

CLINICAL FEATURES OF COVID-19 IN PREGNANCY

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Received : 01/10/2023
Received in revised form : 03/11/2023
Accepted : 12/11/2023

Keywords:
COVID-19, Pregnancy, Clinical feature.

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DOI: 10.47009/jamp.2023.5.6.61

Source of Support : Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (6); 301-305



Abstract

Background: The WHO declared a global pandemic of coronavirus disease 2019 caused by (SARS- CoV-2) in March 2020. As Covid 19 Is a pandemic and is affecting people adversely and it being a new emergence we know little about the behavior of same, the rationale behind this study would be to understand the effects it has on pregnancy which will help us for better management of the same. The objective is to study the clinical feature of Covid-19 in pregnancy. **Materials and Methods:** This Descriptive-Observational study was conducted among all Pregnant women testing positive for COVID- 19 by Real Time PCR/ Rapid antigen test over a time period of one year in SDM College of medical sciences and hospital. Laboratory confirmation of SARS-CoV-2 infection by throat swab specimens from the URTI of all the patients at admission taken, SARS-CoV-2 infection was confirmed by real time RT-PCR/Rapid. Various clinical, maternal, fetal outcomes was studied. **Result:** Among 210 patients of COVID-19. Majority of the study population was in age group 26-30 years, Most of them presented in the 3rd trimester of pregnancy, majority of the patients at admission were asymptomatic, cough being the most common symptom of presentation in 31.4% of the patients.No particular lab value was deranged in most of the patients, previous LSCS was the most common indication for caesarean section in my study, ICU admission was done for 16 women post-delivery. Only two deaths were noticed among 210 cases in present study. Vertical transmission was seen in only 6 babies. **Conclusion:** In majority of the women affected by COVID-19 during pregnancy did not show symptoms. whereas the rest had minor symptoms with average normal biological and hematological profiles.

INTRODUCTION

Covid-19 pandemic is the most common topic which was discussed worldwide in 2020, SARS-COV2 is a strain of Coronavirus which is responsible for COVID-19, first identified in China (Wuhan city) in early December of 2019.^[1] As there are lot of Physiological and immune changes which take place in pregnancy, The pregnant women may be at higher risk of acquiring the Covid-19 infection, The number of pregnant women who are getting infected is increasing, but scarce data is available on impact of Covid-19 in pregnancy hence our study is undertaken to throw some light on various outcomes in pregnancy to mother and fetus due to impact of Covid-19.

The most cases globally are transmitted by human to human, the virus is easily isolated from respiratory secretions, droplets, faeces and to lesser extent from fomites, infection usually occurs when there is close contact with the infected person, rarely with contaminated surfaces .With regards to vertical transmission there is evidence that it can occur, but its uncommon not influenced by rooming in, mode of delivery, mode of feeding, skin-skin contact, delayed cord clamping.^[2,3] There is No evidence supporting an increased risk of miscarriage or early loss with COVID-19 infection Currently there is no evidence that the COVID-19 has no teratogenic effect on fetus In regards to medical termination of pregnancy COVID-19 infection to the mother isnot an indication.^[4]

Women are advised to have their regular antenatal care visits, at 12, 20,28 and 36 weeks of gestation, unless they meet the self-isolation criteria. Any obstetric complication in a pregnant lady with COVID-19 infection during antenatal care, patient should be immediately referred to a tertiary care centre for further management.

Once the patient gets admitted to the isolation room, a proper maternal and fetal examination to be conducted. The severity of COVID-19 symptoms should be assessed by a multidisciplinary team. Delivery preferably to be conducted at a tertiary care hospital. Various maternal parameters like temperature, respiratory rate and oxygen saturations to be monitored. The progress of labour to be monitored as per standard care. There is no current evidence regarding the favourable method of mode of birth. The mode of delivery must not be influenced by the presence of the COVID-19 infection, unless the pregnant woman's respiratory condition worsens and she requires urgent delivery. COVID-19 vaccination can be given along with other vaccines, including within 14 days of administration of another vaccine, these include vaccines like influenza and Tdap commonly administered during pregnancy.^[5,6]

MATERIALS AND METHODS

This Descriptive- Observational study was conducted among all Pregnant women testing positive for COVID- 19 by Real Time PCR/ Rapid antigen test over a time period of one year in SDM College of Medical Sciences and Hospital. Laboratory confirmation of SARS-CoV-2 infection by throat swab specimens from the URTI of all the patients at admission taken, SARS-CoV-2 infection was confirmed by real time RT-PCR/Rapid.

Inclusion Criteria

All Pregnant women tested positive for COVID- 19 by Real Time-PCR/ RAPID test.

Exclusion Criteria

All Pregnant women who tested negative for COVID-19 by Real Time PCR/RAPID test

- Sampling population -Pregnant women
- Sample size calculation-As Covid -19 is an ongoing pandemic, sample size cannot be determined, the study will include all pregnant women who have tested positive for COVID- 19 with Real time PCR/RAT, in the specified time period (August 2020 to July 2021). All pregnant women in specified time period irrespective of symptoms were tested for Covid 19 infection.
- Sampling technique –Purposive sampling

Statistical Analysis: Statistical analysis was done using SPSS software version 26, 64 bits. All the grading recorded were entered into SPSS software and code book was prepared. The present study is a form of observational study regarding Maternal and fetal outcomes of Covid-19 in pregnancy. Frequencies, percentage, mean, standard deviations

were assessed and appropriate graphs were used for the presentation of the data.

RESULTS

The present study was conducted in Sri DharmasthalaManjunatheshwara Medical College, Sattur, Dharwad. 210 pregnant women who were tested positive for Covid- 19 were recruited for the present study and the outcomes were analyzed using various parameters.

To describe about the data descriptive statistics, frequency analysis, and percentage analysis were used. Age, parity, gravida, socioeconomic status, gestational age, contact history, travel history, different neonatal and maternal outcomes etc other appropriate explanatory variables were analyzed.

In the present study, 86 cases were in the age group 26-30 years followed by 73 cases in the age group 21-25 years, 29 cases in the age group 31-35 years, 11 cases in the age group 36-40 years, 9 cases in the age group Less than 20 years and lastly only 2 cases were more than 40 years old.

Most of the cases that is 88 women were primi gravida followed by 61 cases Gravid-2, 36 cases Gravid-3, 20 cases Gravid-4, 4 cases were Gravid-5 and only 1 case was of group Gravid-7.

Out of 210 patients, 154 women were between the Gestational age 31-40 weeks followed by 45 women who were more than 40 weeks pregnant, 8 women who were between 21-30 weeks, 2 women between 11-20 weeks and 1 woman who was less than 10 weeks pregnant. Out of 210 women, only 14 women had the history of travel in the recent times. Remaining 196 didn't have any history of travel.

Out of 210 women, 43 women presented with fever on admission. Remaining 167 didn't had complaints of fever on admission. [Table 1]

Out of 210 women, 66 women presented with cough on admission. Remaining 144 didn't had complaints of cough on admission. Out of 210 women, only 14 women presented with complaint of Dyspnoea on admission. Remaining 196 didn't had complaint of Dyspnoea on admission. [Table 2]

Out of 210 women, only 1 woman presented with complained of Sore throat on admission. Remaining 209 didn't had complaint of Sore throat on admission. Out of 210 women, only 1 woman presented with complaints of Diarrhoea on admission. Remaining 209 didn't had complaint of Diarrhoea on admission.

In the present study, X-ray was not done in 166 pregnant women. However, 38 women were subjected for X-ray. Among 38 women, the reports were normal for 31 women. In 4 women, B/L bronchopneumonia was noticed on X-ray, 2 women had pleural effusion and opacity changes were seen in X-ray of 1 patient. 6 women discontinued from the study. [Table 3]

In the present study, CT-Chest was not done in 194 pregnant women. However, 10 women were

subjected for CT-chest. Among 10 women, 5 were detected with CORADS-6, 1 woman each with CORAD-S 5, B/L pleural effusion, Pleural effusion with Basalatelectasis, 1 with bronchiectasis. 6 women discontinued from the study.

In the present study, Rapid antigen test was not performed in 102 pregnant women. However, 102 women were subjected for RAT got Covid-19. Among 102 women, 100 were tested positive for Covid-19 and 2 were tested negative. 6 women discontinued from the study.

In the present study, RTPCR was not performed in 78 pregnant women. However, 126 women were subjected for RTPCR got Covid-19. Among 126 women, all were tested positive for Covid-19. 6 women discontinued from the study. [Table 4]

All the patients were examined for the changes in Leucocytes counts. 109 women had the leucocytes counts between 5,000-10000/micro litre, 61 women had between 11,000-15,000/micro liter, 20 between 16,000-20,000/ micro litre, 11 women had count more than 20,000/micro liter and 3 women had less than 5000/micro litre. 6 women were lost to follow up.

All the patients were examined for the changes in CRP levels. 84 women had the CRP levels less than

10 mg/ltr, 23 women had between 11 to 20 mg/ltr, 30 between 21-30 mg/ltr, 14 between 31-40 mg/ltr and 53 women had levels more than 40 mg/ltr. 6 women were lost to follow up. [Table 5]

All the patients were examined for the changes in Ferritin levels. 38 women had the Ferritin levels less than 50 mg/ltr, 39 women had between 51-100 mg/ltr, 43 between 101-150 mg/ltr, 33 between 151-200 mg/ltr, 21 between 201-250 mg/ltr and 30 women had levels more than 250 mg/ltr. 6 women were lost to follow up.

All the patients were examined for the changes in LDH levels. 2 women had the LDH levels less than 100 u/ltr, 60 women had between 101-200 U/ltr, 72 between 201-300

U/ltr, 38 between 301-400 U/ltr, 19 between 401-500 U/ltr and 13 women had levels more than 500 U/ltr. 6 women were lost to follow up.

All the patients were examined for the changes in Platelet levels. 6 women had the platelet levels less than 50k cu/mm, 3 women had between 50k-1lakh cu/mm, 57 between 1.1lakhs-2 lakhs cu/mm, 104 between 2.1 lakhs to 3 lakhs cu/mm, 26 between 3.1 lakhs to 4 lakhs cu/mm, 7 women more than 4 lakhs cu/mm and 1 woman had levels which were markedly increased. 6 women were lost to follow up. [Table 6]

Table 1: Showing Fever as the presenting complaints on admission of the patient

Presenting complaints on admission-Fever	Frequency	Percentage
No	167	79.5
Yes	43	20.5
Total	210	100.0

Table 2: Showing Dyspnoea as the presenting complaints on admission of the patient

Presenting complaints on admission-Dyspnoea	Frequency	Percentage
No	196	93.3
Yes	14	6.7
Total	210	100.0

Table 3: Showing X-ray findings of the patient

X-ray findings if done	Frequency	Percentage
Not done	166	79.05
Normal	31	14.8
B/L Bronchopneumonia	4	1.90
Pleural effusion	2	0.95
Opacity	1	0.48
Lost to follow up	6	2.86
Total	210	100.0

Table 4: Showing results of RTPCR for Covid19 findings of the patient

RTPCR for Covid-19	Frequency	Percentage
Not done	78	37.1
Positive	126	60.0
Lost to follow up	6	2.86
Total	210	100.0

Table 5: Showing CRP results of the patient

Laboratory findings CRP	Frequency	Percent
Less than 10 mg/lt	84	40.00
11 to 20 mg/lt	23	10.95
21 to 30 mg/lt	30	14.29
31 to 40 mg/lt	14	6.67
More than 40 mg/lt	53	25.24
Lost to follow up	6	2.86

Total	210	100
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Table 6: Showing mean values of laboratory parameters

Descriptive Statistics	N	Minimum	Maximum	Mean
LDH	196	84.00	1815.00	286.6276
TLC	202	3370.00	26700.00	12664.3861
CRP	194	0.20	212.42	28.0394
Ferritin	196	4.20	702.00	141.9671
Platelets	198	0.06	4.38	2.2620
D-Dimer	40	144.20	3307.00	1051.4925

DISCUSSION

41% of patients in this study belong to an age group between 26-30 years, mean age of 27+/-4.6 yrs, Yan et al conducted a study where in the mean age of the population studied was 30.8+/-3.8 years.^[7]

One more study done by Dashraath et al concluded that the mean age of the study population was 23-40 years.^[8]

In a study by Chen et al the mean age was 29.89+/-4.83 years of the study population.^[9] (67). A study by Bachani et al showed that 26.7/-4.5 years was the mean age of its study participants.^[10]

Most of the patients were admitted in the third trimester (73.3%), the participants belonged from gestational age 31-40 weeks in our study. A study by Yan et al showed that 38 weeks was the mean gestational age of their study population.^[7]

Similar study done by Dashraath et al showed that most of its participants were from the 3rd trimester (96.4%).^[8]

One more study by Yu N et al concluded that 39 weeks +1 days was their mean gestational age.^[11]

One study showed that most of its participants belonged to the third trimester 66.6% which was conducted by Chen et al.^[9]

Most of the study participants belonged to the semester i.e 83.5% in the study by Priyadarshini et al.^[12]

90% of the COVID-19 positive pregnant patients belonged to the 3rd trimester in a study conducted by Cardona-Perez et al,^[13]

In our study population majority of the patients were asymptomatic i.e (58.09%) Few other studies conducted by Yan et al,^[7] Yu et al,^[11] Chen et al,^[9] Bachani et al,^[10] concluded that 23.3% , 14.3%,5.1%,17.5% were reportedly asymptomatic

In our study population cough (31.4%) was the most common followed by fever(20.5%), dyspnoea(6.7%), malaise(6.2%), sore throat (0.5%), diarrhoea (0.5%) In a study by Rani M et al the most commonest presenting complaint was pain abdomen (66.7%), cough(20%), fever (13.3%), anosmia and loss of taste(13.3%)(75) In a study reported Yan et al , fever was the commonest symptom(50.9%), cough(28.4%), sore throat (8.6%) and fatigue(12.9%).^[7]

In another study by Dashraath et al fever was the commonest symptom 84%, cough 28%, breathlessness 18%.^[8]

Fever being the commonest symptom 86%, cough 14%, dyspnoea 14%, diarrhoea 14% were symptoms seen in study by Yu N et al,^[11] Study by Priyadarshini et al concluded that most patients presented with fever 56%, followed by cough 28.8%.^[12]

The platelet count in our study was between 2.1 to 3 lakhs /cumm Chen et al concluded that the mean platelet count in his study was 1.9 lakhs /cumm 9 Bachani came to a conclusion that in his study 1.65 lakhs /cumm was the mean platelet count.^[10]

On the other hand Breslin et al reached a conclusion that 2 lakhs/cumm was the mean in their study group According to Rani M et al mean platelet was 1.9 lakhs/cumm.^[14,15]

In our study the mean TLC count was between 5000-10000/ml (51.9%) According to Rani M et al the mean TLC was 8700/ml.^[15] In a study by Yan et al the mean total leucocyte count was 7900/ml. Chen et al concluded that his study participants had a mean TLC of 7600/ml Bachani et al observed that in his study mean TLC of the participants was 9700/ml. Breslin et al study showed that the mean TLC was 6600/ml.

In our study the mean values of CRP was 28.03 mg/dl, D-dimer was 1051.49 ng/ml, and LDH was 286.62 IU/L.

In one of the study by Comoglu S et al, the mean C-reactive protein of the pregnant women with COVID -19 infection was 39.5/-49.38 mg/l(1-197), D- dimer was 1541.9+/-1070.13 ng/ml(430-5599) and LDH was 255.9+/-112.34 u/l(84-735).^[16]

In the study by Yu N et al in 100% patients the D-dimer levels were above normal range, 100% of the patients had CRP levels above the normal levels.^[17]

CONCLUSION

In majority of the women affected by COVID-19 during pregnancy did not show symptoms. whereas the rest had minor symptoms with average normal biological and hematological profiles.

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