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UNIVERSITY OF THE WITWATERSRAND

Faculty of Health Sciences

A RETROSPECTIVE REVIEW OF THE CASE RECORDS OF COVID-19 DISEASE IN PREGNANT WOMEN IN A TERTIARY HOSPITAL



MSc (Medicine) Dissertation

Obstetrics and Gynaecology

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ABSTRACT

Keywords: COVID-19, severity of disease, maternal and fetal outcomes, tertiary setting

Introduction and background: Coronavirus disease 2019 (COVID-19) remains a global communicable disease that is rapidly evolving. There are varying reports regarding the prevalence, profiles and outcomes of pregnant women with COVID-19. Limited information is available for developing country settings where disease profiles are different from high income countries. This study was conducted to describe the prevalence, profile and clinical outcomes of pregnant women admitted with a diagnosis of COVID-19 in a tertiary facility in Gauteng, South Africa.

Methods: The study was a retrospective review of maternal records over a six-month period during the first wave of the pandemic in the Gauteng province. The study group included all pregnant women who tested positive for COVID-19. Data captured included demographic, medical history, obstetric history, clinical findings and laboratory variables. This information was captured from paper-based clinical files onto a REDCap® database using dedicated data-collection sheets. On completion of the data capturing, the information was then exported into Microsoft Excel. Statistics analysed were mostly descriptive and analysis included medians with 95% confidence intervals where applicable. Ethical clearance for the study was granted by the WITS HREC (M201169).

Results: The study group included 204 pregnant women. The majority (97%) (n=198) were African with a median age of 31 years (IQR 26-35). Recorded BMI suggested 34% (n=44) were overweight and 51% (n=64) were obese. Co-morbidities were present in 41% (n=84) and more than one co-morbidity was present in 6% (n=13). HIV 33% (67/204) was the most common co-morbidity and viral loads were suppressed in 69% (40/58) and the median CD4 count was 405cells/ul (IQR 185-686). The caesarean section rate was 60% (105) mostly due to obstetric reasons and not COVID-19 indicated. There were 74 (36%) preterm deliveries and 8 (4%) of stillbirths. The median birth weight was 2940g (IQR 2450-3320g). Fifty-six (27%) patients presented with symptoms. Symptoms found predominantly were: cough 9% (n=18), dyspnoea 6% (n=12) and headache 4% (n=8) however, the majority 77% (n=148) of the

women were asymptomatic. MEOWS scores were used to triage disease profiles among those pregnant women who were symptomatic. MEOWS score of 0 means stable and a score of greater than 6 refers to critical illness. Five patients (3.9%) had recordable oxygen saturation below 94% (90-93%). Only 1 of the 5 (0.2%) was admitted into the ICU and was discharged alive. Thirty-three (63%) patients were critically ill (MEOWS >6), with 21(10%) admitted to the ICU and 3(1.5%) died from COVID-19, making the CRF 1.5%. Twenty-eight patients (13.7%) had pre-eclampsia and 61% (20/33) had a MEOWS score > 6. Pre-eclampsia was found to be significantly associated with severe COVID-19 disease ($p<0.0001$) and a higher BMI resulted in a greater MEOW score $p=0.012$, in contrast, patients with HIV had lower MEOWS scores ($p=0.025$).

Conclusion:

We found a high percentage of asymptomatic infections among pregnant. There was a low CFR amongst ICU admissions and not a single case of known neonatal transmission. There was a strong association of BMI and COVID-19 disease but low rates of severity of disease among those who were HIV positive and virally suppressed. Preeclampsia was significantly associated with severe COVID-19 disease and warrant greater caution. Future research into the interactions between HIV and COVID-19 in pregnancy as well as the use of scoring systems, like the MEOWS score, in COVID-19 in pregnancy are needed.

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Keywords: COVID-19, maternal mortality, pregnancy,