

Outcome of Covid -19 in twenty pregnant women- A case Series Studies

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Abstract

Objective: to quantify the maternal and fetal outcomes and to assess vertical transmission of COVID-19 in pregnant women.

Study Design: A case series.

Place and Duration of Study: Isra University Hospital, Hyderabad, from Dec 2020 to May 2021. **Methodology:** In this case series clinical record of 20 consecutive pregnant women was reviewed who presented with COVID-19 in the Gynae & Obstetrics department of Isra University Hospital, Hyderabad ,Pakistan. The demographic and clinical details were noted. The maternal outcomes in terms of mode of delivery, signs like shortness of breath, oxygen saturation, ventilator support etc. were noted. For fetal outcomes vertical transmission, APGAR score, birth weight, and admission to Neonatal Intensive Care Unit were analyzed.

Result : No fetal morbidity and mortality were noted, However in terms of maternal morbidity and mortality 1 patient died due to severe Covid -19 infection with respiratory failure .there were five patients who were symptomatic for Covid -19 infection (cough and fever=3) and(bodyache and flu like symptoms in =2). All 20 neonates were observed in the nursery/Neonatal Intensive Care Unit for 24 hours after birth. None of them developed any complication. No vertical transmission of COVID-19 was found on the basis of PCR conducted 1 week apart after delivery.

Conclusion: Only one patient were died due to severe Covid-19 infection .However no vertical transmission is seen in twenty pregnant women's which could be due to that majority of patients were asymptomatic.

Key Words: to quantify the maternal and fetal outcomes and to assess vertical transmission of COVID-19 in pregnant women.

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INTRODUCTION:

Covid -19 has affected millions of population worldwide with no difference in correlation with age and gender .In 2019 Covid-19 Infection were emergent from China. The fatality rate of Covid-19 varies from region to region 5.6 % in US, 14 % in UK and 2 % in Pakistan. Around 7 million people were affected by the virus and has caused of about 0.4 million deaths in European and US country with fatality rate of about 5.7 % . Many studies have been done to assess and to understand its response to different conditions. Investigator also assessed the vertical transmission of virus during pregnancy .only few studies have targeted the fatality rate in special populations including Pregnant women in which majority of studies concluded no vertical transmission along with no maternal and fetal outcomes. Initially ,it was not clearly known that whether the pregnant women were are at risk of developing symptoms from infection of Covid-19 in compared of non pregnant women ,a few studies have been published that concluded that there is no

difference in relation with clinical characteristics and risk of developing in pregnant and non pregnant women with Covid-19 infection To better understanding on How Covid-19 infections affects the pregnant women and for worldwide interest .we decided to present a Case Series on 20 pregnant women to know the maternal and fetal outcomes along with vertical transmission.

METHODOLOGY

In this case series twenty pregnant women with Covid-19 infection were included. This study is done in Gynae and Obstetrics Department of Isra university Hospital, Hydrabd, Pakistan from December 2020 to May 2021 . Ethics approval for the study was granted by Institutional Review Board (Ref .B /45/EC/203). Clinical record of 20 consecutive pregnant women with COVID-19 was reviewed. The clinical symptoms, laboratory data and pregnancy outcome were analyzed.

Women were investigated by PCR for Covid-19 and by X-Ray chest to confirm the diagnosis of Covid-19 .the diagnosis of Covid-19 were met in all 20 consecutive patients according the guideline was published by the National Health Commission of China .Demographic data of pregnant women

including their age, sign and symptoms, comorbidities their laboratory test and maternal and fetal outcome were noted. The primary outcome was to assess the rate of vertical transmission from mother to fetus. All the fetus after the delivery were followed in PICU, where two Nasal Swab sample for RT-PCR were also done as per same guideline of diagnosis of Covid-19 in adults also for the observation of signs of Pneumonia in neonates (oxygen saturation < 93

and R/R > 30 breaths /min). The severity of disease was assessed by the guidelines of World Health Organization for Covid 19. Analysis was conducted by using the SPSS version 21. Categorical variables were quantified as frequency and percentage, while Continuous variables were summarized as means and standard deviations.

Demographic and Clinical profile Table – 1

Case no	Age	Gestational Age	Gravidity	Parity	Routine Antenatal	Labour Pain	Antepartum Hemorrhage	Bleeding	Prelabor Rupture of Membrane	Preterm Labour	Decreased Fetal Movements	Diagnostics	Comorbid	Medicine
1	26	37	4	0	2	2	2	2	2	1	2	PCR, Chest x-ray	N0	
2	30	38	5	2	1	1	2	2	2	2	2	PCR, Chest x-ray	DM	
3	23	40	3	0	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
4	35	38	2	2	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
5	43	38	1	2	2	2	2	2	2	2	2	PCR, Chest x-ray	HTN	
6	31	38	4	0	1	1	2	2	2	2	2	PCR, Chest x-ray	N0	
7	28	40	3	2	2	1	2	2	2	2	2	PCR, Chest x-ray	N0	
8	26	37	2	2	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
9	31	40	1	1	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
10	40	38	1	0	1	2	2	2	2	2	2	PCR, Chest x-ray	N0	
11	24	36	5	2	1	1	2	2	2	2	2	PCR, Chest x-ray	N0	
12	24	36	3	4	2	1	2	2	2	2	2	PCR, Chest x-ray	N0	
13	27	40	3	3	2	1	2	2	2	2	2	PCR, Chest x-ray	N0	
14	25	37	2	1	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
15	30	39	1	4	1	2	2	2	2	2	2	PCR, Chest x-ray	N0	
16	31	40	1	2	2	1	2	2	2	2	2	PCR, Chest x-ray	N0	
17	32	36	2	1	1	2	2	2	1	2	2	PCR, Chest x-ray	N0	
18	24	36	3	2	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
19	40	37	2	2	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	
20	26	40	1	2	2	2	2	2	2	2	2	PCR, Chest x-ray	N0	

RESULTS

The average age of pregnant women were 32 ± 4.3 years ranging from minimum 22 years to maximum 43 years. The mean gestational age was 38.0 ± 1.4 weeks. There were 4 cases of SGA whereas the rest of 16 were AGA. Majority of the cases were belongs from the same region of Hyderabad. There were 8 cases with primigravida status and 12 were multigravida table-I. The presentation of pregnant women was varying, 13 were presented with labour pains and 7 were presented for antenatal check-up. Two pregnant women have history of Hypertension and Diabetes There were five patients who were

symptomatic for Covid -19 infection (cough and fever=3) and (bodyache and flu like symptoms in =2). The mode of delivery was cesarean in 11 cases, 6 cases had SVD whereas 3 cases had observation table-II. There were 12 baby boys and 8 baby girls born in this case series. The mean birth weight was 3.3 ± 0.4 kg ranging from minimum of 2.9kg to maximum of 4.3kg. The APGAR score at one minute was 7.6 ranging from 6 to 9 whereas at the APGAR score at 5 minutes was 9.5 ranging from 7 to 10. No vertical transmission was noted in 20 pregnant women however one women died due to severe respiratory failure.

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Case No	Mode of Delivery	Postpartum hemorrhage	Pret erm delivery	Respi ratory distress	Ventilator support	sympt oms	cough	fever	body ache	diarrhea	Nasal congestion	Chest pain	SO B	sput um	Severe respiratory distress syndrome
1.	Spontaneous vaginal delivery	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.	Lower segment c-section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3.	Lower segment c-section	2	2	2	2	2	1	1	2	2	2	2	2	2	2
4.	Lower segment c-section	2	2	2	2	1	1	1	2	2	2	2	2	2	2
5.	Lower segment c-section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6.	Lower segment c-section	2	2	1	1	1	1	1	1	2	2	2	2	2	1
7.	Lower segment c-section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8.	Severe vaginal delivery	2	2	2	2	1	2	2	1	2	2	2	2	2	2
9.	Severe vaginal delivery	2	2	2	2	1	1	2	2	2	2	2	2	2	2
10.	Severe vaginal delivery	2	2	2	2	1	2	1	2	2	2	2	2	2	2
11.	Lower segment c-section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12.	Lower segment c-section	2	2	2	2	1	1	2	2	2	2	2	2	2	2
13.	Severe vaginal delivery SVD	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14.	Lower segment C section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15.	Severe vaginal delivery	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16.	Lower segment C section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17.	Lower segment C section	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18.	observation	2	2	2	2	1	2	1	2	2	2	2	2	2	2
19.	observation	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20.	observation	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Fetal Outcome Table -2									
Case No	Fetal Outcome	APGAR-1	APGAR-5	Birth weight	Neonatal ICU	Covid-19	Preterm delivery	Jaundice	PCR
1.	Boy	8	10	3.2	1	2	2	2	2
2.	Girl	8	10	3	1	2	2	2	2
3.	Boy	8	9	3.2	1	2	2	2	2
4.	Boy	8	9	3	1	2	2	2	2
5.	Girl	8	9	3.4	1	2	2	2	2
6.	Boy	8	9	3	1	2	2	2	2
7.	Boy	8	10	2.9	1	2	2	2	2
8.	Girl	7	10	4.2	1	2	2	2	2
9.	Boy	7	10	3.5	1	2	2	2	2
10.	Boy	6	7	3.8	1	2	2	2	2
11.	Girl	8	10	3.6	1	2	2	2	2
12.	Boy	9	10	3.6	1	2	2	2	2
13.	Boy	9	10	3.4	1	2	2	2	2
14.	Boy	8	10	3.8	1	2	2	2	2
15.	Girl	7	10	3.8	1	2	2	2	2
16.	Girl	7	9	3	1	2	2	2	2
17.	Boy	7	9	3.1	1	2	2	2	2
18.	Boy	7	10	3.6	1	2	2	2	2
19.	Boy	7	10	3.8	1	2	2	2	2
20.	Boy	9	10	3.7	1	2	2	2	2

DISCUSSION

This current case series shows no vertical transmission from mother to fetus that also similar with the results of other studies from the globe. The effects of the Covid-19 in relation to maternal and fetal outcome is still in initial phases and are unknown, only few case series studies found different responses that worries the obstetricians around the world to know the exact presentation of Covid-19 in pregnant women. The primary outcome of this current study were to assess the rate of vertical transmission that's not seen in any pregnant women, this result is similar with many others studies as, Rasmussen et al study shows that fetal outcome may vary like preterm delivery and fetal distress but there is no evidence of in utero transmission of Covid-19 in pregnant women's. Study done by Schwartz et al, also shows no evidence of vertical transmission. In our current study six cases have SVD and five observation with no evidence of vertical transmission

which also proved with the wuhan study who investigated 19 Covid -19 newborns who were born with infected mother with Covid-19 infection. They also confirmed the Covid-19 infection in second day of newborn. Unlike previous reports on studies based on H1N1 influenza and SARS-CoV where maternal and fetal outcomes were compromised by severe effects of virus SARS-CoV-2 had less side effects as well as vertical transmission rates. In our current case series there are two pregnant women who have PROM with no maternal and fetal complications. A study done by Lieu et al, in which they observed the maternal and fetal complications in case series of emergency C-sections due to either fetal distress or due to premature rupture of membrane they also shows the still birth in one case although the condition of Covid-19 were mild to moderate in all cases. In this current study only one pregnant women were died due to respiratory failure although remaining were not develops any significant adverse events which also proved by many others studies in

relation with Covid-19 infection and maternal and fetal outcomes .In this current study no adverse events occurs in fetus also ,no premature birth were seen ,all the newborn born with average birth weight with no fetal distress , although a study conducted by Zhang et al,shows the reported evidence of birth asphyxia and fetal distress .further studies are needed to understand the effects of Covid-19 in pregnant women’s.

CONCLUSION

Our current case series was not found vertical transmission from mother to fetus in affected pregnant women with Covid-19 infection with no serious maternal and fetal outcomes .although further clinical trials are needs to be conducted to know the exact effects of Covid-19 in pregnant women’s

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