

## Maternal and Perinatal Outcome of Covid19 in term pregnancy at a tertiary health care facility

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### Abstract:

#### Background:

The novel corona virus (COVID 19) is the most challenging public health emergency. Against this pandemic background, it is very important to study the effects of infection on pregnancy and its outcome. Hence, this study was performed to evaluate the effects of COVID 19 infection on perinatal outcome.

#### Materials and methods:

Pregnant women above 37 weeks gestational age, presented to the dept of OBG, GMC, Srikakulam between 1<sup>st</sup> June 2020 to 31<sup>st</sup> December 2020 who were in labour or who were about deliver in 5 days were included in the study. Out of these 1998 women who were delivered during this period, 186 women were tested COVID positive and remaining were included in COVID negative group.

#### Results:

During the period of study 186 women out of 1998 were tested positive for COVID19 i.e. 9.30% and 97 women who were COVID positive delivered in the month of August 2020 and the percentage of positive cases has come down gradually by the end of the study. Majority of them were of 20 – 25 yrs age in both groups and majority were multiparous in both groups. 16.6% women had associated medical and obstetric complications in covid positive group, where as it was 17.38% in negative group, hence the difference is statistically not significant. 59.1% and 58.9% women were delivered by LSCS in COVID positive and negative groups consecutively, the difference of which is statistically insignificant.

**Conclusion:** There is no significant difference in maternal and perinatal outcome of pregnancy in COVID19 positive and COVID negative pregnant women.

**Key words:** COVID 19, pandemic, peri natal, neonatal.

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### I. Introduction

The novel corona virus disease 2019 (COVID-19) caused by the Severe Acute Respiratory Syndrome corona virus 2, has become a major global health threat<sup>1</sup>. Since the first case of pneumonia was described, SARS CoV- 2 infection (corona virus disease 2019 [COVID-19]) rapidly spread worldwide, being declared a pandemic infection on March 11 by the World Health Organization (WHO)<sup>2</sup>. As viral respiratory illnesses, such as influenza, can easily develop during pregnancy, which means pregnant women may be more vulnerable to COVID19 and require prioritized medical care<sup>3</sup>. It is well known that physiologic maternal adaptations to pregnancy predispose pregnant women to a more severe course of pneumonia, with subsequent higher maternal and foetal morbidity and mortality, but there is a lack of data in the literature about the effect of Corona virus infections during pregnancy, thus limiting both counselling and management of these patients<sup>4</sup>.

#### Objective:

1. To understand the effect of COVID disease on outcome of term pregnancy.
2. To assess the effect of novel corona virus infection in neonates born to COVID positive mothers.

### II. Study Design:

It was a retrospective observational study done at a tertiary care hospital attached to medical college assimilating patients from all over the district. On an average, 3500 women deliver every year at our institute. All the pregnant women above 37weeks of gestation who were found to be covid positive as well as covid negative presented to our department of OBG between 1<sup>st</sup> June 2020 to 31<sup>st</sup> December 2020 were included in the study and the perinatal outcome studied.

### III. Materials And Methods:

A total of 1998 women were included in the study, who were above 37 weeks gestation, and delivered at our institute from 1<sup>st</sup> June 2020 to 31<sup>st</sup> December 2020. Women who were in labour or who will deliver within 5 days or who were residing in hotspot zones were offered covid testing as per the guidelines given by ICMR. Nasal swabs were collected using complete PPE (personal protective equipment) and transferred to VRDL laboratory for testing in VTM (viral transport medium). All the hygiene measures were followed like frequent hand wash, usage of masks, maintaining distance between beds, strict use of PPEs by all healthcare workers and frequent cleaning and disinfection of labour ward and operation theatres. All covid positive mothers were shifted to special covid ward and were started on HCQ (hydroxyl Chloroquine) 400mg BID on first day, followed by 200mg BID for 4 days on physician's advise. Those who required oxygen and ventilatory support were managed in separate covid care ward. After delivery rooming in and breast feeding were encouraged for asymptomatic mothers and babies of symptomatic mothers were breastfed with all protective precautions. All neonates were subjected for testing 24 hrs after birth.

All the parameters were analysed using descriptive statistics and chi square test was used to compare categorical variables in COVID positive and negative groups. P value <0.05 was considered significant.

### IV. Results

Out of 186 covid positive mothers delivered at our institute 87 were asymptomatic and 99 were presented with symptoms of mild disease.

**Table 1:**

s.no.	Parameter	No. Of covid positive	No. Of covid negative
1.	Age group		
	<20	9(5%)	227(12.5%)
	20 - 25	83(45%)	779(43%)
	25-30	74(40%)	652(36%)
>30	18(10%)	154(8.5%)	
2.	Parity		
	Primi	73(39.29%)	630(34.76%)
	Multi	111(59.6%)	1157(63.85%)
	Grandmulti	2(1.11%)	25(1.38%)

Table 1. shows demographic profile of patients in both groups. Majority of women belong to 21-25 yrs age and multiparous and above 37 weeks of gestation.

**Table 2:**

Comorbid condition	No. Of covid positive	No. Of covid negative
DM/GDM	3(1.61%)	32(1.76%)
HTN/PIH	11(5.91%)	118(6.51%)
Anaemia	7(3.76%)	71(39.1%)
Hypothyroidism	1(0.53%)	12(0.66%)
TB/ASTHMA/LRTI	3(1.61%)	28(1.54%)
HIV/HBsAg	3(1.61%)	25(1.37%)
Others	3(1.61%)	29(1.60%)
Total	31(16.66%)	315(17.38%)

Table 2. shows 16.6% of covid positive women and 17.38% of covid negative women had co morbidities at the time of presentation. Chi square statistic is 0.0606 and p value 0.805489. The result is not significant at p <0.05.

**Table 3:**

Mode of delivery	Covid positive	<20Covid negative
Vaginal	73(39.2%)	706(38.9%)
Instrumental	3(1.61%)	38(2.09%)
LSCS	110(59.1%)	1068(58.9%)
Total	186	1812

Table 3. shows that out of 186 covid positive mothers, 73(39.2%) delivered vaginally, and 110(59.1%) mothers delivered by LSCS. Out of 1812 covid negative mothers 706(38.9%) delivered vaginally and 1068 (58.9%) delivered by LSCS. Chi square statistic is 0.0028 p value is 0.958015. The result is not statistically significant at p< 0.05.

Graph 1: mode of delivery

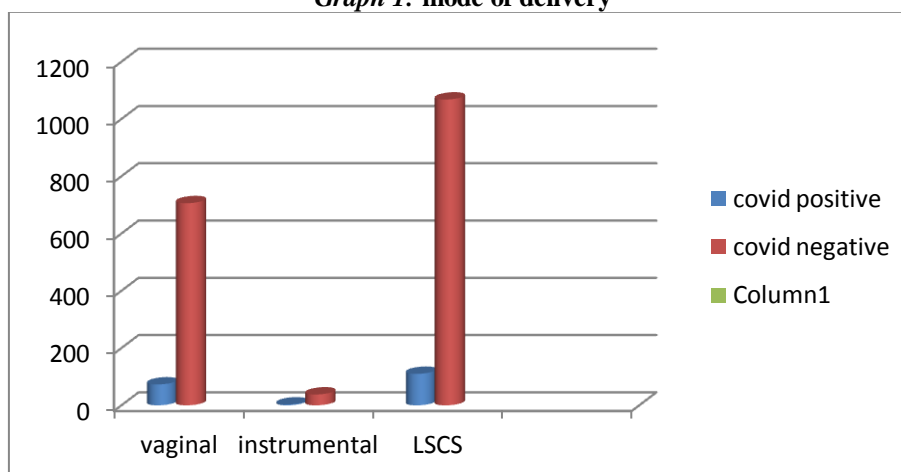


Table 4: maternal complications:

Complication	Covid positive	Covid negative
APH or PPH	3(1.61%)	18(0.99%)
Maternal death	1(0.53%)	3(0.16%)
total	4	21

Table 4. shows out of 186 covid positive mothers 3(1.61%) women developed PPH and 1 maternal death happened. Out of 1812 covid negative mothers 18(0.99%) women developed complication of haemorrhage and 3 maternal deaths happened. The result is not significant at  $p < 0.05$ .

Table 5: neonatal outcome:

APGAR SCORE	Born to Covid positive mothers	Born to Covid negative mothers
8-10	146(80.66%)	1439(82.27%)
6-8	31(17.1%)	282(16.12%)
<6	4( 2.21%)	28(1.61%)
Still births	5(2.68%)	63(3.47%)

Table 5. Chi square statistic is 0.5207. The p value is 0.770765. The result is not significant at  $p < 0.05$ . There is no significant difference in neonatal outcome between both groups.

All babies delivered to COVID positive mothers, were shifted to SNCU for testing, and none were tested positive, 4 babies were admitted in view of respiratory distress and recovered, no neonatal deaths happened.

## V. Discussion

In a study done by Arun Harishchandra Nayak et.al.<sup>5</sup> 14.43% pregnant women were found covid positive and more number of covid positive women(50%) were delivered by LSCS when compared to negative group (47%). In present study, 59.1% of covid positive and 58.9% covid negative mothers delivered by LSCS, the difference of which is statistically insignificant.

In a study done by Huaping Zhu et. al.<sup>6</sup> they have concluded that perinatal CoV infection may have adverse effects on newborns, but present study has shown no significant difference in neonatal outcome.

## VI. Conclusion

In the present study, we have compared the outcomes of COVID-19 positive and negative term pregnant women and their neonates. The results of the study suggested that there is no effect of COVID 19 infection on maternal and perinatal outcome. The majority of the women were presented with mild symptoms without any major complications and there was no evidence of vertical transmission of the COVID-19 infection. However, long-term follow-up of these babies is necessary to see whether there are any delayed effects.

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