



## INCIDENCE OF PRETERM BIRTHS AND IUFD IN PREGNANCY WITH COVID-19 IN A TERTIARY CARE CENTRE

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### INTRODUCTION

Preterm birth is a leading cause of mortality and morbidities in the neonatal period, childhood and adulthood. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus that causes coronavirus disease 2019 (COVID-19). COVID-19 was declared a pandemic on 11<sup>th</sup> March 2020. Pregnant women are a high risk category for SARS-CoV-2 infection. The inflammatory mediators associated with SARS-CoV-2 infection have been related with poor perinatal outcomes. SARS-CoV-2 infection is

generally asymptomatic or mild but can lead to severe illness in pregnant women. Majority of preterm birth is spontaneous preterm birth. Other causes of preterm births include multiple gestation, pre-eclampsia, gestational diabetes mellitus, genetic factors [1, 2]. With worldwide lockdown imposed due to the pandemic situation, there were factors like increased stress, inability to access healthcare facilities, lack of financial support which placed a barrier for pregnant women to avail antenatal care. Having co-morbidities

along with COVID-19 infection increased the risk of preterm birth. We hypothesized that COVID-19 infection in pregnancy would increase the incidence of preterm birth and premature rupture of membranes. SARS-CoV2 infection in pregnancy may lead to serious morbidity in a proportion of pregnant women. In comparison to non pregnant women of same age group, pregnant women are at an increased risk for ICU admission but the mortality rates do not differ. Preterm labour due to acute inflammation and vascular insufficiency was reported as an adverse pregnancy outcome of SARS- CoV-2 infection. SARS-CoV-2 has been associated with pre-eclampsia, low birth weight and preterm labour. Earlier evidence showed an increased incidence of medically indicated preterm births secondary to worsening maternal condition post infection with SARS-CoV-2. Literature also shows that pregnant patients not having any associated co-morbidities do not have a high risk for pre-term birth. In this study we wanted to assess the impact of asymptomatic or mild SARS-CoV-2 infection on rates of preterm births and IUFD [3, 4].

**Aim:** To study the incidence of preterm births and IUFD in pregnancies affected with Covid-19 infection

**Objectives:** To determine the correlation between COVID-19 infection and

subsequent susceptibility for pre-term birth whether spontaneous or medically indicated

#### **MATERIALS AND METHOD:**

This study was done at a private hospital during May 2020 to October 2020 where 140 pregnant women with SARS-CoV-2 infection and 140 pregnant women without SARS-CoV-2 infection were included in the study after taking written informed consent and rates of IUFD and preterm deliveries in both the groups were compared. Infection with SARS-CoV-2 was assessed by nasopharyngeal swab or detecting IgM/IgG antibodies in patient's serum [5]. Patients were grouped into asymptomatic, mild, moderate and severe categories based on WHO defined criteria. Patients who had severe respiratory compromise and as a result needed termination of pregnancy on medical background were excluded from the study. Also, data regarding potential source of infection or exposure, risk factors for developing severe SARS-CoV-2 infection and for preterm labour were collected. Spontaneous pre-term birth was defined as onset of pre-term labour or preterm pre labour rupture of membranes resulting in delivery [6].

Medically indicated pre-term birth was defined as termination of pregnancy based on placental insufficiency like in pre-eclampsia [7].

**Inclusion criteria:**

1. Women in spontaneous pre-term labour between 28-37 weeks of gestation
2. Women with medically indicated pre-term birth due to placental insufficiency or pre-eclampsia
3. Women with full term pregnancy and positive RT-PCR for SARS-CoV-2 and

having mild or moderate degree of infection or being asymptomatic

**Exclusion criteria:**

1. Deliveries before 20 weeks of gestation
2. Patients on OPD basis who came for treatment and who did not need admission
3. Severe maternal COVID-19 infection
4. Patients who did not give consent

### RESULTS:

Findings	Group A	Group B
Age[years]	28.3	29.5
BMI	23.9	22.1
Diabetes	13	10
Pre-eclampsia	52	45
Neurological disorders	3	1

Findings	Group A	Group B
Primigravida	64	69
Multigravida	56	51

	In Non COVID patients	In COVID patients
Preterm births	5	14
IUFD	2	5
PPROM	12	35

### DISCUSSION:

We found in our study that asymptomatic COVID-19 infection, or mild to moderate degrees of infection did not result in a rise in the incidence of preterm births or IUFD. Patients with severe COVID-19 or respiratory failure were excluded. We found an increased BMI in the COVID group versus the non- COVID patients subsequently indicating that patients with high BMI had an increased risk of developing SARS-CoV-2 infection. Studies published in The Lancet reported an incidence of 11.8% of preterm births in pregnant women affected with COVID-19.

Studies in Denmark showed a 90% reduction in the incidence of extremely low birth weight infants. The reduction in the incidence of preterm births was unrelated to the imposition of lockdown. There was a decreased incidence of IUFD in pregnant women affected with COVID-19 suggesting that COVID-19 did not adversely affect the pregnancy outcome. In the 2 cases of IUFD in our study, the maternal infection progressed from moderate to severe respiratory involvement with CORADS-5. In case 1, the fetal heart sounds were not heard on Doppler on admission for which an ultrasound was

done which was suggestive of IUFD. In case 2, [GA 37+4weeks] patient developed ARDS subsequent to which there was IUFD which was then delivered vaginally within 24 hours. Women developing ARDS or severe respiratory infection were aggressively treated with anticoagulants, hydroxychloroquine and anti virals [8, 9, 10].

#### CONCLUSION:

We found a decrease in the preterm birth rate and IUFD in pregnant women with COVID-19. One major limitation of the study was its retrospective nature.

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