Racial Disparities in Maternal and Neonatal Outcomes in the COVID-19 Positive Parturient

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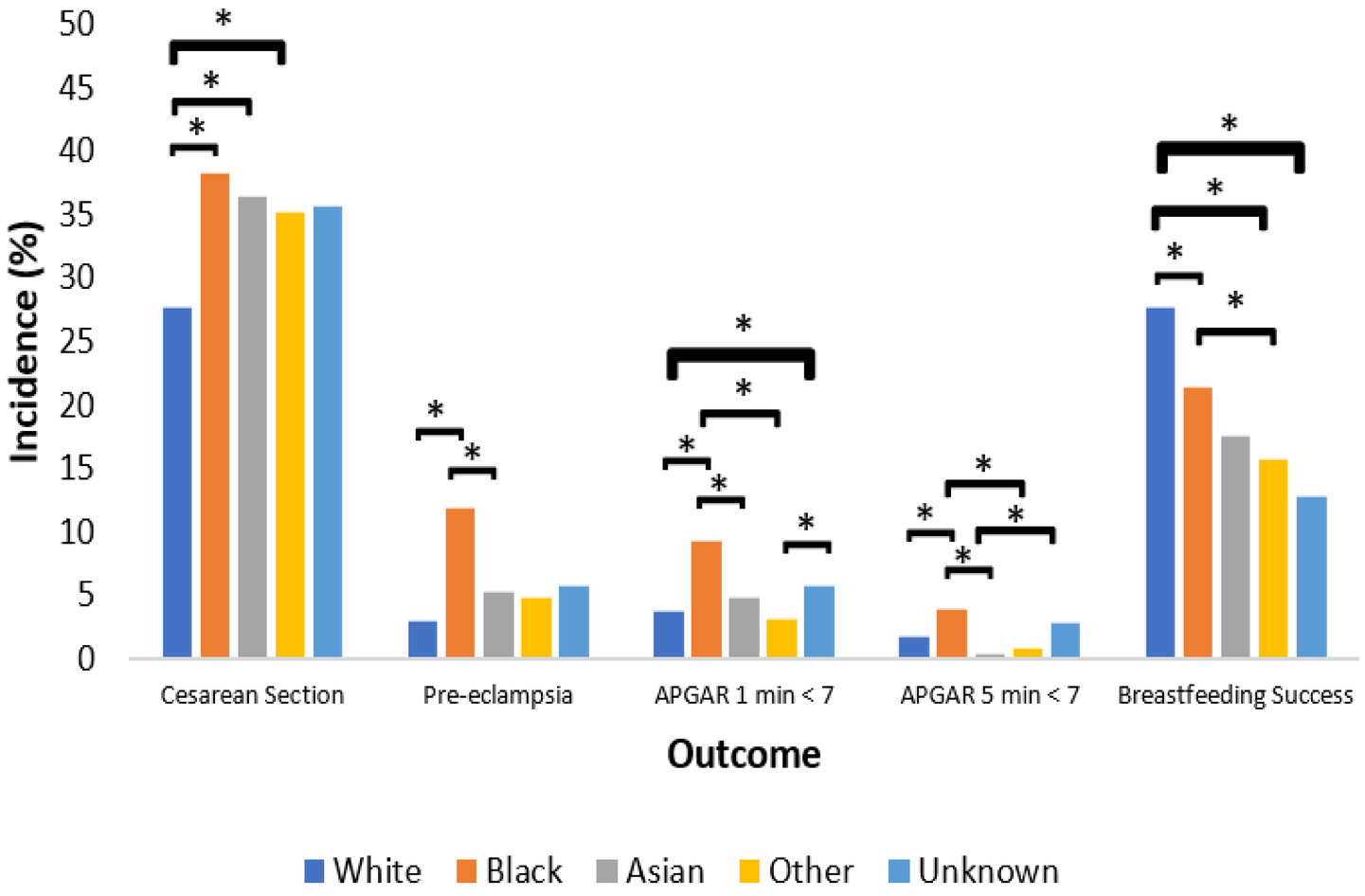
Introduction

- Racial and ethnic disparities exist in maternal healthcare manifesting as higher maternal and neonatal morbidity/mortality among underrepresented minorities.[2,3]
- Independent of racial and ethnic background, it has been shown by our group that maternal and neonatal outcomes are adversely affected by intrapartum COVID-19 infection.[1]
  - A previous study done by our group showed higher rates of ICU admission, ventilator use, pre-eclampsia, HELLP syndrome, preterm labor, cesarean delivery, low APGAR scores, low newborn birthweight, and lower breastfeeding success in the COVID-19 positive parturient and their neonates compared to the COVID-19 negative parturient.
- **Given the known increase in adverse outcomes to those with COVID-19, we sought to study whether underrepresented minorities were disproportionately affected by gestational COVID-19 infection.**

Methods

- **Retrospective chart review**
- Patient population → 2143 parturients who tested positive for COVID-19 during pregnancy and delivered at seven tertiary care hospitals within Northwell Health between March 1, 2020, and June 31, 2021.
- **Divided into 5 racial groups**: White, Black, Asian, Other (Multiracial and Native American), and Unknown
- In this study, we investigated adverse outcomes as defined in previous studies to see if there were differences between these racial groups
  - **Maternal outcomes:** Cesarean section, pre-eclampsia
  - **Neonatal outcomes:** APGAR scores below 7, breastfeeding success
- Chi-squared analyses or Fischer's Exact tests were performed based on sample size eligibility to determine whether the outcomes of interest differed between races in the COVID-19 positive parturient.



Results

- Compared to white women, black women had higher rates of:
  - **Cesarean delivery**
    - 38% vs. 28%, p<0.001
  - **Pre-eclampsia**
    - 12% vs. 3%, p<0.001
  - **APGAR scores less than 7 at 1 minute**
    - 9% vs. 4%, p<0.001
  - **APGAR scores less than 7 at 5 minutes**
    - 4% vs. 2%, p<0.001
- Compared to white women, black women had a lower rate of:
  - **Breastfeeding success**
    - 21% vs. 28%, p<0.001
- Compared to white women, Asian women had a higher rate of:
  - **Cesarean delivery**
    - 37% vs. 28%, p<0.001

Limitations

- Does not control for pre-existing conditions that may have an impact on maternal and neonatal health
  - Includes conditions such as obesity, hypertension, gestational diabetes, etc.
- Prior pre-gestational COVID-19 infection was not included in the analysis
- Did not analyze trimester of infection

Conclusions

- **Underrepresented parturients with gestational COVID-19 and their neonates experience more negative outcomes compared to the majority.**
- Future studies may investigate:
  - ERAS protocol in mitigating disparities between racial and ethnic groups
  - Bias (implicit/explicit)
  - Lack of resources contributing to poor antenatal care
- **Awareness is key!**
  - May help mitigate disparities and provide solutions to prevent negative outcomes in the future

References

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