1.01	0.236
Low APGAR	1,959 (2.3%)	176,648 (1.8%)	1.40	1.34-1.47	<.0001
NICU admission	10,285 (12.3%)	759,999 (7.6%)	1.65	1.61-1.68	<.0001
Newborn antibiotics	3,656 (4.4%)	203,327 (2.0%)	2.34	2.26-2.42	<.0001
Immediate ventilation	5,642 (6.7%)	367,136 (3.7%)	1.81	1.76-1.86	<.0001
Prolonged ventilation (> 6 hours)	2,254 (2.7%)	118,155 (1.2%)	2.18	2.09-2.27	<.0001
Neonatal seizures	55 (0.07%)	3,275 (0.03%)	1.85	1.41-2.42	<.0001
Congenital malformation	305 (0.4%)	25,720 (0.3%)	1.37	1.2-1.53	<.0001
Chromosomal disorders	68 (0.08%)	4,319 (0.04%)	1.13	0.89-1.44	0.313

1122 Thromboelastography unchanged in pregnant women with COVID-19 compared to uninfected controls: a cohort study

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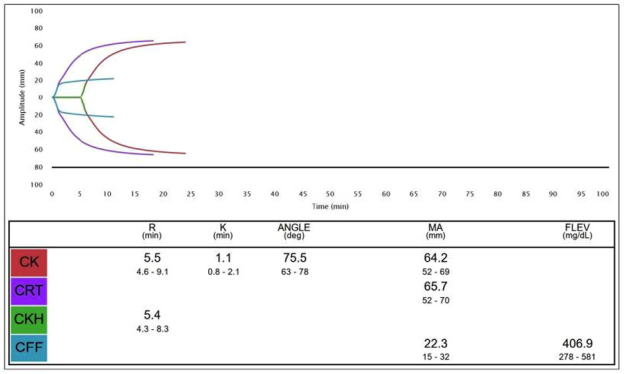
OBJECTIVE: COVID-19 is associated with thrombocytopenia and both coagulopathy and thrombosis in pregnant and non-pregnant individuals. Thromboelastography (TEG) is an established test that allows a more global assessment of the clotting system and is helpful in determining blood component replacement during hemorrhage. Our objective was to compare the risk of coagulopathy and thrombosis in pregnant patients admitted with SARS-CoV-2 compared to uninfected controls using TEG. Our primary outcome was to assess factor coagulation and clot strength as measured by Reaction time (R) and Maximal Amplitude (MA) on TEG, respectively.

STUDY DESIGN: In this observational cohort study, approved by our institutional IRB, a TEG (Figure 1) and other coagulation tests were performed in pregnant patients who were SARS-CoV-2 positive by nasopharyngeal swab PCR or under investigation for COVID-19 on admission to Labor and Delivery between May 5th and June 29th 2020. QQ plots and Shapiro-Wilk test were utilized to assess the normality. Statistical tests for primary and secondary outcome were compared using independent samples t-test and Mann-Whitney U test, as appropriate.

RESULTS: Twenty patients were included; 10 were SARS-CoV-2 positive and the remaining 10 were negative. There were no differences in baseline demographics between groups. None were admitted to ICU and all recovered well with favorable obstetric outcomes. There were no differences in TEG parameters (including R, Angle, MA) or in routine coagulation labs (platelet count, PT, PTT, and Fibrinogen) between those with or without COVID-19 (Table 1).

CONCLUSION: Both TEG and other coagulation parameters were similar between pregnant women with or without COVID-19

infection, suggesting normal pregnancy coagulation in patients with low-to-moderate severity of disease. Modification of anticoagulation guidelines may not be warranted in the absence of severe COVID-19 disease. References: 1. MMWR Morb Mortal Wkly Rep. 2020 Jun 26;69(25):769-775. 2. J Thromb Haemost. 2020 Jul;18(7):1648-1652. 3. Anaesth Crit Care Pain Med. 2020 Jun;39(3):351-353.



	R (min)	K (min)	ANGLE (deg)	MA (mm)	FLEV (mg/dL)
CK	5.5 4.6 - 9.1	1.1 0.8 - 2.1	75.5 63 - 78	64.2 52 - 69	
CRT				65.7 52 - 70	
CKH	5.4 4.3 - 8.3				
CFF				22.3 15 - 32	406.9 278 - 581

Figure 1: A representative TEG result from a study patient. This displays the characteristic qualitative tracings of the rapid TEG system performed on a TEG 6s analyzer. The lower panel displays the quantitative numerical values as reported by the analyzer.

	SARS-CoV-2 Negative Patient (n=10)	SARS-CoV-2 Positive Patient (n=10)	*p*-value
R (min)	5.5 ± 1.2	5.9 ± 1.1	0.469
K (min)	1.1 [0.8-1.2]	1 [0.9-1.1]	0.912
Angle (deg)	76.1 ± 2.5	75.3 ± 3.1	0.557
MA (mm)	66.9 ± 3.3	66.9 ± 1.9	0.993
Platelet (K/μL)	212.7 ± 65.5	246.4 ± 80.0	0.315
PT (sec)	10.6 ± 0.7	10.5 ± 0.9	0.744
PTT (sec)	26.4 ± 3.0	28.5 ± 3.4	0.206
INR	1.0 [0.9-1.0]	1.0 [0.9-1.0]	1.000
Fibrinogen (mg/dL)	487.4 ± 117.9	511.8 ± 93.6	0.679

Table 1: Comparison of thromboelastography data and standard coagulation parameters between pregnant patients with or without COVID-19: Reaction time (R) represents measures the time to initial clot formation caused by factor deficiency. Kinetics (K) time and Alpha Angle (Angle) represent the contribution of fibrinogen to clot strength. Maximum amplitude (MA) represents maximum clot strength and the platelet contribution to clot strength.

1123 Midtrimester fetal growth restriction as predictor of small for gestational age and adverse obstetrical outcomes

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OBJECTIVE: To assess whether fetal growth restriction (FGR), defined as estimated fetal weight (EFW) or abdominal circumference (AC) < 10th percentile, diagnosed on midtrimester anatomy scan is predictive of small for gestational age (SGA) and is associated with adverse obstetrical outcomes.

STUDY DESIGN: This is a single center retrospective cohort study of women undergoing anatomy scan at 18-24 weeks gestation from 1/2017-12/2019. Women 18-45 years of age carrying non-anomalous singleton gestations with documented delivery outcomes were included. EFW percentile was calculated using Hadlock 85; AC percentile was calculated using Hadlock 84. Fetuses with FGR were matched with the next normal weight fetus (EFW and AC between the 10th and 90th percentiles) undergoing anatomy scan on the ultrasound schedule. The primary outcome was the rate of SGA. Secondary outcomes included the rates of abnormal genetic screening, gestational age at delivery, NICU admission, composite neonatal morbidity (hypoglycemia, hypothermia, respiratory distress syndrome, intraventricular hemorrhage, necrotizing enterocolitis, seizure, sepsis), and pregnancy related hypertensive disorders.

RESULTS: 167 pregnancies were included in the final analysis. Fetuses with FGR were more likely to be SGA at delivery. This difference persisted across different definitions of FGR (Table 1). The sensitivity and specificity of midtrimester FGR for predicting SGA were 74.9% and 73.6%, respectively. Neonates in the FGR group were more likely to require NICU admission and to have an adverse neonatal composite outcome. Fetuses in the FGR group did not have higher rates of abnormal aneuploidy screening and were not delivered at an earlier gestational age (38.5 versus 39.0 weeks, p=0.21). Women in the FGR group were not at increased risk for pregnancy related hypertensive disorders (Table 2).

CONCLUSION: Singleton fetuses with growth restriction on midtrimester anatomy scan are at increased risk of being SGA, requiring NICU admission, and experiencing adverse neonatal outcomes. However, over 48% of fetuses with midtrimester FGR achieve normal birth weight.

Table 1: Risk of SGA among growth restricted fetuses

	Rate of SGA n (%)	OR (95% CI)	p-value
Normal weight fetus N=101	12 (11.9)	1.0 (Reference)	
All FGR N=66	34 (51.5)	7.9 (3.6-17.1)	<0.001
EFW 3-10% N=58	30 (51.7)	7.9 (3.6-17.6)	<0.001
EFW <3% N=1	1 (100)	6.8 (0.8-556.7)	0.13
Isolated AC <10% N=7	3 (42.9%)	5.4 (0.7-36.6)	0.05

Table 2: Obstetrical outcomes

Outcome	FGR N=66 n (%)	Normal weight fetus N=101 n (%)	OR (95% CI)	p-value
NICU Admission	23 (34.8)	15 (14.9)	3.1 (1.5-6.5)	0.003
Neonatal composite	24 (36.4)	17 (16.8)	2.8 (1.4-5.8)	0.004
Abnormal aneuploidy screening	3 (4.5)	3 (3.0)	1.6 (0.2-11.9)	0.68
Pregnancy related hypertensive disorder	5 (7.6)	15 (14.9)	0.5 (0.2-1.4)	0.16