

COVID-19 and the Impact on Pregnancy Outcomes

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Background

- From the onset of the COVID-19 pandemic, there has been great concern regarding potential adverse effects of COVID-19 on pregnancy.
- To date, the impact of COVID-19 on maternal and neonatal health is unclear.¹⁻³
- The purpose of this study was to elucidate the impact of COVID-19 during pregnancy on maternal and neonatal health outcomes.

Methods

- We conducted a retrospective chart review of all women who delivered at a Northwell Health facility between March 1, 2020 and June 31, 2021.
- We divided our study population into two cohorts: women that had a positive COVID-19 PCR test during pregnancy (PCR Positive) and women that never had a positive COVID-19 PCR test during pregnancy (PCR Negative).
- Outcomes of interests included hypertensive disorders of pregnancy, delivery mode, preterm labor, preterm birth, fetal demise, and NICU admission.
- Statistical analysis was performed using SPSS to determine whether the outcomes of interest differed according to COVID-19 status during pregnancy.

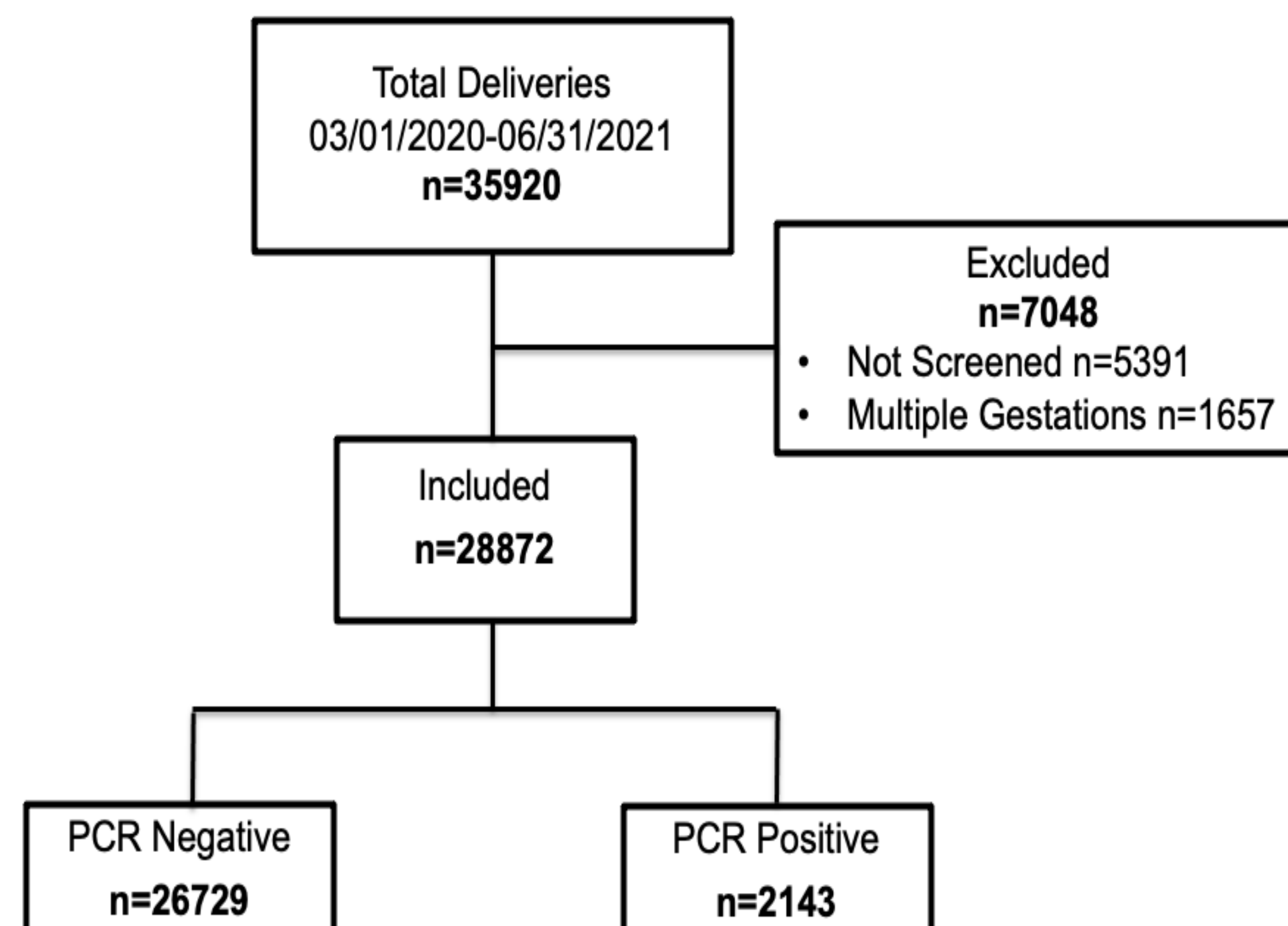


Figure 1: Study Population Inclusion and Exclusion Criteria

Results

	PCR Negative (n=26729)	PCR Positive (n=2143)	P value
ICU Admission, n(%)	133 (1%)	35 (2%)	< 0.05
Ventilator, n(%)	30 (0%)	12 (1%)	< 0.05
Preeclampsia, n(%)	1114 (4%)	111 (5%)	< 0.05
Eclampsia, n(%)	20 (0%)	0 (0%)	NS
HELLP Syndrome, n(%)	55 (0.2%)	9 (0.4%)	< 0.05
Preterm Labor, n(%)	354 (1%)	44 (2%)	< 0.05
Cesarean Section, n(%)	8215 (31%)	704 (33%)	< 0.05
APGAR 1 min <7, n(%)	814 (5%)	97 (7%)	< 0.05
APGAR 5 min <7, n(%)	261 (2%)	36 (3%)	< 0.05
Newborn Birthweight, mean (± SD)	3262 (± 559.9)	3220 (± 597.0)	< 0.05
Feeding Method, n(%)			
Formula	2386 (9%)	399 (19%)	< 0.05
Breastfeeding	8517 (32%)	460 (22%)	< 0.05

Table 1: Maternal and Neonatal Outcomes

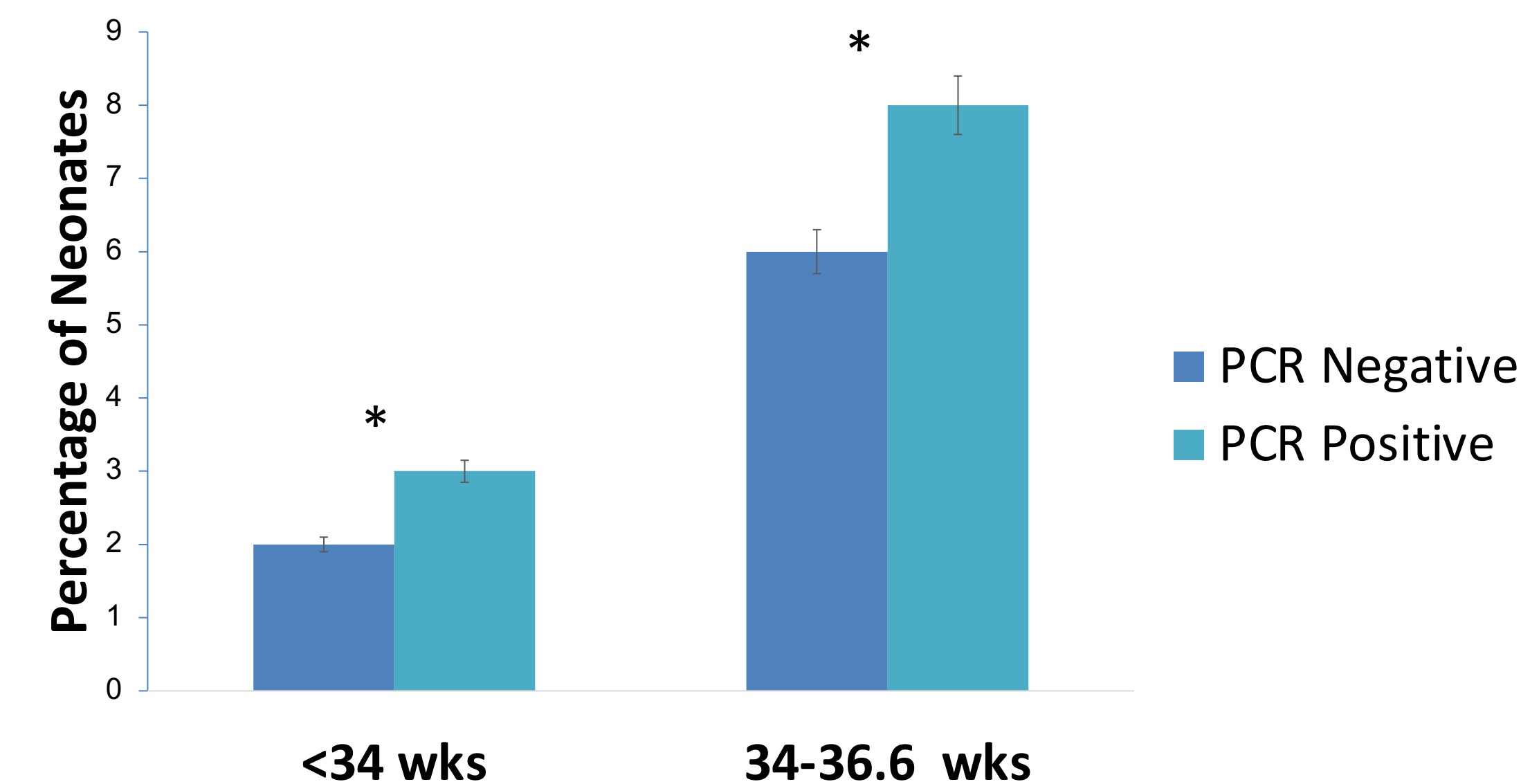


Figure 2: Incidence of Preterm Birth Stratified by Gestational Age; * P < 0.05.

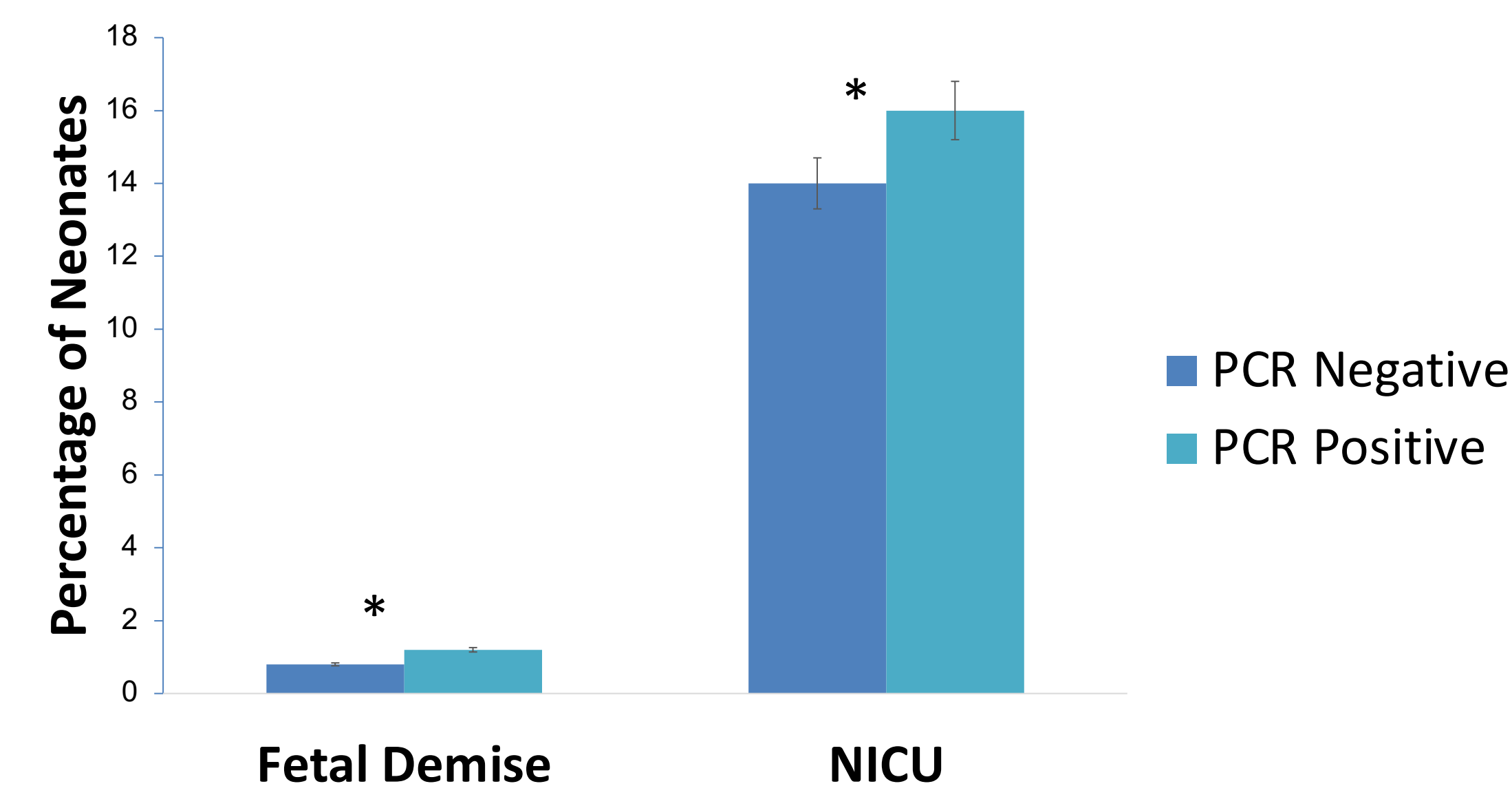


Figure 3: Incidence of Fetal Demise and NICU Admission; * P < 0.05.

Conclusions

- Women who contracted COVID-19 during pregnancy experienced higher rates of preeclampsia, HELLP Syndrome, preterm labor, preterm birth, and cesarean section compared to women who did not have COVID-19 during pregnancy.
- Neonates born to women who contracted COVID-19 during pregnancy experienced higher rates of fetal demise and NICU admission compared to neonates born to women who did not have COVID-19 during pregnancy.
- These findings highlight the importance of counseling pregnant women regarding the risks of COVID-19 as well as the urgency of adhering to preventative measures during this pandemic.

Future Directions

- In the future, we plan to look at maternal and neonatal outcomes, stratified by race/ethnicity.
- We also aim to investigate whether trimester of infection impacts neonatal outcomes.

References

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