

## Supplemental Online Content

Adhikari EH, Moreno W, Zofkie AC. Pregnancy outcomes among women with and without severe acute respiratory syndrome coronavirus 2 infection. *JAMA Netw Open*. 2020;3(11):e2029256. doi:10.1001/jamanetworkopen.2020.29256

**eTable 1.** Characteristics and Delivery Outcomes Stratified by Illness Severity Among Women With SARS-CoV-2 During Pregnancy

**eTable 2.** Pathologic Characteristics of Placentas From Deliveries Among Women With SARS-CoV-2 Infection During Pregnancy

This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1: Characteristics and Delivery Outcomes Stratified by Illness Severity Among Women With SARS-CoV-2 During Pregnancy<sup>a</sup>**

<i>Maternal characteristic</i>	<i>Asymptomatic</i>	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>	<i>Critical</i>	<i>P-value</i>	<i>Trend</i>
<i>n</i>	98	127	8	9	3		
<b>Diabetes</b>	<b>3 (3%)</b>	<b>7 (6%)</b>	<b>2 (25%)</b>	<b>3 (33%)</b>	<b>0 (0%)</b>	<b>0.001</b>	<b>0.003</b>
<b>Gestational</b>	<b>3 (3%)</b>	<b>7 (6%)</b>	<b>2 (25%)</b>	<b>2 (22%)</b>	<b>0 (0%)</b>	<b>0.02</b>	<b>0.02</b>
<b>Pregestational</b>	<b>0 (0%)</b>	<b>0 (0%)</b>	<b>0 (0%)</b>	<b>1 (11%)</b>	<b>0 (0%)</b>	<b>&lt;0.001</b>	<b>0.004</b>
Hypertension, chronic	4 (4%)	8 (6%)	0 (0%)	0 (0%)	0 (0%)	0.79	0.73
Preeclampsia with severe features	9 (9%)	14 (11%)	1 (13%)	2 (22%)	0 (0%)	0.75	0.48
Clinical chorioamnionitis	6 (6%)	14 (11%)	1 (13%)	3 (33%)	0 (0%)	0.10	0.05
<b>Gestational age at delivery</b>							
<b>&lt;37 weeks</b>	<b>7 (7%)</b>	<b>13 (10%)</b>	<b>2 (25%)</b>	<b>3 (33%)</b>	<b>2 (67%)</b>	<b>0.002</b>	<b>&lt;0.001</b>
<b>&lt;34 weeks</b>	<b>3 (3%)</b>	<b>3 (2%)</b>	<b>1 (13%)</b>	<b>1 (11%)</b>	<b>1 (33%)</b>	<b>0.02</b>	<b>0.02</b>
<b>&lt;28 weeks</b>	<b>0 (0%)</b>	<b>0 (0%)</b>	<b>0 (0%)</b>	<b>0 (0%)</b>	<b>1 (33%)</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Spontaneous vaginal delivery	70 (71%)	93 (73%)	4 (50%)	6 (67%)	1 (33%)	0.38	0.27
Cesarean delivery							
Primary	12 (12%)	8 (6%)	2 (25%)	1 (11%)	2 (67%)	0.005	0.24
Repeat	13 (13%)	23 (18%)	2 (25%)	2 (22%)	0 (0%)	0.70	0.47
Excess blood loss	9 (9%)	8 (6%)	0 (0%)	0 (0%)	0 (0%)	0.67	0.14
Transfusion	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	NA	NA
<i>Live-born infants without malformations</i>							
<i>n</i>	99	130	8	8	3		
Small for gestational age	13 (13%)	14 (11%)	1 (13%)	2 (22%)	1 (33%)	0.61	0.42
Meconium-stained amniotic fluid	26 (27%)	25 (20%)	1 (13%)	0 (0%)	1 (33%)	0.34	0.12

Data shown as n(%). <sup>a</sup>Excludes abortuses.

**eTable 2. Pathologic Characteristics of Placentas From Deliveries Among Women With SARS-CoV-2 Infection During Pregnancy<sup>a</sup>**

Characteristic n		Total placentas N = 187	Maternal illness severity					p value
			Asymptomatic n = 70	Mild n = 99	Moderate n = 7	Severe n = 7	Critical n = 4	
No abnormality		9	3	5	0	1	0	0.74
Small for gestational age (<10 <sup>th</sup> percentile)		31	11	16	2	2	0	0.68
Large for gestational age (>10 <sup>th</sup> percentile)		30	10	17	1	2	0	0.76
<b>Any findings consistent with amniotic fluid infection</b>		69	24	40	2	2	1	0.85
<b>Maternal Response</b>	Normal	131	49	66	6	6	4	0.42
	Any maternal response	56	21	33	1	1	0	0.42
	Stage 1 early: acute subchorionitis or chorionitis	12	2	8	1	1	0	0.46
	Stage 2 intermediate: acute chorioamnionitis	37	16	21	0	0	0	0.29
	Stage 3 late: Necrotizing chorioamnionitis	2	0	2	0	0	0	0.77
	Severe: severe chorioamnionitis	4	2	2	0	0	0	0.97
<b>Fetal Response</b>	Normal	138	52	72	6	5	3	0.96
	Any fetal response	49	18	27	1	2	1	0.96
	Stage 1 early: single vessel vasculitis; chorionic plate vasculitis	31	11	17	1	2	0	0.81
	Stage 2 intermediate: >1 vessel vasculitis	18	7	10	0	0	1	0.62
	Stage 3 late: necrotizing funisitis/concentric umbilical perivasculitis	0	0	0	0	0	0	NA
	Severe: intense chorionic vasculitis with recent non-occlusive chorionic vessel thrombus	0	0	0	0	0	0	NA
<b>Findings consistent with maternal underperfusion</b>								
Villous changes		50	19	26	2	1	2	0.79
Vascular lesions, maternal		24	5	15	1	1	2	0.11
<b>Findings consistent with fetal vascular thrombo-occlusive disease</b>								
Villous changes		26	12	13	1	0	0	0.66
Vascular lesions, fetal		11	7	4	0	0	0	0.42
<b>Inflammatory lesions</b>								
Any inflammatory lesions		69	25	42	1	1	0	0.15
Chronic villitis with obliterative vasculopathy		1	0	1	0	0	0	0.93

Characteristic n	Total placentas N = 187	Maternal illness severity					p value
		Asymptomatic n = 70	Mild n = 99	Moderate n = 7	Severe n = 7	Critical n = 4	
Chronic villitis without obliterative vasculopathy	33	12	20	0	1	0	0.58
Basal chronic villitis	26	13	12	0	1	0	0.51
Chronic deciduitis with or without plasma cells	40	18	21	1	0	0	0.41
Chronic chorioamnionitis	5	4	1	0	0	0	0.40
Chronic intervillitis or histiocytic intervillitis	12	4	7	0	1 <sup>c</sup>	0	0.81
<b>Other lesions</b>							
Intervillous thrombus	36	18	16	1	0	1	0.36
Villous edema	11	2	6	3	0	0	<b>0.001<sup>b</sup></b>
Meconium (Gross or histologic evidence)	72	28	42	1	1	0	0.15
Massive perivillous fibrin deposition	2	1	1	0	0	0	0.99

Data shown as n(%).

<sup>a</sup>Pathologist was blinded to maternal illness severity and outcomes.

<sup>b</sup>Significant difference between moderate versus asymptomatic and mild illness.

<sup>c</sup>Massive chronic intervillitis demonstrated in one case of suspected preterm intrauterine SARS-CoV-2 transmission.