ORIGINAL ARTICLE

Effects of Covid-19 Pandemic on First and Second Trimester Pregnancies

AASIA FOZIA[1], SAUDA BIBI[2], BREERA SADAF[3], QURATULAIN NAWAZ[4], ABDUL SATTAR[5], KHURRAM NADEEM[6]
[1]Senior Registrar Gynae and Obs department, Jinnah International Hospital, Abbottabad
[2]Junior Registrar Gynae and Obs department, Jinnah International Hospital, Abbottabad
[3]Senior Registrar Gynae and Obs department, Sheikh Khalifa bin Zayad Hospital, Quetta
[4]Women Medical Officer, Type D Hospital Sarai Naimat Khan, Haripur
[5]Anesthesiologist, Department of Anesthesia, Sindh Government Liyari General Hospital, Karachi
[6]Associate Professor Oral Medicine, Lahore Medical and Dental College, Lahore
Corresponding author: Aasia Fozia, Email: cuteariesian@yahoo.com, Cell: +923499130586

ABSTRACT

Objective: Main purpose of this study is to determine the effects of pandemic disease COVID-19 on first and second trimester pregnancies.

Study Design: Cross-sectional/Descriptive study

Place and Duration: Study was conducted at Gynae and Obs department of Jinnah International Hospital, Abbottabad for duration of 10 months from January to October, 2021.

Methods: Total ninety pregnant women of ages 18- 35 years were presented in this study. All the presented women had pandemic disease COVID-19. Women had first and second trimester pregnancies. Patients' age, body mass index, parity, education status, socio-economic status and residency were calculated after taking informed written consent. Chi square and t-test was performed to differentiate between symptomatic and asymptomatic cases. Outcomes were assessed in terms of stress, depression among mothers and low birth weight of infants, perinatal death, preterm delivery, and C-section. Data was analyzed by SPSS 23.0 version.

Results: Among 90 pregnant women 40 (44.4%) patients had first trimester pregnancies and 50 (55.6%) females had second trimester pregnancies. Mean age of the patients was 29.16±6.34 years and had mean BMI 22.13±5.16 kg/m². Majority of the patients 52 (57.8%) had parity primipara. 44 (48.9%) patients were educated and majority of the patients were financially weak 62 (68.9%). 55 (61.1%) females were from urban areas. 54 (60%) females were symptomatic and 36 (40%) were asymptomatic. Frequency of depression among females was 68 (75.6%) and depression was found in 61 (67.8%) cases. Low birth weight was found in 22 (24.4%) cases, prevalence of preterm delivery was among 38 (42.2%) cases, number of C-section among cases was 47 (52.2%). Perinatal death was found in 7 (7.8%) cases. Majority of the patients with infants were instantly discharged after delivery 75 (83.3%) and 8 patients were admitted because of severity of pandemic disease.

Conclusion: We determined in this study that Covid-19 among females with trimester first and second pregnancies were highly affected and had severity of psychotic disorders at start of disease but had lower adverse outcomes with low perinatal mortality. Majority of the females were recovered and discharged safely after delivery.

Keywords: Pregnancy, Trimester, C-section, Coronavirus, Outcomes

INTRODUCTION

A global pandemic triggered by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) has resulted in the disease COVID-19. It was discovered in Wuhan, China on December 19, 2019, and has since spread to more over 91 million people across the globe. Several new studies have found that both pregnant and non-pregnant women experience the condition in about the same way [2,4]. SARS-CoV-2 outcome in pregnant women may be compromised by physiological changes (such as decreased functional residual volume, increased stroke volume, and respiratory tract mucosal edoema) [5,6] and the possibility of adverse neonatal complications necessitates vigilant efforts to thoroughly assess possible risk factors.

In vulnerable populations, such as the poor, those with physical and mental problems, and pregnant women, pandemics have an even larger emotional impact. COVID-19 epidemic had a significant impact on the mental health and pregnancy-specific anxiety of 2740 pregnant women in the United States, according to a survey. Pregnant women in Canada, Iran, and China reported an increase in anxiety symptoms similar to those reported in the U.S. COVID-19 has been linked to an increased incidence of prenatal distress in several studies [9]. Pregnancy-related anxiety and sadness are more common in women who have strained or broken relationships or who are otherwise socially isolated. Additionally, these symptoms are linked to heightened concerns about prenatal care shortages, questions about the impact of COVID-19 on the safety of women and newborns, and consequences on obstetric decision-making. In February 2020, the first case of COVID-19 in Pakistan was discovered. As time has passed, the pandemic's toll on the country's already-strained healthcare system and already-struggling economy has only increased. Pre-pandemic levels of worry in Pakistan were already greater than in the majority of low- and middle-income countries, particularly among pregnant women and new mothers [12]. Due to the current pandemic, women's well-being throughout the pre- and postnatal period could be adversely affected by the absence of healthcare resources and the substantial treatment gap for mental diseases [13].

The risk of perinatal mortality and premature birth in pregnant women with viral pneumonia has previously been reported [14]. A rise in maternal death, IUD, miscarriage, and preterm births among women infected with the SARS-CoV-1 virus was reported in 2004. Nevertheless, it's still unclear how SARS-CoV-2 might affect pregnancy and what risks it poses to both the mother and the unborn baby. Because of the virus's novelty and recent distribution, there are very few data on the outcomes for pregnant women and their babies if the infection is acquired during the first or second trimester of their pregnancies, to be more precise. COVID-19 harmful effects on pregnancy were highlighted in the most current CDC report, which called for additional research in this area. [15]

Our goal was to determine the extent to which the stress and anxiety experienced by pregnant women was negatively impacting their well-being. During the COVID-19 pandemic, we also sought to examine the well-being of pregnant women and their associated factors.

MATERIAL AND METHODS

This cross-section/descriptive study was conducted at Gynae and Obs department of Jinnah International Hospital, Abbottabad for duration of 10 months from January to October, 2021 and comprised of 90 pregnant women with coronavirus infection. Patients' age, body mass index, parity, education status, socio-economic status and residency were calculated after taking informed written consent. Females less than 18 years of age, obese women and other comorbidities were not included in this study.

Age of the patients was between 18-35 years. Women had first and second trimester pregnancies. A topic guide for interviews was created, pilot-tested with two women, and amended in response to the comments gained from the pilot testing. Deeper interviews were conducted with participants to learn about their (1) understanding of the COVID-19 pandemic, (2) most pressing concerns in relation to their pregnancy and newborn, (3) perceptions of the impact of COVID-19 on their emotional and physical well-being, and (4) experiences with healthcare while the pandemic was occurring. It was made available to all participants the option of having their interviews conducted at a time that was most convenient to them. In any case where the participants' right to privacy during the interview would be jeopardized, they were offered the option of terminating the session and rescheduling it.

Chi square and t test was performed to differentiate between symptomatic and asymptomatic cases. Outcomes were assessed in terms of stress, depression among mothers and low birth weight of infants, perinatal death, preterm delivery, and C-section. Data was analyzed by SPSS 23.0 version.

RESULTS

Among 90 pregnant women 40 (44.4%) patients had first trimester pregnancies and 50 (55.6%) females had second trimester pregnancies. Mean age of the patients was 29.16±6.34 years and had mean BMI 22.13±5.16 kg/m^2. Majority of the patients 52 (57.8%) had parity primipara. 44 (48.9%) patients were educated and majority of the patients were financially weak 62 (68.9%). 55 (61.1%)

females were from urban areas. 54 (60%) females were symptomatic and 36 (40%) were asymptomatic.(table 1)

Table 1: Characteristics detailed demographics of enrolled cases

Variables	Frequency	Percentage
Mean age (years)	29.16±6.34	
Mean BMI (kg/m^2)	22.13±5.16	
Trimester		
First	40	44.4
Second	50	55.6
Parity		
Nullipara	38	42.2
Primipara	52	57.8
Education status		
Yes	44	48.9
No	46	51.1
Financially poor		
Yes	62	68.9
No	28	31.1
Residency		
Urban	55	61.1
Rural	35	38.9
Symptomatic to Covid-19		
Yes	54	60
No	36	40

Frequency of depression among females was 68 (75.6%) and depression was found in 61 (67.8%) cases. Severity of anxiety was found in 56 (62.2%) patients.(table 2)

Table 2: Association of psychotic disorders among pregnant women because of pandemic

Variables	Frequency	Percentage
Depression		
Yes	68	75.6
No	22	24.4
Stress		
Yes	61	67.8
No	29	32.2
Anxiety		
Yes	56	62.2
No	34	37.8

Low birth weight was found in 22 (24.4%) cases, prevalence of preterm delivery was among 38 (42.2%) cases, number of C-section among cases was 47 (52.2%). Perinatal death was found in 7 (7.8%) cases. (table 3)

Table 3: Post-operatively fetal outcomes among cases

Variables	Frequency	Percentage
Low Birth weight		
Yes	22	24.4
No	68	75.6
Preterm delivery		
Yes	38	42.2
No	52	57.8
Delivery		
C-section	47	52.2
Normal	43	47.8
Perinatal death		
Yes	7	7.8
No	83	92.2

Majority of the patients with infants were instantly discharged after delivery 75 (83.3%) and 8 patients were admitted because of severity of pandemic disease.(table 4)

Table 4: Details of healthy discharge and admission to NICU

Variables	Frequency	Percentage
Post Delivery Status		
Healthy Discharge	75	83.3
NICU Admission	8	8.9

DISCUSSION

The effects of the COVID-19 pandemic on pregnant and postpartum women who have anxiety symptoms. The study's main findings revealed that COVID-19-related issues increased perinatal anxiety and were linked to financial issues, overburdened health facilities, and a lack of trust in health professionals. Women were concerned about their health and safety, as well as that of their children. The majority of the women were confined to their homes, fearful of becoming infected and/or passing the infection on to their children.

In this observational study 90 pregnant females had coronavirus disease were included. Females had first and second trimester was presented. All the females were aged between 18-35 years. Among 90 pregnant women 40 (44.4%) patients had first trimester pregnancies and 50 (55.6%) females had second trimester pregnancies. Mean age of the patients was 29.16±6.34 years and had mean BMI 22.13±5.16 kg/m^2. Majority of the patients 52 (57.8%) had parity primipara. 44 (48.9%) patients were educated and majority of the patients were financially weak 62 (68.9%). 55 (61.1%) females were from urban areas. Above mentioned findings of current research showed resemblance to the previous some studies.[16,17] Pakistan has been hit hard by the COVID-19 pandemic [18]. Even before COVID-19, 24.3 percent of the population was poor [19]. According to a recent survey evaluating the socioeconomic impact of COVID-19 in Pakistan, 78 percent of respondents were concerned about their financial future, and 64 percent said their earnings had reduced as a result of the epidemic [20]. Daily wage earners were the hardest hit during the pandemic, especially during lockdowns, and their families battled to make ends meet. Furthermore, business failures and job losses left many people without a source of income. 78 percent of respondents in the same poll indicated increased household food shortages [21].

Frequency of depression among females was 68 (75.6%) and depression was found in 61 (67.8%) cases. Severity of anxiety was found in 56 (62.2%) patients. Our findings reflect these consequences of the economic downturn. Poor economic position and unemployment, as described in other studies, are important risk factors for anxiety and depression [22], particularly among persons under the age of 40 [23], the age range in which the majority of our participants are. Low birth weight was found in 22 (24.4%) cases, prevalence of preterm delivery was among 38 (42.2%) cases, number of C-section among cases was 47 (52.2%). Perinatal death was found in 7 (7.8%) cases. The documented COVID-19 pregnancy difficulties may have an impact on the unfavorable outcomes of pregnant women in their first and second trimesters, as well as their neonates. One fetal fatality, on the other hand, was linked to a miscarriage in a healthy woman who had experienced no pregnancy-related complications [24]. Preeclampsia and DIC were the most common consequences, according to the researchers. Infection with SARS-CoV-2 during pregnancy, according to Narang et al., has the potential to cause endotheliitis, which can lead to microvascular dysfunction [25].

Majority of the patients with infants were instantly discharged after delivery 75 (83.3%) and 8 patients were admitted because of severity of pandemic disease. Previous study showed same results to our findings.[17] COVID-19 positive first and second trimester moms and their newborns are not being followed up on enough due to the novelty of the subject. The majority of women who became pregnant during the pandemic's first and second trimesters have yet to give birth or complete their pregnancy. The development of complications, outcomes (both maternal and neonatal), and the course of pregnancies are all limited by these constraints. The current study gives a complete look at COVID-19 contracting patterns in the first and second trimesters, allowing for the development of relevant research.

Due to the fact that the vast majority of mothers who contracted COVID-19 during the first and second trimesters have not yet completed their pregnancies, there is an evidently limited quantity of information available about neonatal and maternal outcomes. Although most mothers were able to be discharged from the hospital without experiencing any major issues, placental inflammatory alterations as well as infant death have been documented in a small number of situations.

CONCLUSION

We determined in this study that Covid-19 among females with trimester first and second pregnancies were highly affected and had severity of psychotic disorders at start of disease but had lower adverse outcomes with low perinatal mortality. Majority of the females were recovered and discharged safely after delivery.

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