Original Research Article

Challenges Faced In Covid Labor Room In First Wave In A Tertiary Care Centre-An Observational Study

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Abstract :

Introduction: Coronavirus disease (COVID-19) is an infectious disease caused by Novel Corona Virus named SARS-CoV-2.TheWHO declared SARS-CoV-2 causing COVID-19, a pandemic on 11th March 2020.As pregnant women are particularly vulnerable to infectious diseases that can cause both maternal and foetal adverse outcomes, compared to their non-pregnant counterpart, it is important to know the impact of disease on mother as well as foetus.

Aims & Objectives:

To determine clinical manifestation risk factors and maternal and perinatal outcome in pregnant women with COVID-19 positive status.

Material & Methods:

A prospective observational study to render the challenges faced by our department during preparation for COVID LR facility and maternal and foetal outcome in COVID-19 positive patients. Also, to study changes made in infrastructure and working of department for obstetrical admissions since the beginning of COVID LR from 20th March 2020.Results: Total COVID-19 positive obstetrical admissions till 31/10/2020 were 175, out of which 104 (59.43%) patients delivered. LSCS was done in 54 (51.92%) Vaginal deliveries in 50(48.08%). 61(34.86%) patients were managed in antenatal period and 10(5.71%) were admitted as post-partum cases.

Conclusion:

It has been a successful journey with the efforts of whole isolation team in management of all COVID-19 pregnant patient by our dedicated healthcare workers.All the obstetrics complications were managed as per guidelines with use of proper personal protective equipment.

Keywords:

Coronovirus, Clinical Manifestation, Perinatal Outcome

Introduction:

Coronavirus disease (COVID-19) is an infectious disease caused by NOVEL CORONA VIRUS – SARS- COV-2. The World Health Organisation (WHO) declared COVID-19 a 'public health emergency of international concern' on 30th January 2020, and declared the situation as pandemic on 11th March 2020.[1]

As we know pregnant women are particularly vulnerable to infectious diseases that can cause both maternal and foetal adverse outcomes, compared to their non-pregnant counterpart, it is important to know the impact of disease on mother as well as on foetus.

Some viral infections are worse in pregnant women due to physiological changes and relative immunosuppression, but as of now no such evidence is seen with corona virus infection. It gets aggravated in pregnancy only in presence of co-morbidities like hypertension, diabetes, asthma, HIV, chronic liver, lung or kidney disease or patient on immunosuppressive medications.[2]

Majority of patients with COVID 19 present with mild to moderate symptoms while very few presents with severe acute respiratory illness. [3,4]

Pregnant women are considered high risk group because of concerns about the effect of COVID-19 on them during and after pregnancy, and on neonates [5]

Quantification of the rates of COVID-19 risk factors, clinical manifestation and outcomes is key to planning clinical maternal care and management in an evolving pandemic scenario.

Aims and Objectives

To determine clinical manifestation risk factors and maternal and perinatal outcome in pregnant women with COVID-19 positive status

Material &Methods

We did a prospective observational study to render the challenges faced by our department during preparation for COVID LR and maternal and foetal outcome in COVID-19 positive patients. When at start of COVID pandemic, our institute was identified for set up of COVID-19 facility, we had many hurdles because we had to run dual facility of COVID Labour Room (COVID LR) as well as non- COVID Labour Room (non-COVID LR).

We started COVID LR on 20/03/2020. Changes in infrastructure were made to make separate entry and exit for clean and isolation areas. As per the requirement, we had to make our clean LR as COVID LR and we shifted our clean LR to tubectomy OT area with lot of hard work. The staff had to be posted at two facilities separately so new staff was recruited by hospital administration or shifted from other areas as Gynae OT and our wards. Dedicated Nursing staff was posted to make provisions for all the PPE, equipment and medicines in isolation area. We had to undertake many counselling sessions of our paramedics and ground staff on frequent intervals to allay their apprehensions of working in isolation area. Our residents had to work in two labour rooms so a lot of changes were made in our working schedule. Our dedicated team geared for the difficult task ahead.

We established 3 functional Labour rooms – Clean LR (non-COVID LR), Suspect LR andCOVID LR. Suspect LR and COVID LR were made functional in isolation area on separate floors.

Triage was made at the entrance of the building so that all the patients coming in emergency could be segregated and admitted in clean labour room or isolation labour room accordingly. Separate entry points were made for respective areas - Clean LR and Isolation LR from the triage area itself. A separate entry was provided for the patients being referred from periphery with COVID-19 positive status who were informed before referring to our nodal officer so that already our team was there to receive the patient in PPE.

Fig. No 1: Our triage area at the entrance

All the patients were received at triage area at the entrance. (Fig.No1) Here resident on duty triaged the obstetrical admissions according to predesigned proforma which included signs and symptoms related to COVID-19. Patient having any of the clinical signs or symptoms were sent to suspect LR, where COVID testing was done and those tested positives were shifted to COVID LR.

Weekly meetings were conducted to foresee any problems and changes were made as per changing guidelines of governing bodies. [5-10]Our institute started testing by RTPCR and later CBNAAT which was already available was utilised. TrueNat testing was established in our own Microbiology department at later stage and with that reports became available in lesser time. Patients coming from periphery were also tested by Rapid Antigen Test (RAT). In due course of time residents from our department were trained to take samples and thus we

started sampling by ourselves.

We also made provision for proper counselling of our patient in isolation LR on daily basis for their mental health and physician opinion taken from time to time as appropriate.

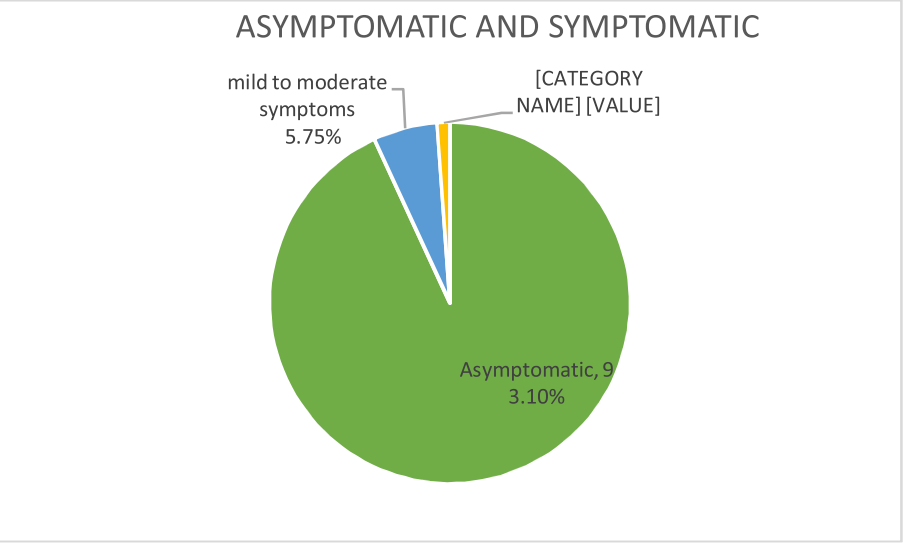
Observations

We studied the COVID-19 positive obstetrical admissions from inception of our COVID LR till 31st October 2020. Patients were observed during the course of stay at our hospital for clinical manifestation of COVID-19 &associated risk factors were studied.

Table No 1: Showing referral from different areas

S. No	Place	No. (%age)
1.	Patiala	124 (70.86%)
2.	Ludhiana	10(5.71%)
3.	Sangrur	12 (6.86%)
4.	Mohali	1 (0.57%)
5.	Fatehgarh sahib	11 (6.28%)
6.	Mansa	3 (1.71%)
7.	Barnala	3 (1.71%)
8.	Ropar	4 (2.28%)
9.	Mandi Gobindgarh	1 (0.57%)
10.	Kaithal (Haryana)	2 (1.14%)
11	Gurgaon (Haryana)	1 (0.57%)
12.	Ambala (Haryana)	1 (0.57%)
13.	Bathinda	1 (0.57%)
14.	Hamirpur (H.P)	1 (0.57%)
	Total	175

Fig. No 2: Showing Asymptomatic & Symptomatic patients



Most of our patients were asymptomatic 163 (93.14%) except 10(5.71%) patient who had mild to moderate symptoms and 2(1.14%) patient had severe acute respiratory distress as shown in (Fig. No2)

The two patients with SARI could not survive, one patient came at 26 weeks 3 days POG with IUD with severe acute respiratory distress with COVIDpositive status, and other patient was twinpregnancywith hepatic encephalopathy with an hydramnios with multiorgan dysfunction syndrome.Both were in ICU on ventilatory support.

We had total of 175 admissions during the study period. Out of these many of the patient were shifted to COVID LR from Clean LR after testing as from first week of July we had started testing all the obstetric admissions for COVID-19. (Table No 2)

Table No 2 : Showing total admissions in COVID LR

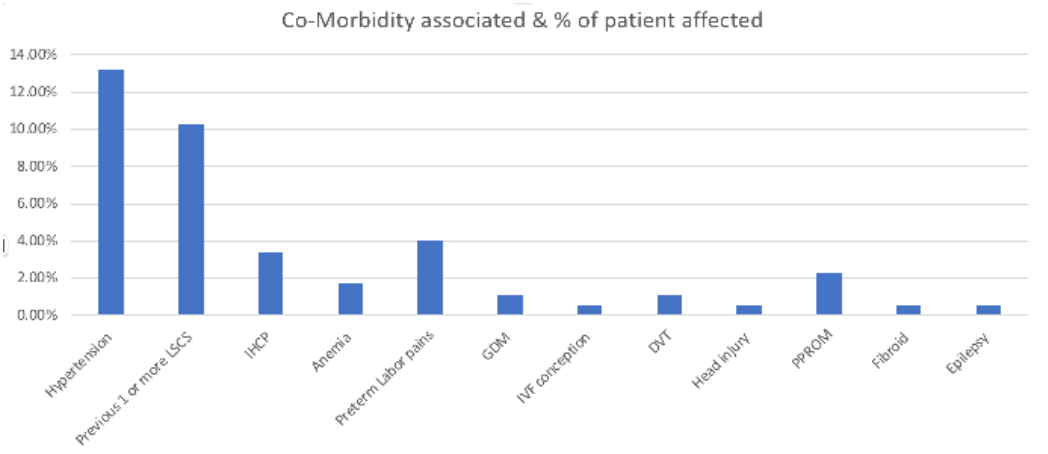
Area of admission	Number
Came as COVID positive status	121
Shifted from suspect area	6
Shifted from clean LR (non-COVID LR)	48
TOTAL	175

Out of 175 obstetrical admission there were 165 (94.28%) were antenatal cases and 10 (5.71%) were post-partum admissions. 104 (59.43%) of the antenatal mothers delivered and 61(34.86%) patients were managed in antenatal period. (Table No 2)

Table No. 3: Showing total obstetrical admissions

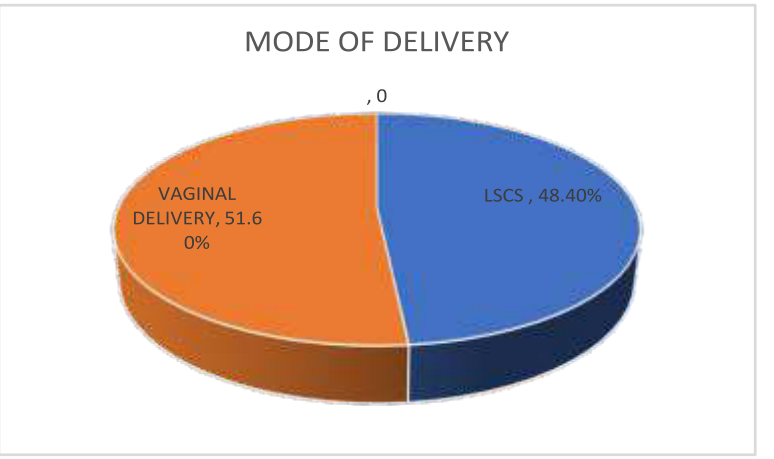
	No of cases	%age
Delivered	104	59.43%
First trimester	10	5.71%
Second trimester	19	10.86%
Third trimester	32	18.28%
Postpartum	10	5.71%
Total	175	100%

We had 175 admissions, out of which 104 delivered. 10 patients were in first trimester, among them 5 underwent medical abortion (3-missed abortion and 2-MTP), 1 patient underwent D&C due to incomplete abortion, one had complete abortion and one had to undergo laparotomy due to ectopic pregnancy. In second trimester also one patient of incomplete abortion was managed by medical methods and one had complete abortion. There were 2 maternal deaths as mentioned earlier and rest all the patient were discharged in antenatal period after appropriate treatment. Among the postpartum cases,8 were managed conservatively including a case of DVT and 2 patients underwent exploration due to PPH. (Table No 3)



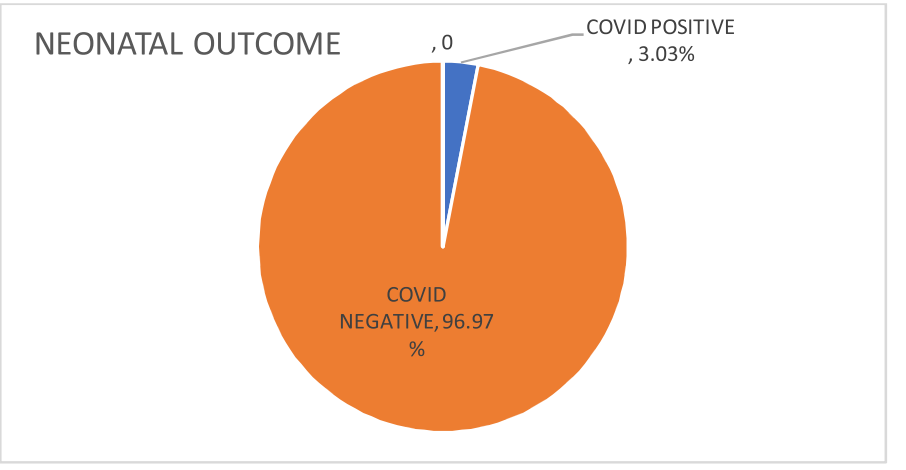
Many of our patient had comorbid conditions as shown above (Fig. No 3). Most common co-morbid condition seen in patient were hypertension (13.2%), previous c-section (10.3%) preterm births (4.03%), PPROM (2.29%) & IHCP (3.44%)

Fig. No 4: Showing mode of delivery



Total COVID positive admissions were 175, out of which 104 delivered, among them 54 (51.92%) underwent LSCS and 50 (48.08%) vaginal delivery (Fig.No 4)

Fig. No 5: Showing neonatal outcome



Total 104 babies delivered, out of which 3 were COVID positive & there were 3 neonatal deaths but they were not attributed to COVID-19. Mostly deaths were due to Prematurity. (Fig. No 5)

Fig. No 3: Showing comorbid conditions in mother

S. No	Obstetrical complication	Procedure	No (%age)
1.	Ectopic pregnancy	Laparotomy	1 (0.57%)
2.	Placenta previa with Atonic PPH	Caesarean hysterectomy	1 (0.57%)
3.	PPH	Exploration	5 (2.86%)
4·	Episiotomy gaped	Resuturing	1 (0.57%)
5.	Missed abortions	Medical methods	3 (1.71%)
6.	Early pregnancy	MTP (by medical method)	2 (1.14%)
6.	Incomplete abortion	D&C	1 (0.57%)

We also dealt other obstetrical emergencies apart from deliveries as shown in Table No 4. Laparotomy was done in 1 patient due to ectopic pregnancy; Caesarean hysterectomy was done in one patient who underwent LSCS due to placenta previa and had atonic intrapartum hemorrhage. There were 5 cases of exploration due PPH (3 had cervical tears and in 2 retained placental bits were removed). In one case of resuturing of episiotomy was done. We also dealt 3 cases of missed abortion and 2 early pregnancy cases by medical methods. One case of incomplete abortion underwent D & C. Apart from this one case of incomplete abortion was managed by medical methods and 2 cases had complete abortion with no further intervention needed and ultrasound confirmed the diagnosis.

Discussion

A study carried in Maharashtra by ICMR-NIRRH in collaboration with MEDD and municipal corporation of greater Mumbai conducted in BYL Nair hospital showed presence of one symptom to every ninth patient, out of total cases 11.5% patients were symptomatic, likewise in our study symptoms were present in 6.8% of patients and rest were asymptomatic. [11]

They also had increase in cases of PPH, but no such findings were observed in our study. [11]

In contrast with study conducted by N. Breslin et all, 7 confirmed cases of COVID 19 were presented, out of which 5 patients had symptoms and 2 were asymptomatic on admission, and became symptomatic post-delivery while in our study only 6.8% patients were symptomatic. [12]A study conducted by Qingcheng et.al in China to compare vertical transmission of COVID 19 in pregnancy observed no evidence of vertical transmission. In our study 3 of the neonates tested positive within 24 hours of delivery by RTPCR method and were discharged in healthy condition. [13]

Conclusion

It was observed that during pregnancy patient experience immunological transformation that allow immune system to tolerate and support the growing foetus while still maintaining immune defence, most of our patients were asymptomatic and they were able to tolerate infection well

It has been a successful journey with the efforts of whole isolation team in management of all COVID-19 pregnant patient. All the obstetrics complications were managed as per guidelines with use of proper personal protective equipment.

Suitable management and support to pregnant COVID-19 patients with adequate protection for health care workers should be our aim

Multiple-disciplinary team approach should be adopted, and clinical recommendations should be derived from current trends & proper planning and execution can help in abatement of spread of COVID-19

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