



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

OBSTETRIC AND PERINATAL OUTCOME OF COVID 19 INFECTED PREGNANT WOMEN IN TERTIARY CARE CENTRE, MANIPUR

KEY WORDS: COVID19, maternal mortality.

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ABSTRACT
BACKGROUND: COVID 19 has effected pregnant women more severely during 2nd wave. The pregnant women who infected with covid 19 during this wave required more oxygen support and icu care. My study is to know the obstetric and perinatal outcome in covid 19 infected pregnant women. **Study Method:** The study which has been undertaken was a retrospective observational study. Data was collected from records of covid 19 infected patients, who were admitted at the Department of Obstetrics and gynaecology during may to November 2021 in Regional institute of medical sciences, Imphal, Manipur. **Results:** Majority of patients are parity 1-2 (54.5%), primigravida (39.5%) and multipara 6%. The obstetric outcome were 168 (55.8 %) cases delivered, 19 (6.3%) cases had abortions, 7 (2.3 %) cases maternal deaths, 2 (0.7%) cases ectopic, preterm delivery 11 (3.65%) cases, IUGR 3 (0.99%) cases, IUD 10 (3.32%) cases, PPH 1(0.33%). **Conclusion:** Pregnant women more at risk for covid 19 than normal population because of immunocompromised state of pregnancy, not only maternal outcome but also perinatal outcome was poor during 2nd wave of covid 19 based on my observational study. Pregnant women requiring oxygen support has been increased, maternal mortality too increased.

INTRODUCTION
 The world health organisation declared the SARS-CoV-2 covid-19 as pandemic. Coronaviruses are enveloped, non-segmented, positive-sense RNA, transmitted through respiratory droplets and contact.^{1,2} COVID-19 was first reported in Wuhan (China) in December 2019 and later it has spread to other parts of the world.³ During pregnancy, women undergo a lot of physiological changes in their immune, cardiovascular and respiratory system and pregnancy is immunocompromised state.⁴ studies have shown that respiratory viral infections during pregnancy have been associated with low birth weight and preterm birth. Symptomatic pregnant ladies who are infected with covid 19 where associated with need of oxygen support and ICU care.⁵ Studies have shown COVID 19 has been associated with preterm delivery, prematurity, IUGR, low birth weight.⁶

Antenatal patients with covid 19 infection.

Exclusion criteria:
 Gynae patients

Independent variables: Age, parity, maternal comorbidities.

Dependent variables: Obstetric outcomes: Abortion, mode of delivery, preterm delivery, iugr, iud, pph, icu admission, maternal death.

Perinatal outcome: low birth weight (< 2.5 kg), apgar score 1- and 5-minute, neonatal admission, early neonatal death, still birth, covid 19 positive new born.

Peak of 1st wave of COVID-19 was found during the months of July-September 2020, while of 2nd in April-June 2021. Most women presented with COVID-19 RTPCR positive were asymptomatic both in 1st and 2nd wave. The study which has been conducted is to further evaluate the effect of Covid 19 in pregnancy during 2nd wave.

MATERIALS AND METHODS
 The study which has been undertaken was a retrospective observational study. Data was collected from records of covid 19 infected patients, who were admitted at the Department of Obstetrics and gynaecology in Regional institute of medical sciences, Imphal, Manipur. Consent has been obtained from patients on admission for the study.

Study population
 All antenatal pregnant women who were detected covid 19 positive by rapid antigen test or RTPCR got admitted in covid 19 ward of department of obstetrics and gynaecology, Regional institute of medical sciences, IMPHAL.

Inclusion criteria

RESULTS:
 A total of 301 covid 19 positive antenatal women were studied and analysed and their results depicted in figure 1, 2,3 and tables 1,2,3,4,5,6. Majority of pregnant ladies are in between 20 to 25 age group among the study group, with 31.2% and mean gestational period is 37 to 40 weeks. 68.7% women where asymptomatic ,23.3 % of women were having mild symptoms like cold cough, fever and 8% women had severe symptoms like shortness of breath, high grade fever and need of oxygen support. Majority of patients are parity 1-2 (54.5%), primigravida (39.5%) and multipara 6%. The obstetric outcome were 168 (55.8 %) cases delivered, 19 (6.3%) cases had abortions, 7 (2.3 %) cases maternal deaths, 2 (0.7%) cases ectopic, preterm delivery 11 (3.65%) cases, IUGR 3 (0.99%) cases, IUD 10 (3.32%) cases, PPH 1(0.33%) were noted in some cases. 21.9 % cases of covid 19 women had associated comorbidities like hypertension, subclinical hypothyroidism, anemia, heart disease.

In the study group 57.73% had vaginal delivery and 42.27% had caesarean section. Perinatal outcome included low birth weight (4.7%), low Apgar score of 2.3% with neonatal

admission 1.7%. The babies were tested for covid 19 infection by RTPCR on 3rd day of life and most of babies are turned out to be negative.

There were 7 Maternal mortalities among the study group and all of them had severe covid symptoms like shortness of breath, low spo2 and co-morbidities. They have been given ventilator support during hospital stay.

FIGURE 1: BAR DIAGRAM SHOWING AGE DISTRIBUTION AMONG THE COVID 19 POSITIVE PREGNANT WOMEN DURING 2ND WAVE

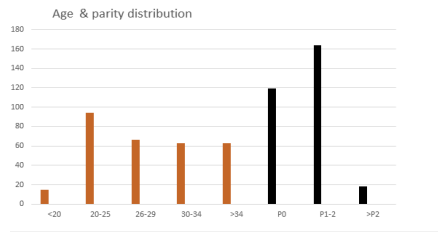


FIGURE 2: PIE DIAGRAM SHOWING GESTATIONAL AGE DISTRIBUTION AMONG THE COVID 19 POSITIVE PREGNANT WOMEN DURING 2ND WAVE

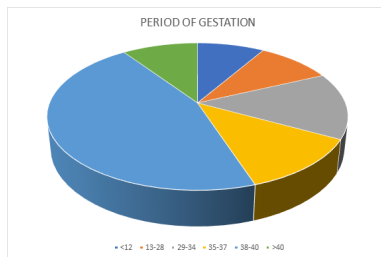


Table 1: symptoms associated with pregnant women with covid 19 infection

SYMPTOMS	
Asymptomatic	207(68.7)
Mild symptomatic	70(23.3)
Severe symptomatic	24(8.0)

Table 2: showing pregnancy outcome in covid 19 infected women

PREGNANCY OUTCOME	N (%)
Delivered	168(55.8)
Abortion	19(6.3)
ectopic	2(0.7)
Maternal death	7(2.3)
Preterm delivery	11(3.65%)
IUGR	3(0.99%)
IUD	10(3.32%)
PPH	1(0.33%)

Table 3: Mode of delivery and perinatal outcome in covid 19 infected pregnant women during 2nd wave

	Pregnant ladies who survived covid19 infection	Maternal deaths with covid 19 infection
Without comorbidities	235	2
With comorbidities	66	5
Heart disease	6	2
Subclinicalhypothyroidism	23	1
HTN	20	1
Anaemia	11	1
Diabetes	6	0
Total	301	7

Table 4: Maternal deaths in covid 19 infected pregnant women

Mode of delivery	N (%)
Vaginal delivery	97 (57.73%)
Caesarean section	71 (42.27%)
Perinatal outcome	N (%)
Low birth weight	14 (4.7%)
1 min APGAR SCORE <7	7 (2.3%)
5 min APGAR SCORE <7	2 (0.7%)
Neonatal admission	5 (1.7%)

DISCUSSION

In our study of 301 covid positive women mean age in 2nd wave 28 yrs and 28 yrs as per Sharma R et al⁷, 28 yrs in Mohr sasson et al in the meta analysis by Jeong Yee et al⁸, 31 yrs according to National French survey⁹. In my study majority women affected are para 1-2 similar to study conducted by Khoiwal et al¹⁰.

Majority are asymptomatic in my study, as per national French survey and Khoiwal et al majority are asymptomatic. According to metaanalysis by Diriba et al¹¹ 46.2% of pregnant women who delivered where > 37 weeks, in my study 45.5% where > 37 weeks. Caesarean section rate is 47.27% which is high during 2nd wave. In the meta-analysis done by Di Toro F et al¹⁷ showed that caesarean section was the preferred mode of delivery in pregnant women with COVID-19 despite the guidelines suggests vaginal delivery. Caesarean section was most commonly indicated due to maternal hypoxemia, how ever further evaluation in this part is required. There is no clear benefit of delivery via cesarean in women with COVID-19.¹²

Maternal mortality were 7 cases which is high compared to first wave, as per Khoiwal et al it was 11, Asalkar M et al¹⁵ was 9, Lumberras-Marquez et al¹⁸ was 7 maternal mortality due to covid 19 pneumonia. overall maternal mortality is high in second wave compared to first wave.

Poisson TM and Pierone¹⁴ identified placental lesions such as extensive foetal vascular malperfusion in a case of foetal demise from a pregnant women infection without any associated disease. Menter et al¹⁵ described features of villitis and malperfusion, suggested that these histopathological changes may be related to an altered coagulative state induced by COVID-19. All these placental changes and thrombotic events decreases perfusion leading to intrauterine death of foetus. In my study intrauterine death were 10. A study conducted by Akhtar H et al¹⁶ intra uterine foetal death was¹⁰.

At present the impact of covid 19 on the first trimester of pregnancy are limited. Study done by Cosmo S et al¹⁹ regarding covid 19 infection during first trimester 4 people had spontaneous abortion, mostly because of hypoxia induced by covid 19 pneumonia²⁰. In my study spontaneous abortions has been seen in 19 cases. A case series study done by Chowdary et al²¹ regarding abortion in covid 19 infected pregnant women was reported in 12 cases.

In my study perinatal outcome results were lbw 4.7%, neonatal admission 5 cases. According to metaanalysis conducted by Yee J et al²² low birth weight babies, preterm babies and low apgar score has been noted in babies born to covid 19 infected mother. Explanation for this poor perinatal outcome is placenta and umbilical vessel thrombosis which is triggered by covid 19 infection leading to intrauterine foetal hypoxia, growth restriction, low birth weight, increased c section rate and foetal death.

CONCLUSION:

Pregnant women more at risk for covid 19 than normal population because of immunocompromised state of pregnancy, not only maternal outcome but also perinatal

outcome was poor during 2nd wave of covid 19 based on my observational study. Pregnant women requiring oxygen support has been increased, maternal mortality too increased. So, proper protective measures to be taken care, advise for covid 19 vaccination during pregnancy to be given, hospital facility for maternal services to be given around the clock.

Strength of my study:

Sample size is adequate, data collection was done from registers which were maintained as per rules of LAQSHYA.

Limitation:

Some patients who were sent for home isolation no data has been obtained from them. Follow up after becoming RTPCR negative has not been done.

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