ADVERSE PREGNANCY OUTCOMES ASSOCIATED WITH COVID-19 INFECTION IN WESTERN KENYA

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Victor Akelo[1], Gregory Ouma [2], Joyce Were[2,], Sammy Khagayi[2,], Dickson Gethi[2,], Richard Omore[2,], Feiko ter Kuile[3], Marc Bulterys[1,], Dickens Onyango[4] Beth A. Tippett Barr[1]

[1]US Centers for Disease Control and Prevention, Kisumu and Nairobi Kenya, [2]Kenya Medical Research Institute, Kisumu, Kenya, [3]Liverpool School of Tropical Medicine, [4]County Health Department, Kisumu, Kenya

BACKGROUND

- The COVID-19 pandemic has caused over 240 million infections and 5 million deaths. Little is known about the impact of COVID-19 on pregnancy outcomes in Sub-Saharan Africa. We followed a cohort of COVID-infected and uninfected pregnant women in Kenya until six weeks postpartum to assess the burden of COVID-19 and its association with poor maternal and neonatal outcomes

METHODS

- We conducted repeat SARS-COV-2 testing using polymerase chain reaction (PCR) on pregnant women enrolled in an antenatal COVID-19 cohort study (AnCOV)
- Those infected were managed according to Kenya Ministry of Health COVID-19 clinical guidelines
- Adverse pregnancies outcomes were compared among SARS-CoV-2 infected and uninfected women using multivariate log-binomial generalized linear models

RESULTS

- Between August 2020 and August 2021, 1688 pregnant women were enrolled; 998 completed pregnancy follow-up
- Of those, 259 (26.0%) had adverse outcomes, and 169 (22%) tested positive for SARS-CoV-2, of whom 93 (55%) were symptomatic. The most prevalent symptoms included cough (76.1%), headache (47.9%), anorexia (41%), anosmia (35.0%), fatigue (30.8%), joint pains (29.1%), fever (28.2%), runny nose (23.1%), chills (19.7%) and myalgia (12.8%). Fourteen COVID-19 pregnant women required hospitalization; none were admitted in ICU
- Very low birthweight (<1500g) (adjusted relative risk (aRR) 4.78, 95% CI 1.11-20.49), very preterm birth (<34 weeks) (aRR=2.57, 1.34-4.90) and preterm birth (<37 weeks) (aRR=1.54, 1.03-2.29) were more common among women with COVID-19
- There were no significant associations between COVID-19 in pregnancy and hypertensive disorders of pregnancy, preeclampsia, stillbirths and perinatal deaths the precise findings of the study

SARS-CoV-2 infection increases the risk of **very low birth weights** and **very preterm births** even among pregnant women with mild to moderate COVID-19

Table 1: Pregnancy outcomes comparing COVID-19 infected and non-COVID-19 infected pregnant women enrolled in an antenatal, intrapartum and post-partum COVID-19 (AnCoV) prospective study in western Kenya, 2020-2021

Outcome	Total	Unadjusted Risk Ratio		Adjusted Risk Ratio	
Maternal Outcomes[1]	**n (%)**	**Unadjusted RR (95% CI)**	***p-value***	**Adjusted RR[2]**	***p-value***
Hypertensive disorders of pregnancy	22 (2.0)	1.15 (0.26, 5.05)	*0.857*	1.17 (0.27, 5.17)	*0.832*
Preeclampsia	3 (0.3)	6.88 (0.43, 109.18)	*0.172*	6.99 (0.42, 116.88)	*0.176*
Preeclampsia or Eclampsia	3 (0.3)	6.88 (0.43, 109.18)	*0.172*	6.99 (0.42, 116.88)	*0.176*
Fetus/Infant Outcomes					
Stillbirth	48 (4.8)	0.40 (0.05, 3.0)	*0.368*	0.40 (0.05, 2.99)	*0.372*
Perinatal death	9 (0.9)	0.27 (0.04, 2.00)	*0.197*	0.28 (0.04, 2.08)	*0.215*
Very low birthweight (<1500g)	8 (1.0)	**4.99 (1.13, 22.00)**	***0.034***	**4.78 (1.11, 20.49)**	***0.035***
Low birthweight (<2500g)	63 (6.0)	1.63 (0.87, 3.05)	*0.129*	1.61 (0.86, 3.01)	*0.138*
Very preterm birth (<34 weeks)	88 (9.0)	1.23 (0.69, 2.20)	*0.488*	1.32 (0.74, 2.37)	*0.345*
Preterm birth (<37 weeks)	222 (22.0)	1.02 (0.71, 1.46)	*0.924*	1.07 (0.75, 1.53)	*0.714*
Very preterm birth (<34 weeks) - COVID+ onset <34w	83 (8.0)	**2.44 (1.26, 4.69)**	***0.008***	**2.57 (1.34, 4.90)**	***0.004***
Preterm birth (<37 weeks) - COVID+ onset <37w	212 (21.0)	1.49 (0.99, 2.24)	*0.053*	**1.54 (1.03, 2.29)**	***0.036***

[1]Adjusted for age (categorical; "underage 20" and "age 35 and older" as confounders)

[2]No maternal deaths were documented during the course of the study

CONCLUSIONS

- SARS-CoV-2 infection increases the risk of very low birth weights and very preterm births in western Kenya.

ADDITIONAL KEY INFORMATION

Author Contact Information

- Email: wsm4@cdc.gov
- Phone: +254722205543

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