



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

FETO-MATERNAL OUTCOME IN COVID-19 POSITIVE PREGNANT WOMEN ADMITTED AT A TERTIARY CARE HOSPITAL- A RETROSPECTIVE STUDY

KEY WORDS:

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INTRODUCTION

With over a million individuals infected, the global pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2) has exposed vulnerable populations to an unprecedented global health crisis.¹

The disease which was never seen in humans before, emerged in Wuhan, China and was first reported on December 31, 2019 and has since spread across continents. On January 30, 2020, the World Health Organization declared the outbreak as a public health emergency of international concern.

Coronavirus is a single stranded RNA, non-segmented, enveloped viruses, which causes illness ranging in severity from the common cold to severe and fatal illness. In the past two decades, two other coronaviruses that cause severe respiratory illness in humans have emerged: severe acute coronavirus (SARS-CoV) and Middle eastern respiratory syndrome coronavirus (MERS-CoV). The two viruses are similar to the novel coronavirus as they are β coronaviruses with similar genomic structure. But in a short period of time, SARS-CoV-2 has caused more cases of illness than those reported for MERS and SARS- CoV combined.²

The natural reservoir for SARS-CoV is believed to be bats; however, some evidence supported civet cats and raccoon dogs as possible intermediate sources of these illnesses. SARS is transmitted by close person to person contact, by contact of the mucus membranes of the respiratory tract with respiratory droplets formed during coughing or sneezing and these droplets are inhaled by close contacts generally within 6 feet.³

The physiological changes during pregnancy make the mother more vulnerable to severe form of the disease. Pregnant women are particularly susceptible to respiratory pathogens and severe pneumonia because they are at an immunosuppressive state and physiological adaptive changes like diaphragm elevation, increased oxygen consumption or edema of respiratory tract mucosa further exacerbate the disease.⁴ Alterations in the cell mediated immunity contribute to the increased susceptibility to be infected by intracellular organisms such as viruses.⁵

With regard to the foetus and the new born, the immaturity of the innate and adaptive immune systems make them highly susceptible to infections.⁶ Dysregulation of factors such as cytokines and the complement cascade can have deleterious consequences for brain development and function.⁷

From the limited information gathered about the novel coronavirus and the drastically increasing burden of the disease, it is vital that scientific information concerning the disease is shared. It is critical that pregnant women not be denied potentially lifesaving interventions.

In the midst of an outbreak that could have significant effects on our public health and medical infrastructure, the unique needs of pregnant women should be included in preparedness and response plans.

It is important to be vigilant about the spread of the disease and provide methods of outbreak control and management measures once the disease occurs.

AIMS AND OBJECTIVES

To study the feto-maternal outcome in COVID-19 positive pregnant women admitted at a tertiary care hospital.

MATERIALS AND METHODS

This is a hospital based retrospective chart review analysis of medical records of all COVID-19 positive pregnant women admitted during the first and second wave at Mathuradas Hospital and Umaid Hospital associated to Dr S N Medical College, Jodhpur, Rajasthan. The bedhead tickets of COVID-19 positive pregnant women as confirmed by RT-PCR assay of nasopharyngeal swab specimen, who have delivered at our institute have been included in the study.

Complete history, obstetric history, clinical symptoms, signs, specific obstetric conditions, complications and outcome data were collected from the medical records.

OBSERVATIONS AND RESULTS

1. Distribution according to age

AGE	NUMBER	%
18-20	21	8.2
20-25	115	45.1
25-30	76	29.8
30-35	40	15.6
35-40	3	1.17
TOTAL	255	

2. Distribution According to Booking Status

BOOKING STATUS	NUMBER	%
Booked	78	30.5
Unbooked	177	69.5
Total	255	

3. Indication For Admission

INDICATION FOR ADMISSION	NUMBER	%
Obstetric	208	81.5
Covid Related	47	18.5
Total	255	

4. Distribution According To Symptoms

SYMPTOM	NUMBER	%
Fever	57	22.3
Cough	32	12.5
Dyspnoea	21	8.2
No Symptoms	145	57
Total	255	

5. Distribution According to Gestational Age

GESTATIONAL AGE (weeks)	NUMBER	%
<30	5	1.9%
31-34	27	10.58%
34-36	51	20%
37-40	172	67.4%
Total	255	

6. Distribution According to Maternal Oxygen Saturation at Admission

SPO2	NUMBER	%
<80%	6	2.3%
80-90%	40	15.8%
90-100%	209	81.9%
Total	255	

7. Distribution According to Mode of Delivery

MODE OF DELIVERY	NUMBER	%
Vaginal Delivery	112	43.9
LSCS	143	56.1
Total	255	

8. Distribution According to Foetal Birthweight

BIRTHWEIGHT	NUMBER	%
500g- 1 kg	3	1.2
1-1.5kg	14	5.4
1.5-2kg	40	15.6
2-2.5kg	64	25.1
2.5-3kg	68	26.6
3-3.5kg	54	21.1
3.5-4kg	10	3.9
4-5kg	2	0.7
Total	255	

9. Distribution According to APGAR Score At 5 Minutes

APGAR SCORE AT 5MIN	NUMBER	TOTAL %
<7	17	4.3
>/=7	217	87.4
NA (SB/IUD)	21	
TOTAL	255	

10. Distribution According to COVID Status of Newborn

COVID IN CHILD	NUMBER	%
Positive	17	7.2%
Negative	217	92.7%
NA (SB/IUD)	21	
Total	255	

11. Distribution According to Maternal Mode of Ventilation

MODE OF VENTILATION	NUMBER	%
Mechanical Ventilation	6	2.3
NIV	38	14.9
High Flow Mask	81	31.7
Venti-Mask	20	7.8
No Ventilation Support needed	110	43.1
Total	255	

12. Any associated Co-morbidities.

CONDITION	NUMBER	%
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GDM	3	1.17%
Hypertension	7	2.7%
Total	10	

13. Maternal Outcome

PARAMETERS	NUMBER	%
ICU Admission	44	17.25
Maternal Mortality	14	5.4%
Discharged	241	94.5%

14. Distribution According to Perinatal Outcome

PERINATAL OUTCOME	NUMBER	%
NICU Admission	29	11.3
Baby Well	205	80.3
IUD	17	6.6
SB	4	1.8
TOTAL	255	

CONCLUSION

COVID is an ongoing pandemic which has caused the death of more than 5 million people globally. The disease has affected people in their daily lives and has changed our way of life. Children, Pregnant women and the elderly form the most vulnerable group.

Since the pandemic has overwhelmed the resources in the past two waves, careful utilization of resources is the need of the hour. In a period where such a pandemic was not foreseen, hospitals worldwide have worked tirelessly to save lives and restore health of millions infected.

From an obstetric point of care, the main aim should be to minimize maternal morbidity and mortality, and give a favourable neonatal outcome. This can be achieved by primarily educating the masses regarding preventive measures and vaccination. Once diagnosed, the patient should be carefully evaluated and treatment measures if needed should be started at the earliest under the expertise of physicians, anesthetists and pulmonologists. The baby should be examined by a paediatrician and counselling to the mother regarding neonatal care should be done.

Despite the falling trend in cases, continued research regarding COVID is necessary as new variants emerge in every country from time to time. Newer vaccines and treatment measures will help in reducing the overall burden of the disease. But the old saying, Prevention is the best treatment, should be followed religiously.

REFERENCES

1. Goodnight WH, Soper DE. Pneumonia in Pregnancy. Crit Care Med. 2005;33: S390-S397.
2. Rasmussen, S., Smulian, J., Lednický, J., Wen, T. and Jamieson, D., 2020. Coronavirus Disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. American Journal of Obstetrics and Gynecology, 222(5), pp.415-426.
3. Hui DSC, Zumla A. Severe acute respiratory syndrome: Historical, epidemiologic, and clinical features. Infect Dis Clin North Am 2019;33: 869-89.
4. O'Day MP. Cardio-respiratory physiological adaptation of pregnancy. Semin Perinatol. 1997;21:268-275.
5. Nelson-Piercy C. Respiratory disease. In: Handbook of Obstetric Medicine. Boca Raton: CRC Press;2015:371 p.