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Original Research Article

CLINICAL CHARACTERISTICS, OUTCOMES, & MORTALITY IN PREGNANT WOMEN WITH COVID-19

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Abstract: *The COVID-19 pandemic has significantly impacted global health, with pregnant women being identified as a vulnerable population. As the pandemic continues, there is a need to understand the clinical characteristics, outcomes, and mortality rates of pregnant women with COVID-19 to inform clinical decision-making and optimize care. This study aims to evaluate the clinical characteristics, outcomes, and mortality in pregnant women with COVID-19. The retrospective cohort analysis was conducted at the Bahria town international hospital Lahore and Family care hospital, Karachi from September 17, 2020, to September 30, 2021. A total of 109 records were evaluated. 69 patients infected with covid-19 diseases and had mid to moderate symptoms were included for further analysis. From the medical record, the data regarding the severity of the disease, clinical presentation at the time of admission, including signs and symptoms, the outcome of the pregnancy, and the mortality of pregnant women were noted. The most common clinical characteristics, fever, cough, throat pain, and shortness of breath, were noted at admission after confirmation of COVID-19 infection in mild to moderate cases of pregnant women. The most common co-morbid conditions were anemia (65%), hypertension, and diabetes (4.5% and 3.5%, respectively). The most common outcome was pre-term delivery 12 (18%). In our study population, there was only one miscarriage. The mortality rate in our study was zero. All the patients were discharged alive from the hospital. Only 3 patients were shifted to ICU and discharged after recovery. The caesarian section was done in more than half of the study group. Based on the results, pregnant women with COVID-19 are at increased risk of adverse outcomes, including pre-term delivery, cesarean delivery, and admission to the ICU. Mortality was zero in our study. Early detection and management of COVID-19 in pregnant women are essential to improve maternal and fetal outcomes. Healthcare providers should continue to monitor and evaluate the clinical characteristics, outcomes, and mortality rates in pregnant women with COVID-19 to inform clinical decision-making and optimize care.*

Keywords: Pregnancy, COVID-19, Clinical Characteristics, Mortality, Severity of Disease

Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Acter et al., 2020). The pandemic has caused significant morbidity and mortality worldwide, with pregnant women identified as vulnerable. The unique physiological changes in pregnancy and the potential impact of COVID-19 on maternal and fetal health have led to significant concern among healthcare providers and policymakers (Lucas and Bamber, 2021). COVID-19 in pregnancy has been associated with various clinical symptoms, including fever, cough, shortness of breath, and other respiratory symptoms (Yu et al., 2020). Adverse outcomes reported in pregnant women with COVID-19 include pre-term delivery, cesarean delivery, admission to the ICU, and respiratory failure (Salem et al., 2021). Maternal mortality rates among pregnant women with COVID-19 vary widely, but some studies have reported maternal deaths related to COVID-19 (Siqueira et al., 2021). There is a need to study COVID-19 in pregnant women to improve our understanding of the impact of the disease on maternal and fetal health, inform clinical decision-making, and optimize care for this vulnerable population. Previous studies have reported varying rates of adverse

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outcomes in pregnant women with COVID-19, but there is a need for more studies to evaluate the current state of knowledge on this topic (Asalkar et al., 2021; Mendez-Dominguez et al., 2021; Pham et al., 2021).This study aims to evaluate the clinical characteristics, outcomes, and mortality in pregnant women with COVID-19. By identifying common clinical characteristics, outcomes, and mortality rates, this study can inform clinical decision-making and improve care for pregnant women with COVID-19.

Methodology

This retrospective cohort analysis was conducted at Bahria town international hospital Lahore and Family care Hospital Karachi from September 17, 2020, to September 30, after the institutional review board and ethical committee were approved. A total of 109 pregnant female records were evaluated. Pregnant patients having confirmed diagnosis of covid-19 infection on PCR were included in this study. We selected 69 patients with mild to moderate symptoms of covid-19 infection. These patients are either managed on an OPD basis or in isolated rooms. None of the patients required ICU at the time of admission. Patients with multiple histories of c-sections, severe covid-19 infection, and twin pregnancies were excluded from the study. The data severity of the disease, clinical presentation at the time of admission, signs, and symptoms, the pregnancy's outcome, and the mortality of pregnant women were noted for further analysis. The data were analyzed by using the software SPSS version 25. The continuous symmetrical variable was presented as mean and standard deviation the categorical variable as numbers and frequencies.

Results

The mean age of the study group was 38.6 ± 13.8 years. The most common symptoms at the time of confirmation of RT-PCR positive in pregnant women were fever (62.6%) followed by Dry cough (57.9%), throat pain (41.1%), and shortness o breath (39.6%). The other signs and symptoms were cough with sputum (36.6%), fatigue (28.2%), nausea, and vomiting (27.8%) (figure1).

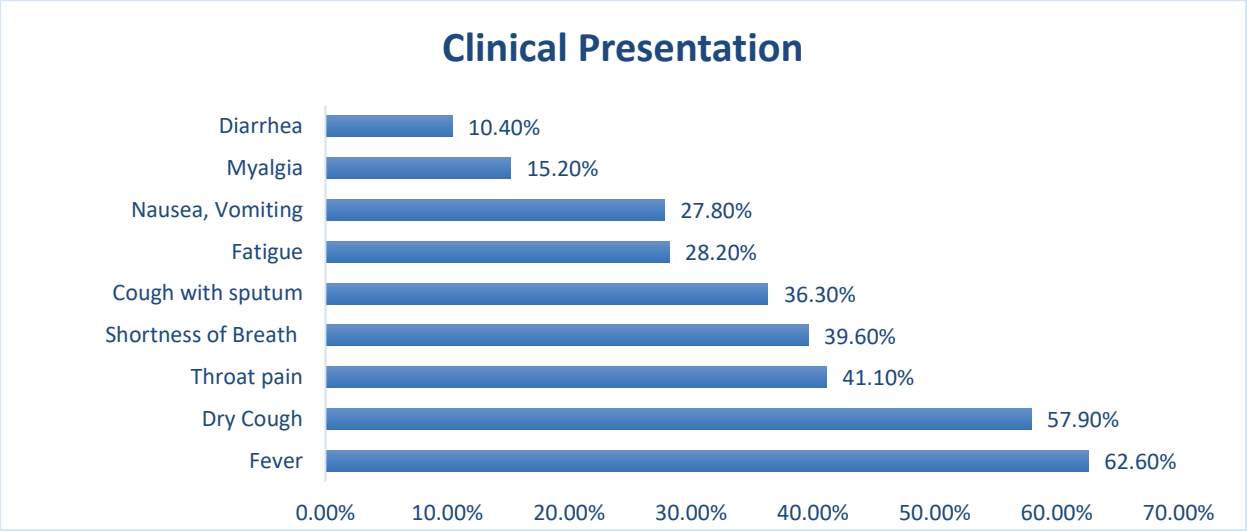

Figure 1 Clinical presentation of pregnant COVID_19-infected females

The most common co-morbid condition was anemia (65%), followed by hypertension (4.5%) and diabetes mellites (3.5%). Other conditions are shown in table 1. More than fifty percent of females (52.9%) underwent cesarean section, and our study group had high ratio of pre-term births (17.1%). Data showed 2.9% stillbirths and only 1.8% miscarriages (Table 2). Table 3 shows complications faced by covid-19 pregnant females. Gestational hypertension (9%), diabetes (10%), and 13% of other hypertension disorders were noted.
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Table: 1 Comorbidities in COVID-19-infected pregnant females:

Co-morbid conditions	N	%
Diabetes mellitus	2	3.5
Chronic hypertension	3	4.5
Tuberculosis	1	1.5
Hypothyroidism	6	8
Anaemia	45	65
Multiple comorbidities	6	8

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Table: 2 Pregnancy Outcomes of COVID-19 infected pregnant females

Pregnancy Outcomes	N	%
Total Delivered	**68**	
Cesarean Section	36	52.9
Vaginal Deliveries	32	47.1
Total pregnancies	**69**	
Pre-term Births	12	18
Still Births	2	2.9
Miscarriage	1	1.8
Ectopic Pregnancy	0	0
Medical Termination of Pregnancy	0	0

Table: 3 Outcome of COVID-19 infection in pregnant females:

Complications/Outcome	N	%
Pre-term Delivery	12	18%
PROM/PPROM	7	10%
Hypertensive Disorders	9	13%
Gestational Hypertension	6	9%
Preeclampsia	5	7%
Eclampsia	4	6%
Gestational Diabetes Mellitus	7	10%
Placenta Praevia	6	9%
Placental Abruption	1	2%
Uterine Rupture	1	2%

Discussion

The results of this study indicate that the most common symptoms of COVID-19 in pregnant women are fever, dry cough, throat pain, and shortness of breath. This is consistent with previous studies that have reported similar symptoms in pregnant women with COVID-19 (Antoun et al., 2020; Gajbhiye et al., 2021). However, the prevalence of symptoms may vary across different populations and settings. For example, a study conducted in Wuhan, China, reported that the most common symptom was fever, fatigue, and dry cough (Mazur-Bialy et al., 2020). Another study conducted in New York City reported that the most common symptoms were cough and shortness of breath (Zaigham and Andersson)

Regarding comorbidities, our study found that anemia was the most common condition among COVID-19-positive pregnant women, followed by hypertension and diabetes. These findings are consistent with previous studies that have reported similar comorbidities in pregnant women with COVID-19 (Jha et al., 2022).

Regarding obstetric outcomes, our study found a high cesarean section rate (52.9%) and pre-term birth (18%). These findings are consistent with previous studies that have reported similar obstetric o The findings of this study are consistent with previous studies that have reported adverse outcomes in pregnant women with COVID-19. A systematic review of 108 pregnancies reported that 3% of women required ICU admission, and 2.8% experienced maternal mortality (Zaigham and Andersson). Another study of hospitalized pregnant women with COVID-19 reported that 31% of women required ICU admission, and 5% experienced maternal mortality (Panagiotakopoulos et al., 2020).

This study has several limitations that should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the findings. Second, the study was conducted in a single center, which may limit the sample's representativeness. Third, the study relied on self-reported symptoms and comorbidities, which may be subject to recall bias. Fourth, the study did not collect data on the severity of COVID-19 in pregnant women, which may have important implications for obstetric and neonatal outcomes.

Conclusion

Pregnant women with COVID-19 are at increased risk of adverse outcomes, including pre-term delivery, cesarean delivery, and admission to the ICU. Early detection and management of COVID-19 in pregnant women are essential to improve maternal and fetal outcomes. Healthcare providers should continue to monitor and evaluate the clinical characteristics, outcomes, and mortality rates in pregnant women with COVID-19 to inform clinical decision-making and optimize care.

Conflict of interest

The authors declared an absence of conflict of interest.

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