

How to Cite:

Das, S., Wilson, S., Kujur, A., & Sahu, T. K. (2022). Observational study of fetomaternal outcome in COVID -19 positive patients. *International Journal of Health Sciences*, 6(S1), 1802-1813. <https://doi.org/10.53730/ijhs.v6nS1.4937>

Observational Study of Fetomaternal Outcome in COVID -19 Positive Patients

Subrata Das

Assistant Professor, Dept. of Obstetrics and Gynaecology, RSDKSGMC, Ambikapur. C.G. India

Swapnil Wilson

Assistant Professor, Dept. of Obstetrics and Gynaecology, RSDKSGMC, Ambikapur. C.G. India

Avinashi Kujur

Professor and HOD in Obstetrics and Gynaecology, RSDKSGMC, Ambikapur.CG. India

T. K. Sahu

Associate Professor Dept of Obstetrics and Gynaecology, GMC Raigarh, C.G. India

Abstract---Background: The impact of COVID 19 on the pregnant women has been of great concern for the gynecology, community medicine as well as the obstetrics domain of medical sciences. The different levels of the risks are posing to the health of the expecting individual, and this is chiefly due to the COVID 19 complications that is vital to note which can have a certain influence on the fetal health as well. Aim: Observational study of Fetomaternal outcome in covid - 19 positive patients. Materials and Methods: There are certain symptoms of the covid 19 that shows and there are others that can be masked in certain individuals of the chosen subpopulation who are the main participants of the study, in this retrospective observational study, a total 67 participants have been included in order to find and analyze the overall set of the foetomaternal outcomes that is vital to understand. Results: The effect of the COVID 19 has been found to be different on different person but the fetal outcome is mostly safe and in rare cases, there exists chances of mortality. But the intensive care units need to be prepared and kept ready for the severe complications, as for these cases.

Keywords---COVID-19, feto maternal, neonatal outcome, observational study, prenatal outcomes.

Introduction

During the COVID 19 created globally threatening pandemic, the different types of the problems as for the public health came up and created the major risks that is vital to understand as well. The various different types of the complex risks associated with the pregnancy and the fetal care that has been reported during the period of the COVID 19 and is important to note and understand as well. There have been the major cases reported and this is pertaining to that of anemia, hypertension and hypertensive problems affecting the mothers, chronic kidney diseases, heart diseases and cardiopulmonary problems that have left a serious mark on the outcomes that are of the foetomaternal nature (1). There can be the respiratory distress as well as the problems with delivery that can be presented with the cases of the pregnancy and the effect of COVID 19 on such conditions can be very deteriorating and problematic at the same time as well. There can be more complications if the pulmonary distress during COVID 19 severity affects the blood oxygenation levels and this will affect the health and outcomes of the fetus as well that is important to understand as in this research. This ran into more deteriorating fetal and the maternal outcomes with the cases of above-mentioned issues and risks that is vital to understand as well (2).

As for more issues concerning what is known as the COVID 19 specific triggers of the foetomaternal outcomes – the different cases of what is called as the gestational diabetes came to the scenario, thus causing the risks and the factors to be concerned further (3). Thus, it can be noted and understood that a range of different spectrum of issues can be presented or at least there is a chance of presentation of these when the pregnant woman with growing fetus is affected with the COVID 19 condition (4). Even in the many research papers submitted in the last few years, there has been many cases of the death and morbidity reported which has caused the cases of serious risks and problems with perinatal deaths to go high and higher, during the global pandemic that is vital to understand as well. It is to be understood the increased viral load in the body of the mother or rather the pregnant lady can cause the body to work lower than the functional levels and this can be a serious risk and problems during the pregnancy that is important to note.

In the period of pregnancy, the maternal body needs to take care of the growing fetus and with the growing fetus, a lot of physiological as well as the anatomical changes are done in the body of the pregnant woman that is important to understand. With the viral load of the COVID 19 increasing, the seriousness of the cases increases much further and this lends a greater number of risks to the maternal and the fetal health status as well (5). Moreover, there are social issues of the lockdowns and the lack of general practitioner opening up their practices in the red zones and yellow zones, the complications of these types of risks are bound to increase that is vital to understand. This has caused the diagnosis of the severity levels problematic and also cause the symptoms to become serious issues in the situation of the covid 19 pandemic that is important to note and understand as well.

There is a need for the development of system's approach and system's thinking in the healthcare leadership framework that is vital to understand and only with

the right systematic organized flow of procedures and processes, the foetomaternal outcomes can be bettered in the post COVID world that is vital to note (6). The right history taking as well as the clinical testing and diagnostic investigations is needed to rule out the different types of the anemia or conditions that can affect the pregnancy condition. The prenatal outcome, clinical outcomes as well as the different types of the outcomes that can be possible and probable in the neonatal condition as well needs to be addressed with the different aspects of the clinical and health management which is actually critical and cardinally needed (7).

In this study, the same areas have been covered and the research problem is focused on understanding the serious and moderate levels of the foetomaternal outcomes with special context of the COVID 19 pandemic and viral load. The importance of managing the conditions with prescribed medication management is critical and this forms the basis of this research study and work as well. The effect of the medication and other management for the improvement of the outcomes of the foetomaternal outcomes are needed and that is why, the systematic approach is required which has been analyzed in this research study. According to Grandone et al. (2022), (8) there are certain type of the factors such as the Von Willebrand that can be decisive and indicative of the criticality of the covid 19 condition of the pregnant woman that is vital. There can be the major issues of the anemia and also that of the critical risks of the hypertension as well as the thrombocytopenia issues which are to be clinically managed with the best practices that is particularly important and also very much needed, in obstetric care and to better the foetomaternal outcomes, without many disturbances.

According to Chavan et al. (2021), (9) the general population and the pregnant women share almost same level of risks with the contraction and sufferings from the condition of the covid 19 condition that is vital to note down. The high-risk groups are those who were very much inclined to the development of critical symptoms and are to be taken to the intensive care unit, which is why, the physicians and obstetricians needs to give additional care to them. It has also been mentioned in the research that monitoring the vitals and the other signs of the patients is critical and cardinal to safeguard their lives and the obstetrics care should be including the covid 19 management too, properly. If the viral disease symptoms takes over, then more planned treatments should be done for the COVID 19 condition and vice versa, if it is not so, then the focus should be given on maternal and fetal health conditions and the management should be progressive towards risk management and properly chosen mode of the child delivery.

According to Al-Maiahy, Al-Kuraishy& Al-Gareeb (2021), (10) the perinatal as well as the chances of the vertical transmission of the COVID 19 from the pregnant woman to the fetus or the baby can be of huge concern and importance as well that is important to note and understand as well. According to the researcher here, there is a good amount of need to go for what is known as the genetic testing to understand the genetic expression and the problems with the different types of the complex risks as for the foetomaternal condition in case of covid 19 that is vital. The pharmacological as well as the non-medication care will be highly imperative for bettering foetomaternal outcomes in case of the covid 19

affected pregnancy conditions. It is also very much important that the birth weight is also noted down as the critical risk parameter so as to correlate the effect of the COVID 19 on the prenatal and post-natal condition of the mother and the baby that is vital to understand.

The research objectives are as follows:

- To understand the foetomaternal outcomes during the COVID 19 period and times.
- To understand the measures that needs to be taken for the development of the right practices in terms of right management.
- To analyses the risks involved and the ways to address them.

Materials and Method

A retrospective observational study was done in the tertiary care hospital Government medical college RAIGARH, Chhattisgarh, from April 2020 to august 2021, to collect the clinical data for various parameters such as the clinical outcome, prenatal and postnatal outcomes along with contact features, clinical comorbidities, clinical features, and the treatments of the COVID 19 positive pregnant women. All the patients were admitted at tertiary hospital government medical college, Ethical clearance number No.IEC/GMC/2021. Multifaceted data will be collected as mentioned above and this will help in the development of the safer and comprehensive understanding about the research question taken into consideration here, that is the foetomaternal outcomes.

Research philosophy- a positivist research philosophy is applied in this medical research and the numerical data and observational analysis has been given the importance in this research work that is vital to understand. A quantitative study and analysis will be done on the basis of this study, and this will be helping the development of the more precise and comprehensive findings about COVID 19 pregnant women that is important to note. The nature and the pursuit of the research is objective in nature and that is why, the different types of the data from the various types of assessments and management information will be used in this study in order to reach the findings that is critical to understand and note as well (11). Clarity, comprehension, objectivity, statistical probability as well as the specificity are the main areas of the research, and its quantitative nature is on based on the reserve philosophy of what is known as positivism. The cardinal areas of the research criticality and rigor is based on the various elements of the real-world data pertaining to COVID 19 and pregnancy will be provided. And as this is medical research, the clinical data has been collected from multiple aspects of the care and management pertaining to the foetomaternal outcomes in the COVID 19 situation that is vital to note and comprehend.

The research done is retrospective and looks at the already found data from the observational settings that is important to note and understand as well. That is why, the research approach here is of the descriptive type that is critical to note and understand as well. The analysis of the data parameters and the clinical risks has been done in a more detailed manner in order understand the nuances and

the intensity of the results with respect to the mortality and morbidity as for foetomaternal outcomes which is very much vital and cardinal as well.

Sampling – A total of 67 patients has been taken into consideration and all the patients were in pregnancy and with the affection of the COVID 19. Convenient sampling has been applied here in order include the 67 patients in this retrospective observational study, from the larger pool (of other patients with other conditions or near similar but exactly similar condition being focused on this research work). Only the cases which has confirmation on the COVID 19 virus infliction – has been included that is important to note.

Inclusion criteria

- The patients are pregnant and are expecting without co morbidities.
- The patients are diagnosed as COVID Positive.
- The patients are above of age of 18 years.

Exclusion criteria

- The patient is not pregnant.
- The patient is not diagnosed with the COVID 19.
- The patients are not above the age of 18 years.

Data analysis

The statistical analysis will be done using the percentage method tool and the results will be found out accordingly with the use of triangulation method.

Results

Table 1
Clinical outcomes

Discharged after recovery and negative swab's test	67/67	100%
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Table 2
Prenatal outcomes

Missed abortion	0	
Ectopic -	0	
IUD -	1	1.4%

Table 3
Mode of delivery – 67

Caesarian	35/67	52.23%
Normal delivery	32/67	47.76%
C/S live	35/67	52.23%

IUD (with DIA)	1/67	1.4%
Preterm vaginal delivery	2/67	2.98%
Term	30/67	44.77%

Table 4
Neonatal outcome

Live	67/67	100%
Live and infected with COVID 19	19/67	28%
Live non infected	48/67	71.64%
Neonatal deaths	0/67	

Table 5
Analysis with graphs

Age Group	Respondents	No of Patients	Percentage
20 years	67	5	7.46%
21-30 years	67	50	75%
>30 years	67	12	17.9%

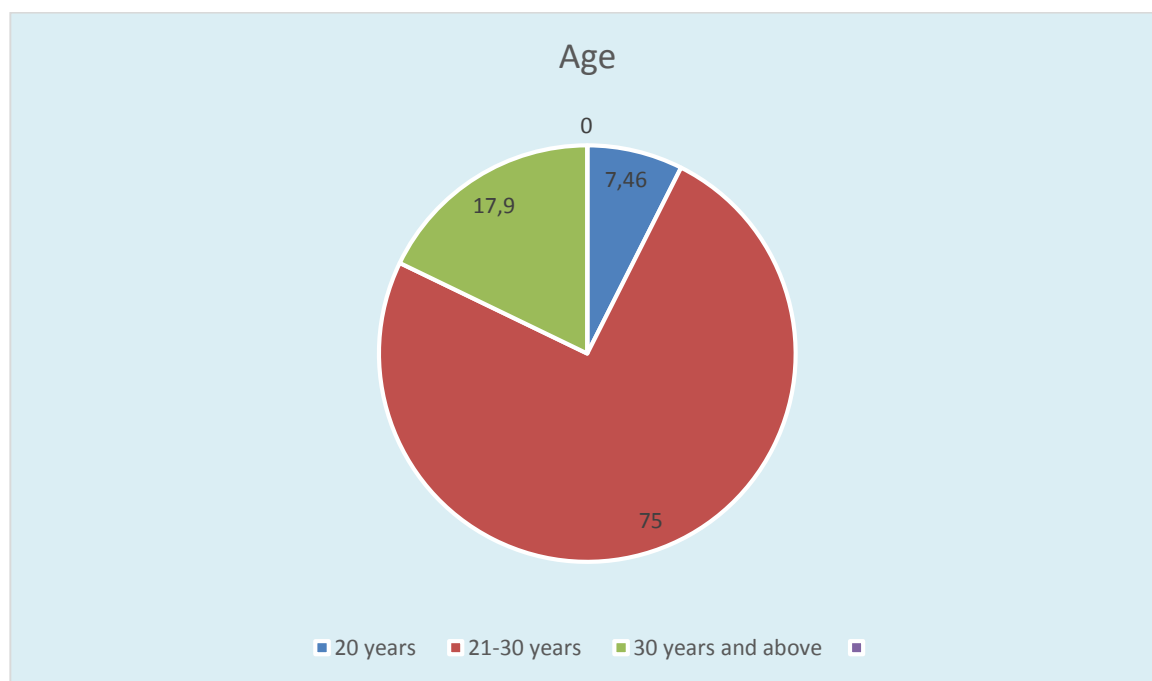


Figure 1. Analysis with graphs

The chart highlights that the highest percentage of pregnant patient with covid 19 symptoms are viewed within the mothers of 21-30 years of age group and it is almost 75%. On the other hand, almost 7.46 percentage of pregnant mothers of age group 20 years included the symptoms of covid 19 and rest 22% is viewed among 30years and above aged mothers.

Table 6
Discharge rate after recovery

Recovery	Respondents	No of Patients	Percentage
<i>Recovered</i>	67	67	100

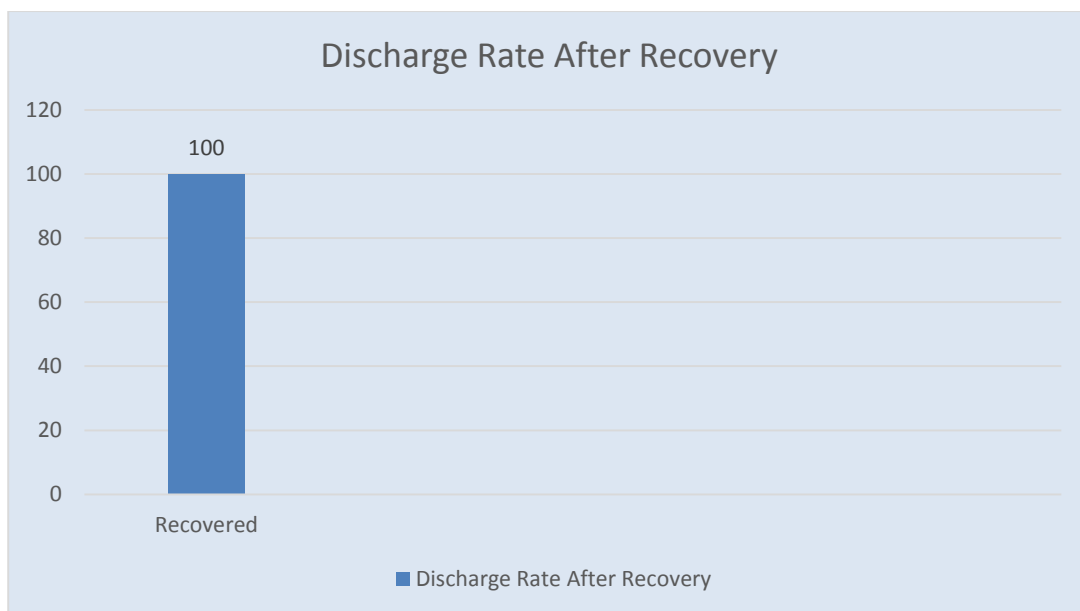


Figure 2. Discharge rate after recovery

Table 7
Neonatal outcome

Respondents	Response	Percentage
<i>Live</i>	66/67	98%
<i>Still born</i>	00/67	00
<i>IUD</i>	01/67	1.5%

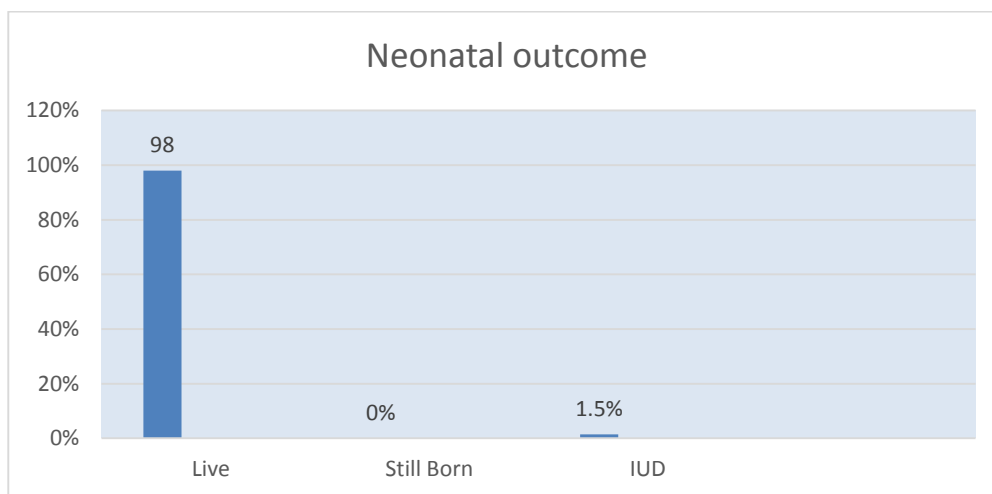


Figure 3. Neonatal outcome

The above chart clearly specifies that the living percentage is quite high in case of Neonatal outcome as compared to IUD. This is because, almost 67 patients are in living condition and a very small percentage is in IUD. And the percentage of babies, who are still to take birth in this stage is almost nil as mentioned in graph.

Table 8
Contact with infected person

Yes	40/67	59.7%
No	27/67	40.29%

Table 9
COVID 19 related clinical features

Cough	40/67	59.70%
Fever	27/67	40.29%
Sore throat	7/67	10.44%
Myalgia	10/67	14.92%
Dyspnea	3/67	4.4%
No symptoms	28/67	41.79%

Table 10
Pregnancy

Gestational diabetes mellito	0/67	0.00%
Gestational hypertension	1/67	1.4%

Table 11
Treatment

Antibiotic Rx	67/67	100%
Multivitamins containing zinc	67/67	100%
Vitamin C tablet	67/67	100%
Antiviral therapy	3/67	4.4%
Use of corticosteroids	0/67	0.00%
hydroxychloroquine	0/67	0.00%
ICU admission	1/67	1.4%

Table 12
Clinical features all group (years)

<= 20	5	7.4%
21-30	50	74%
>30	12	17.9%

Table 13
Obstetric status on admission

Antenatal	67/67	100%
Postnatal	0/67	0.00%

Table 14
Gravidity

Primi	30	44.77%
Multi	37	55.22%

Table 15
Gestational age of the patients

< 13 weeks	0/67	0.00%
14-28 weeks	0/67	0.00%
28 - 40 weeks	65/67	97.01%
> 40 weeks	2/67	2.98%

Discussion

Thus, it can be said that the different types of the complex work in terms of patient management, in the department of obstetrics, needs to go through the systematic procedure and also through a set of steps as in clinical care, neonatal care as well as the prenatal care in order safeguard the health of the patient against the different types of odds that is vital to note. Moreover, it is critical to note that the mortality rate despite of the COVID 19 contraction is quite low and this is one of safety areas, that should be and can be surely taken into the consideration. Moreover, it is critical that the different types of allied health management as well as the medical management plus nursing management can be surely used in the management of the foetomaternal outcomes which is

implied but the focus has been given for the medical profession primarily. All 67 patients recovered which shows that the recovery rate with the right therapies and interventions is quite high for the pregnant women that is critical to note and understand as well. Moreover, another important finding is that if the person has contracted COVID 19 virus and is covid positive, it is most likely that the symptoms will be showing and only in less than 50 % of the cases, the pregnant patient with COVID 19 will be asymptomatic that is vital, an observation and finding too. This also means that the different types of symptoms and the associated conditions of gestational hypertension (1.4%) and diabetes also needs to be controlled well and then, the treatment with the certain kind of antiviral drugs and other methods should be decided upon.

It is to be noted that most patients (about 97.01%) are in the age group of twenty eight to forty years and for them, the major outcomes is most relevant. The clinical features of the COVID 19 found in this research shows that the coughing (59.70%) and fever (40.29%) are the most important signs and symptoms of the condition and there can be dyspnea (4.4%) in the most severe of cases as well and it is strongly related to mortality and high degrees of morbidity in the condition of pregnancy with COVID 19 that is vital to understand. Other than this, there will be many patients who will be complaining of the symptoms of myalgia (14.92%) and sore throat (10.44%) as well, during covid affected pregnancy and this is another important finding.

About 52.23% of the patient had caesarean delivery while the 47.76% had normal delivery. The percentage of the term delivery is 44.77% and there was not much COVID risk complication with respect to these, that can be seen and noted. As for the treatments, most of the patients were under antibiotic treatments (100%) along with multivitamin (100%) and vitamin c (100%) intake and the symptoms were mild to moderate. For the severely affected patients, the antiviral therapy has to be done. In this study we also found that the vertical transmission of Covid 19 infection was 28% though no neonatal mortality was observed.

Conclusion

Thus, it can be concluded saying that a number of conditions starting from anemia to the hypertension and diabetes as well as the thrombocytopenia can be playing a serious role in the development of the risk factors in the covid affected pregnancy condition. This can also have a great amount of impact on the fetal and maternal outcomes that are to be managed well by the clinicians and especially by the physicians who are the line workers in these moderate to high-risk cases and conditions (12). It is vital to comprehend that the rate of morbidity is high, but the rate of mortality is low, in fact quite low as for the pregnant lady or its baby, when she is affected with the COVID 19 condition. The most pronounced features, that is the clinical features in the pregnant condition along with covid 19 has been reported to be cough and then fever that are the initial indicators of the disease and this can then progress to severe dyspnea and other problems, if not managed properly by the clinicians. Moreover, the asymptomatic condition and the mode of delivery are important parameters that are to be taken into serious condition as well for determining the fetal and maternal health outcomes in the COVID-19 condition (13).

Limitation of the study

It has to be said that one limitation of the study is that the allied health care roles and the assessments has not been included in the research work and it being solely medical, shows only one side of the picture while the real-world situations are often managed not by physicians alone but also by a number of different allied health workers.

Acknowledgments

I would like to thank the dean of the medical college, the head of the department, the colleagues as well as the staffs and the medical superintendent for the immense support and valuable inputs in my project that eventually made it possible. I have received great support from them, in times of need which was great, and I am really grateful for it. The information technology department was also very assistive when it came to data management and security in relation to my work.

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