

An over-review of impact of Covid-19 infection in Pregnancy

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Abstract

Background: Covid-19 has proven to be a deadlier infection. Recent Covid virus has elicited consequential impact on pregnant women and their fetus.

Methods: The study was conducted in the department of Obstetrics and Gynaecology, S.P. Medical college and associated group of hospital, Bikaner, Rajasthan. This was a hospital based prospective comparative study. The study group comprise of pregnant females attending Obstetrics and Gynaecology O.P.D. A total of 108 women were examined.

Result: We retrieved 108 patients out of which 12 expired 0.8%, 48%, 52% were infected in 1st trimester and 2nd trimester and 3rd trimester respectively

Conclusion: Covid-19 itself is not an indication for timing or mode of termination of pregnancy. Still more studies are needed conclude the effect of Covid-19 in pregnancy.

Keywords: Covid-19, Pregnancy.

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I. Introduction

This is an unprecedented global war, and mankind is facing the same enemy, the novel coronavirus. And the first battlefield is the hospital where our soldiers are the medical workers.

Novel coronavirus is a new strain of coronavirus causing COVID-19, first identified in Wuhan City, China. Its characteristic especially those of person to person transmission were documented in December 2019.¹ What the state of Kerala witnessed in numbers were mainly asymptomatic woman with a very negligible vertical transmission rate. With the resurgence we are seeing in 2021, as it may be symptomatic pregnant women appear to be on rise.

The steady growth of the COVID-19 pandemic is evident by the flared familial clusters of pneumonia and human-to-human transmission.² India declared the first diagnosed case on 30 January 2020.

Recent viral infections have elicited consequential impact on pregnant women and their fetuses,³ with the aggravated complications in pregnant women with COVID-19, H1N1 influenza virus⁴ and the severe fetal effects of Zika virus, as recent examples. With regard to COVID-19, the limited data currently available. An intense inflammatory response has been reported as one of the key features of severe COVID-19,⁵ and as there is relative immunosuppression in pregnancy. However, pregnant patients with comorbidities may be at increased risk for severe illness consistent with the general population with similar comorbidities.⁶

Similar to nonpregnant patients, the predominant features of COVID-19 in pregnancy are fever, cough, dyspnea and lymphopenia. With this novel condition, obstetricians and international obstetric bodies sought to determine in a short time the impact this disease would have on pregnant women, if parturients were at a higher risk of morbidity and mortality and what effect, if any, this disease would have on the fetus.

Since there is a paucity of data available about effects of COVID-19 in pregnancy, we must trace back to other highly pathogenic coronavirus infections to gain astuteness into COVID-19's effect on pregnancy. We conducted this study to analyse the effect of COVID 19 on pregnant women.

II. Material And Methods

This study was conducted in Department of Obstetrics and Gynaecology, Sardar Patel medical college, Bikaner. It was an prospective study conducted between 1 april 2021- 31 June 2021. We retrieved a total of 108 pregnant women with Covid-19 infect. The inclusion criteria include the following: (1) a confirmed case of Covid-19 was defined as a suspected case with a positive result on high-throughput sequencing or real-time reverse transcriptase-polymerase chain reaction (RT-PCR) assay of nasal and pharyngeal swab specimens; (2) a

pregnant woman was diagnosed with Covid-19; (3) the onset of Covid-19 was in the pregnancy period; and (4) informed consent was obtained from the pregnant woman. The exclusion criteria include the following: (1) the onset of Covid-19 occurred before or after pregnancy and (2) those who lost to follow-up.

III. Result And Observation

In table 1, we found that 7.4% patients are infected in 1st trimester followed by 44.4% patients in 2nd trimester out of them 7.4% patients are in delivery group. 48.14% patients are present in 3rd trimester out of them 18.5% patients are in delivery group. There is significant difference between these group as p value is <0.05.

Table 1: Distribution of patients according to infection period.

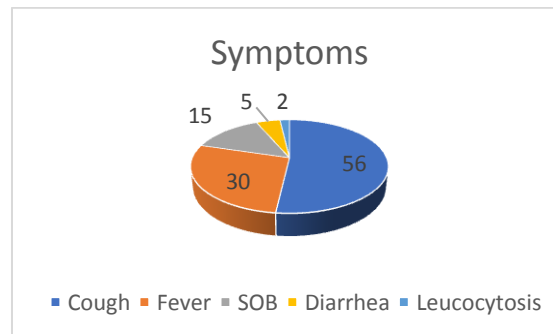
Infection Period	Delivery Group	Abortion Group	Total	P-value
1st Trimester	0(0%)	4(3.7%)	8(7.4%)	0.04
2nd Trimester	10(9.2%)	0(0%)	48(44.4%)	0.004
3rd Trimester	38(35.18%)	0(0%)	52(48.14%)	<0.0001

In table 2, we found that 40.7%, 33.3% and 6.4% patients of mild symptoms are present in 1st, 2nd and 3rd trimester respectively. 11.1%, 7.4% and 0.9% patients are of severe symptoms are present in 1st, 2nd and 3rd trimester respectively. There is no significant difference between these group as p value is 0.8.

Table 2: Distribution of cases according to severity.

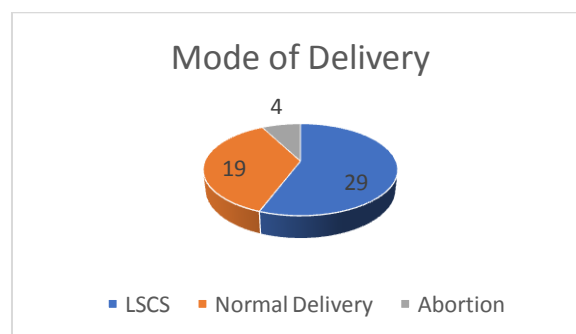
Condition	1st Trimester	2nd Trimester	3rd Trimester	P-value
Mild Case	7(6.4%)	36(33.3%)	44(40.7%)	0.8
Severe Case	1(0.9%)	8(7.4%)	12(11.1%)	

In graph 1, we found that 51.85% patients shows cough as a symptom followed by 27.78% with fever followed by 13.89% with shortness of breath. 4.63% and 1.85% patients are of diarrhea and Leucocytosis respectively.



Graph 1: Distribution of cases according to symptoms.

In graph 2, 17.59% patients are of normal delivery followed by 26.85% patients of LSCS and 3.7% patients face abortion.



Graph 2: Distribution of cases according to mode of delivery.

Table 3: Distribution of cases according to Outcome.

Outcome	1st Trimester	2nd Trimester	3rd Trimester	P-Value
Cure	7(6.4%)	40(37.03%)	40(37.03%)	0.63
Death	1(0.9%)	8(7.4%)	12(11.1%)	

In table 3, we found that 37.03%, 37.03% and 6.4% patients are recovered in 1st, 2nd and 3rd trimester. 11.1%, 7.4% and 0.9% patients in 1st, 2nd and 3rd trimester patients died. There is significant difference between these group as p value is <0.05.

IV. Discussion

In table 1, we found that 7.4% patients are infected in 1st trimester followed by 44.4% patients in 2nd trimester out of them 7.4% patients are in delivery group. 48.14% patients are present in 3rd trimester out of them 18.5% patients are in delivery group. There is significant difference between these group as p value is <0.05. In table 2, we found that 40.7%, 33.3% and 6.4% patients of mild symptoms are present in 1st, 2nd and 3rd trimester respectively. 11.1%, 7.4% and 0.9% patients are of severe symptoms are present in 1st, 2nd and 3rd trimester respectively. There is no significant difference between these group as p value is 0.8. A study by Wang Y et al⁷ found that 13 cases (18.1%) were infected with SARS-CoV-2 in the first trimester, 6 cases (8.3%) in the second trimester, and 53 cases (73.6%) in the third trimester. Sahu K K et al⁸ found that with the better understanding of Covid-19 in pregnancy and delivery, obstetricians and researchers have realized that pregnancy is not a poor prognostic factor in patients suffering from Covid-19, the timing and mode of terminating pregnancy should be directed by obstetric factors and clinical urgency, and Covid-19 itself is not an indication for abortion or delivery.⁹

In graph 1, we found that 51.85% patients shows cough as a symptom followed by 27.78% with fever followed by 13.89% with shortness of breath. 4.63% and 1.85% patients are of diarrhea and Leucocytosis respectively. The first notable finding of Yee J et al¹⁰ is the difference in common COVID-19 symptoms between pregnant patients and non-pregnant patients. Well-known symptoms of COVID-19 include fever, cough, and dyspnea; in a previous study on non-pregnant COVID-19 patients, the proportion of those who show each symptom was shown to be 83%, 82%, and 31%, respectively.¹¹ Similar to nonpregnant patients, the predominant features of COVID-19 in pregnancy are fever, cough, dyspnea and lymphopenia and are further presented.¹² A more detailed review of 118 pregnant women in Wuhan with confirmed COVID-19 subsequently presented by Chen et al.¹³ observed similar results, that the most common symptoms in 112 women with available data were fever (75%), cough (73%) and lymphopenia (44%). These figures have been similar in other studies.^{14,15} There are also reports of atypical clinical presentations in COVID-19 pregnant patients, including a normal temperature (56%) and leucocytosis¹⁶ and other symptoms, including nasal congestion, rash, sputum production, headache, malaise and loss of appetite in less than 5% of cases.¹⁷

In graph 2, 17.59% patients are of normal delivery followed by 26.85% patients of LSCS and 3.7% patients face abortion. We found that 37.03%, 37.03% and 6.4% patients are recovered in 1st, 2nd and 3rd trimester. 11.1%, 7.4% and 0.9% patients in 1st, 2nd and 3rd trimester patients died. There is significant difference between these group as p value is <0.05. Yee J et al¹⁰ found that the Cessarean delivery rate varied across studies from 18.2 to 100%. Of utmost importance is the effect of COVID-19 infection in pregnant women; in this regard, pregnancy outcomes were observed in their study. In total, 29% of the study sample exhibited preterm delivery, a strikingly high number compared to the norm, which was reported to be between 5 and 18%.¹⁸ Wang Y et al found that out of 72 patients 57 patients are cured in delivery group and 15 patients are cured in aborted group. There is no death in both groups.

V. Conclusion

COVID-19 has proven to be a deadlier infection as compared to the previous two coronavirus-caused infection, SARS and MERS. Covid-19 itself is not an indication for the timing and mode of terminating pregnancy. There is still lack of definite evidence on vertical transmission of SARS-CoV-2. In addition to control infection risk, researchers and healthcare providers should pay more attention to maternal mental health and infant's feeding, closeness with parents, and early development. Therefore, we call for more large-sampling, high-quality designed, and long-term cohort studies, or even transnational studies are needed to follow up and evaluate the long-term effects on maternal and offspring health during the outbreak of Covid-19.

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