



## Outcome Of Pregnancy In Covid Positive Pregnant Women

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### Abstract

**Introduction:** COVID-19 pandemic is caused by Severe Acute Respiratory Syndrome Coronavirus (SARS-Cov-2). Pregnant women do not appear more likely to contract the infection than the general population. However, pregnancy itself alters the body's immune system and response to viral infection in general, which can occasionally relate to more severe symptoms, and this will be same for covid 19. The corona virus increases the risk of perinatal anxiety and depression.

**Aim of the study:** To study the incidence of severity of the disease in covid positive pregnant women, Outcome of pregnancy in women with comorbidities, Mode of delivery in covid positive pregnant women.

**Materials and methods:** A retrospective study conducted during May 2020 to December 2020. All covid positive Term (Gestational age >37 weeks) pregnant women admitted with covid positive laboratory report and Covid positive pregnant women admitted with labour pain are included in this study. Covid negative and gestational age less than 28 weeks are excluded from this study.

**Results:** Of all total 380 deliveries conducted, 229 (60%) women delivered by Cesarean section, 37.9% had vaginal delivery and the remaining 2% had instrumental delivery. 55 (14.5%) women had gestational diabetes mellitus showing that maximum percentage of the disease affecting patients with gestational diabetes mellitus. 76 (20%) women had foetal distress during labour, showing that there is an increase in fetal distress in COVID-19 comparing to Non COVID population.

**Conclusion:** The overall feto maternal outcome was good in COVID 19 affected pregnant women. There is no significant change in incidence of preterm deliveries in COVID-19 positive pregnant women.

**Keywords:** COVID-19, Pregnancy, Delivery, Gestational Diabetes

### Introduction

SARS-CoV-2 is the largest group of RNA virus. The global outbreak of novel coronavirus 2019 (SARS-CoV-2) that causes COVID-19 is a newly discovered virus from the coronavirus family in Wuhan city, China, known to be a great threat to the public health systems. [1]COVID 19 pandemic has become a major health threat and there is an increase in cases and mortality.COVID-19 pandemic is caused by Severe Acute Respiratory Syndrome Coronavirus

(SARS-Cov-2). Transmission of the virus is known to occur through close contact with an infected individual or from contaminated surfaces.[2] The virus can also be transmitted from person to person in the pre-symptomatic phase and from asymptomatic individuals. Symptoms of COVID-19 are variable, ranging from mild symptoms to severe illness.[3]Pregnant women do not appear more likely to contract the infection than the general population. However, pregnancy itself alters the body's immune

system and response to viral infection in general, which can occasionally relate to more severe symptoms, and this will be same for covid 19. The corona virus increases the risk of perinatal anxiety and depression, as well as domestic violence. So, it is important to support women and strengthen the families.[4,5]

**Methods:** All pregnant women reported and admitted at Government Thiruvarur Medical college hospital as laboratory proven covid positive report are taken as study population. This is a retrospective study conducted between May 2020 to December 2020 at labour ward, Department of Obstetrics and Gynaecology. All covid positive Term (Gestational age >37 weeks) pregnant women admitted with covid positive laboratory report and Covid positive pregnant women admitted with labour pain are included in this study. Non Covid patients, Gestational age <28 weeks and Abortions are excluded from this study. A retrospective study on a total of 380 women among the pregnant women attending covid OPD with covid positive report in the department of obstetrics and gynaecology (Govt. Thiruvarur Medical College Hospital) from May 2020 to December 2020, Ethical committee clearance was obtained from the institution to undergo this study. All antenatal mothers reported and delivered with laboratory proven covid positive report. This study is based on medical records of those patients admitted and delivered at the institution. All covid

positive women are assessed based on gestational age/Risk factors and their pregnancy and fetal outcome are studied.

**Results:** We have included 380 COVID positive pregnant women for the purpose of our study. Out of them, 322 (84.7%) had mild form of the disease and the remaining 58 (15.3%) had moderate form of disease. Maternal COVID-19 illness severity at initial presentation - majority 84.7% (322) had asymptomatic or mild disease with cough being the predominant symptom (28.6%). Other symptoms are fever (24.4%), sore throat (21%), myalgia (9.7%) and shortness of breath (2.7%). The remaining 58 (15.3%) had moderate form of disease, shortness of breath being the predominant symptom. Of all the positive women, nearly 60% delivered by LSCS, 37.9% delivered by vaginal delivery and the remaining 2% delivered with forceps or vacuum assisted instrumental delivery. Among the 322 mild cases, 118 patients delivered by vaginal delivery while 204 patients delivered by LSCS. Among 58 moderate cases, 32 delivered by vaginal delivery and the remaining 26 patients delivered by LSCS. There is no significant relationship in mode of delivery in both groups. Among 380 COVID deliveries, 60% (299 patients) delivered through LSCS. Considering the indication for LSCS, all are obstetric indication - majority being fetal distress 20%, previous cesarean section 13.4%, CPD in labour 5.5%.

**Table 1: Indication For Lscs Among Mild And Moderate Group**

INDICATION	TOTAL	PERCENTAGE
FETAL DISTRESS	76	20%
FAILED INDUCTION	12	3.2%
SEVERE OLIGOHYDRAMNIOS	9	2.3%
CPD MAJOR	12	3.2%
CPD / FPD IN LABOUR	22	5.5%
PREVIOUS LSCS WITH THREATNED SCAR RUPTURE	8	2.1%

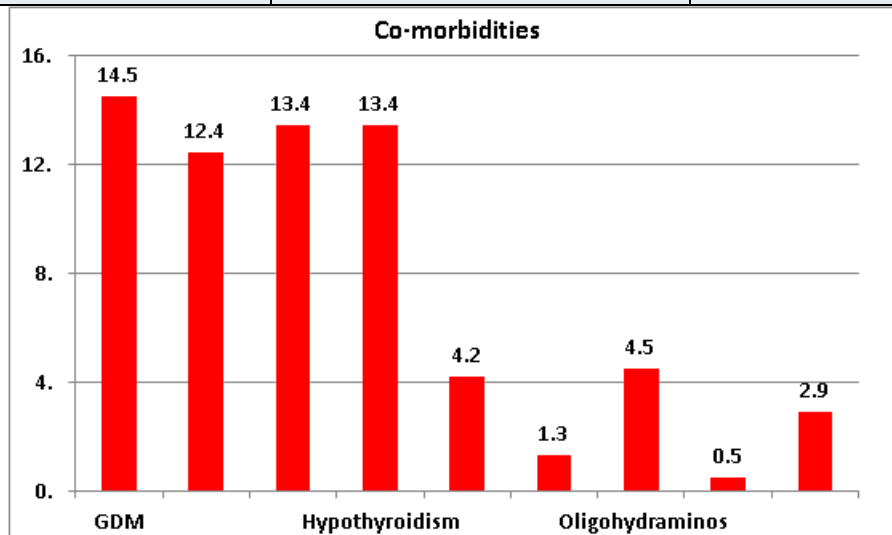
PREVIOUS LSCS WITH PROM/PPROM	8	2.1%
PREVIOUS LSCS CPD IN LABOUR	51	13.4%
PREVIOUS LSCS WITH SEVERE OLIGOHYDRAMNIOS	5	1.3%
SEVERE PREECLAMPSIA WITH UNFAVOURABLE CERVIX	4	1%
IMMINENT ECLAMPSIA	1	0.2%
DCDA TWIN WITH FIRST TWIN NON-VERTEX IN LABOUR	3	0.8%
DEEP TRANSVERSE ARREST	2	0.5%
CORD PRESENTATION	1	0.2%

Of all the recruited women, 55 (14.5%) had gestational diabetes mellitus, 47(12.4%) had gestational hypertension, 51 (3.4%) had anemia and another 13.4% had hypothyroidism. Nearly 16 (4.2%) had heart disease, 2 (0.5%) reported seizures and 11 (2.9%) had pre-eclampsia as a comorbid condition.

**Table 2: Co-Morbidities**

Co-morbidities	Number	Percentage
GDM	55	14.5
GHTN	47	12.4
Anemia	51	13.4
Hypothyroidism	51	13.4
Heart disease	16	4.2
IUGR	5	1.3
Oligohydramnios	17	4.5

Seizure	2	0.5
Pre-eclampsia	11	2.9



Of all study population, the most common comorbid condition 49 (15.2%) associated with COVID-19 is gestational diabetes. Of all the 380 COVID positive women, 195 had one of the co morbid conditions and 185 women presented without any co- morbidity. All the women with comorbidity delivered live baby. There were 2 still births reported among the mothers who did not have a comorbid condition. Relationship with comorbidity and baby’s status was not significant.

**TABLE 3: Pregnancy Outcomes In Patients With And Without Comorbidity**

Comorbidity	Baby-Alive		Still birth	
	n	%	n	%
Present	195	100.0	0	-
Absent	183	98.9	2	1.1
Total	378	99.5	2	0.53
Chi square p value=0.15 (Not significant)				

Out of 195 women with comorbid condition, one baby’s swab was positive for COVID-19 and the remaining 194 mother’s delivered healthy babies. All the babies were normal in women without any comorbidity. All the 380 COVID positive mothers were healthy, and nobody had faced any problems even in the presence of comorbid condition. Of all the recruited women, 76 (20%) had foetal distress during

labour and the remaining 304 (80%) were normal. Among the women with comorbid condition, foetal distress was observed in 45 (23.1%) babies. Women without comorbid condition, foetal distress was seen in 31 (16.9%) of babies. The percentage of babies with distress was comparatively high in women with comorbidity. But these differences were not statistically significant with the p value of

0.13. Comparing these women with disease severity, out of 76 of them 9 had moderate form of disease while remaining 67 had milder form / asymptomatic form of disease. Among the women with comorbid condition, foetal distress was observed in 45 (23.1%) babies. More than 80% of all the recruited women delivered at their term and the left 71 (18.7%) delivered before 36 weeks of their gestational age. Nearly 36 women out of 195 with comorbidity, delivered pre-term babies and the remaining 159 (81%) delivered at their term. In women without comorbid condition, 35 (18.9%) delivered before their term and 150 (81.1%) delivered at their term. The association of presence of comorbid condition in the COVID positive mother and delivering preterm baby was not statistically significant. Out of 71 preterm deliveries, 37 (52%) women had normal vaginal delivery while 34 (47%) had cesarean section. Among 37 (52%) vaginal delivery, 23 (62%) presented with spontaneous labour and 14 (37%) were induced. Among preterm induction, maximum 37.5% deliveries were induced in view of PPRM. Comparison of preterm deliveries with severity of the disease, 49 out of 71 (69%) patients had mild form of disease and remaining 22 (30%) had moderate form of disease. There were 173 women reported with primi gravida, 126 mothers in gravida II and 131 mothers with more than gravida II. In primi, 35 (20%) of mothers delivered preterm babies and the rest delivered at their term. In gravida II, 20 (15.9%) had preterm delivery and 106 (84%) had term delivery. In gravida of more than II 16 (19.8%) mothers had preterm babies and 65 (80.3%) had term babies. We could not get a significant association between the gravida status and delivering term or preterm.

### Discussion

A total of 380 pregnant patients with laboratory-confirmed COVID-19 were included in the study. Majority 322 (84.7%) women had asymptomatic or mild disease which is comparable to Ayed *et al* study, observed 88% of the women had mild form of disease. Of all total 380 deliveries conducted, 229 (60%) women delivered by Cesarean section, 37.9% had vaginal delivery and the remaining 2% had instrumental delivery. [6] In our study all cesarean sections were done in view of obstetric indication and not due to COVID-19 *per se*, similarly study by Venkateshwarlu Vardhelli *et al* showed similar results of 64%. 55 (14.5%) women

had gestational diabetes mellitus showing that maximum percentage of the disease affecting patients with gestational diabetes mellitus. [7] Meta-analysis observed that Diabetes mellitus (14%) is the most common co-morbidity observed in SARS-CoV-2 patients. There were 2 unexplained still births (1.1%) reported among mothers without co-morbidities. [8] Retrospective Cohort study by Huang C *et al* showed mean still birth rate of 0.56%. The overall Fetal outcome was good in our study. [9] We observed 1 (0.3%) baby's swab was positive which contrasts with Rasmussen *et al* study, showed 8%. 76 (20%) women had foetal distress during labour, showing that there is an increase in fetal distress in COVID-19 comparing to non-COVID population, where the rate was only 8.1%, relating to study Elshafeey F *et al*, showed that there is an increase in incidence of Fetal distress of about 17%. [10] About 71 (18.7%) preterm deliveries conducted of which, 23 (62%) had spontaneous labour while 14 (37%) were induced in view of obstetric indication. There is no significant association in terms of severity of disease and Gravida status in relation to preterm deliveries. [11,12]

### Conclusion:

The study on outcome of pregnancy in covid positive pregnant women concludes that the overall fetomaternal outcome was good in COVID 19 affected pregnant women. Nearly 84.7% of patients had mild / asymptomatic disease, with Cough (28.6%) being the most predominant symptom, approximately 15% patients had moderate disease, with shortness of breath (25.8%) being the most common symptom. The most common co-morbid condition associated with SARS-CoV-2 was Gestational Diabetes mellitus accounting to nearly 55 (14.5%) patients. Studying the Mode of delivery in COVID 19 pregnant women - 60% had delivered through cesarean section (all being obstetric indication), 37.9% through vaginal route and 2% delivered through instrumental delivery. Incidence of COVID-19 does not increase cesarean section rate. There is an increase in incidence (20%) of fetal distress among covid-19 pregnant women non COVID population (8%). Fetal distress has no relationship with severity of the disease. There is no significant change in incidence of preterm deliveries

in COVID-19 positive pregnant women (18.7%) comparing to non-covid population (12%).

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