

# Pregnancy Outcome in Covid 19- An Experience at a Tertiary Care Centre in Maharashtra

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**Abstract:- Background:** Globally, viral pneumonia is one of the leading causes of death in pregnant women. Pregnant women based on past experiences of SARS and MERS make them a vulnerable population. Therefore, it is necessary to study the maternal and neonatal outcomes of Covid 19 pregnant women.

**Methods:** Record based retrospective study of 83 pregnant women was conducted in MGM hospital, Aurangabad. Records of pregnant women were obtained from May 2020 to May 2021.

**Keywords:-** Covid 19, Pregnancy, IUFD.

## I. INTRODUCTION

The world is currently reeling under the COVID-19 pandemic which began in December 2019. India is currently the second-worst affected country in terms of the number of cases of Covid 19.1 Researchers around the world have reported the varying effects of covid 19 on patients depending upon many factors including demography, past medical history, clinical presentation, etc. Pregnant women are an important population that deserves special consideration based on past experiences which make them vulnerable. Coronavirus infections- severe acute respiratory infection (SARI) and the Middle East respiratory syndrome (MERS) have shown poor outcomes for pregnant women and their fetuses but, it remains largely uncertain as to what is SARS-CoV-2’ effect on mother and child.2 Globally, viral pneumonia is one of the leading causes of death in pregnant women.3 Risk factors in pregnant women are reduced functional residual volumes, the elevation of diaphragm, edema of respiratory tract mucosa, and changes in cell immunity.

Studies have also found a potential for in-utero vertical transmission of SARS-CoV-2 too but it is still controversial. Neonates are at risk of contracting the infection too. Since the pandemic is still evolving and new knowledge regarding Covid 19 infection emerging, it is necessary to study the maternal and neonatal outcomes of Covid 19 pregnant women. With vaccination for Covid 19 rolled out in India for 18 years and above, pregnant women remain highly susceptible as they cannot take the vaccine as per national guidelines. It becomes all the more necessary to study the outcomes, both maternal and neonatal in covid 19 infections.

We aimed to analyze pregnant women with confirmed Covid 19 infection, their management, and outcomes.

## II. METHODOLOGY

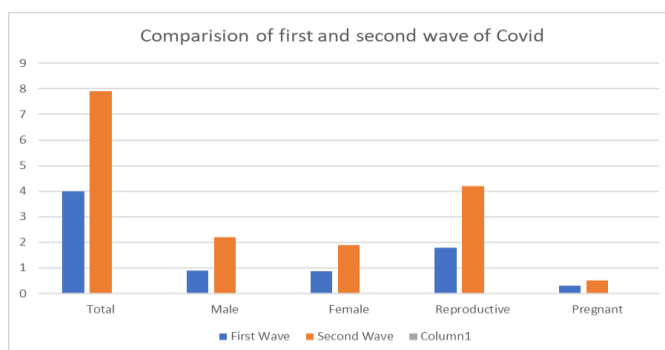
This record-based retrospective study was conducted in MGM hospital, Aurangabad which is a teaching hospital. Records of pregnant women were obtained from the medical records department for a duration of one year from May 2020 to May 2021. During this time frame, we had witnessed two waves of Covid-19 infections. Total COVID positive patients during the study period were 11,994, of which 11086 (92.42%) recovered and 908 (7.57%) died. All antenatal mothers (1560) underwent covid testing as routine protocol, of which 83 ANC patients (5.32%) turned to be Covid-19 positive, 58 patients among them delivered while 23 are still pregnant. Records of the patients were included in the study. Parameters used for assessment were gestational age, symptoms, comorbidities, the requirement of ICU care, severity of the condition, treatment, mode of delivery, maternal and neonatal outcome.

## III. RESULTS

This record-based study of 83 pregnancy outcomes yielded the following results. The incidence of Covid 19 in pregnancies was 5.32%.

	COVID N=83	PERCENT	NON COVID N=1560	PERCENT	RELATIVE RISK
ICU	17	20.4	20	1.2	15.9
DEATH	5	6	3	0.19	13.1

TABLE 1-



Second wave had greater impact than first wave in the general population as well as pregnant females as found in my study.

	COVID N=83	PERCENT	NON-COVID N=1560	PERCENT	Relative Risk
DIABETES MELLITUS	3	3.6	36	2.3	1.7
HYPERTENSION	15	17.6	128	8.2	2.2
ANAEMIA	6	7.2	180	11.5	0.6
RESPIRATORY ILLNESS	55	1.2			
OBESITY	1	66.2			

TABLE 2- RISK FACTORS AFFECTING PREGNANCY IN COVID AND NON COVID PREGNANCY

In my study, it was found that obesity, hypertension and anaemia were the major risk factors affecting covid positive pregnant females similar to non covid pregnant females.

It was found that hypertension and diabetes mellitus were positively associated with COVID in pregnant females while incidence of anaemia is lower in covid than non covid pregnant females.

Many studies have reported similar comorbidities. Nayak et al, reported that anaemia, PIH, and eclampsia were the most common comorbidities. Liu H et al, in a study in Wuhan, reported GDM (9.7%), gestational hypertension (7.31%), and hepatitis B infection (2.4%) as common comorbidities.14 Arora et al, reported comorbidities like aplastic anaemia, iron deficiency anaemia, pre-eclampsia, hypothyroidism, uncontrolled DM, severe fetal growth retardation in all seven pregnant women making them high risk. 9 Gajbhiye et al, reported comorbidities associated with Covid 19 affected pregnant women were hypertensive disorders (10%), diabetes (9%), scarred uterus (3%), and hypothyroidism (3%) placental disorders (2%), and co-infections (3%).11 Hypertensive disorders and diabetes can increase the risk of preterm delivery and maternal deaths.11

Majority (73.5%) of the pregnant women were affected during the third trimester. Similar results can be seen in the study by Nayak et al, 9 Arora et al, 10 Fan et al 15 Liu H et al, 14 and Gajbhiye et al.11

	COVID N=83	PERCENT	NON COVID N=1560	PERCENT	RELATIVE RISK
PRETERM	15	18.07	216	13.8	1.3
ABORTION	2	2.4	256	16.4	0.14

TABLE 3- HOSPITAL STAY

This study in 83 pregnant females showed that icu stay and mortality rate in pregnant covid patients was much higher than non covid pregnant females. The maternal mortality rate was 6.02% in our study. It was observed that more deaths occurred during the second wave as compared to the first wave. This could be due to a higher caseload in the second wave. The maternal mortality rate is higher as compared to other studies. Nayak et al 9 reported a maternal mortality rate of 2.12 % and Gajbhiye et al11 reported a maternal mortality rate of 3%.

Thus, in my study it was found that icu admissions were positively associated more with covid pregnant females as compared to non covid pregnant females.

Also, maternal death is higher in covid affected pregnant females as compared to non covid pregnancies.

	COVID N=83	PERCENT	NON COVID N=1560	PERCENT	RELATIVE RISK
PRETERM	15	18.07	216	13.8	1.3
ABORTION	2	2.4	256	16.4	0.14

TABLE 4- TREATMENT GIVEN-

Above table shows that in my study, majority of pregnant covid positive females received supportive management in form of antibiotics, multivitamins, steroids and oxygen support (69.8%). Ventilatory support required in 8.4%. While methylprednisolone with Remdisivir (antiviral) was started in 28.9%

Gajbhiye et al, reported that 327 out of 441 women received some form of treatment for Covid-19, 63% received antiviral drugs, 55% received antibiotics and 11% received steroids.11

	COVID N=83	PERCENT
MULTIVITAMINS	1	1.2
ANTIBIOTICS + MV	37	44.6
ANTIBIOTICS + MV + STEROIDS	21	25.3
ANTIBIOTICS +MV+ STEROIDS + ANTIVIRAL	24	28.9
ABOVE + O2 SUPPORT	58	69.8
ABOVE + VENTILATOR	7	8.4

TABLE 5- PREGNANCY OUTCOME-

It was observed that rate of preterm deliveries increased in covid pregnant females around 18.07%.

Preterms were positively associated with covid pregnancies as compared to non covid pregnancies while abortion had no association with covid status in my study.

In the study by Nayak et al, where LSCS was done only for obstetric conditions, 47.51% underwent LSCS, another 47.51 had a vaginal delivery and 4.2% had an abortion.9 In a study by Arora et al, 57.14% of pregnant women delivered and half of them underwent LSCS and the other half underwent vaginal delivery. Indications for LSCS were failed induction and previous LSCS with gestational HTN.10 Gajbhiye et al, reported that 387 out of 441 delivered (87.75%), of which four were induced abortions and six were stillbirths. Four sets of twins were also delivered. Majority (80%) of the women underwent LSCS and the rest 20% had vaginal delivery. Indication for LSCS was fetal distress or an empirical decision

made by obstetricians with the patients.11 LSCS has to be conducted in a negative-pressure isolation room with the medical team wearing PPEs.

**MODE OF DELIVERY AFFECTED BY COVID – 2**

WHERE 2 PATIENTS UNDERWENT PRETERM LSCS I/V/O MATERNAL BENEFIT RISKING FETUS AND RESULTED IN RECOVERY OF BOTH PATIENTS.

	COVID N=58	PERCENT	NON COVID N=1560	PERCENT	RELATIVE RISK
IUGR	2	3.4	113	7.2	0.47
IUFD	8	13.7	49	3.14	4.14
NICU	50	86.24	137	8.7	9.8

**TABLE 6- FETAL OUTCOME**

This study shows that NICU admission increased to 86% in covid patients. IuFD was seen in 13.7%.

IUGR in babies of non covid patients was more compared to babies of covid patients hence was negatively associated with covid.

In my study, IUFD has positive association with covid pregnancies along with NICU admissions as all babies were isolated from mothers for testing and care as a routine protocol. Nayak et al, reported that 2.23% of pregnant women had an IUFD. The reason for NICU admission in babies was low birth weight (66.66%), low APGAR score (8.3%), and others like neonatal seizures, meconium aspiration syndrome, and ABO incompatibility. Nayak et al, reported that out of 131 neonates born to covid positive mothers, three tested positive on day one. 9Fan et al, reported in their case report of two mothers, no evidence of SARS-CoV-2 in any products of conception and the newborns.15 Arora et al reported 50% of newborns to covid positive mothers tested positive on day 3.10 A recent systematic review by Kotlyar et al, has concluded that vertical transmission is possible in a minority of cases especially if pregnant women are affected in the third trimester.4

All stable, recovered covid positive patients when enquired had concerns regarding whether baby after birth will be affected by covid. They had concerns as to whether baby will have some neurological impairment or anomaly. Patients had concerns as they were isolated from family, had loneliness affecting mental health. No attendants were available. They enquired whether babies should be breastfed or not, how long will babies be isolated.

They questioned as to whether pregnancy should be continued and had consulted various doctors on similar queries.

**IV. CONCLUSION**

Pregnant women like any other people are susceptible to Covid 19 infection with adverse maternal and neonatal outcomes. Majority were affected during the third trimester. Common symptoms were fever, cough, and breathlessness. Majority of the infections were mild. The proportion of vertical transmission was nil.

Second wave affected the general population a lot more than first wave causing increased co-morbidities, ICU admissions and maternal death. Adversely affected pregnancy resulting in IUFD and increased NICU admission.

And hence affecting psychological well being of the mother.

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