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MATERNAL AND PERINATAL OUTCOME OF PREGNANT WOMEN WITH COVID-19 INFECTION : AN OBSERVATIONAL STUDY.

Obstetrics & Gynaecology

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ABSTRACT

Background: The novel coronavirus disease (COVID-19) is the most challenging health crisis that we are facing today. Against the backdrop of this pandemic, it becomes imperative to study the efects of this infection on pregnancy and its outcome. Hence, the present study was undertaken to evaluate the efects of COVID-19 infection on the maternal morbidity and mortality, the course of labour as well as the neonatal outcome.Aim and **Objective:**To evaluate the maternal morbidity and mortality in pregnant women diagnosed with covid-19 infection.To evaluate the perinatal outcome in new born of pregnant women diagnosed with covid-19 infection. To assess the association of co-morbidities and maternal outcome in pregnant women with covid-19 infection. **Methodology:** A total of 119 pregnant women who are diagnosed with COVID-19 infection were included in the study, from 15th July 2000 to 30th August 2020 at department of OBG, Alluri Sitarama Raju Academy of Medical Sciences. **Results:** 74% of the study population are presented with gestational age between 37-39.6 weeks. Out of 119 study population, 46 members are having co-morbidities. 87.8% of the study population are delivered through LSCS . 32.7% of the study population are presented with maternal complications. 67.2% of the study population are asymptomatic to COVID-19. 94% of newborn have an APGAR of 7-10. 5 out of 119 newborn developed neonatal complications . **Conclusion:** There is no signifcantefect of COVID infection on maternal and foetal outcome in pregnancy and there is no evidence of vertical transmission of the COVID-19 infection but long-term follow-up of these babies is recommended.

KEYWORDS

COVID-19 · Pandemic · Pregnancy · Mortality · Morbidity · APGAR · Neonate

INTRODUCTION :

Corona virus disease 2019 is an emerging respiratory disease that is caused by a novel corona virus and was first detected in December 2019 in Wuhan, China. In response to this serious situation, the World Health Organization (WHO) declared it a public health emergency of international concern on January 30,2020 and called for collaborative efforts of all countries to prevent the rapid spread of COVID-19.The disease is highly infectious, symptoms include fever, dry cough, fatigue, myalgia, and dyspnea and some patients tend to develop ARDS and MODS. In the backdrop of this pandemic, it thus became of vital importance to study the effects of covid-19 infection on pregnancy outcome.

MATERIALS & METHODS:

The study was conducted at Department of OBG, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, Andhra Pradesh, India. It was an Observational study .The study protocol was approved by Instituitional ethics committee and the study period was from 15th July 2020 to 30th August, 2020. It included 119 pregnant women who are diagnosed with COVID-19 infection. Details about the patients like age, parity, gestational age, history of contact, any comorbid conditions, mode of delivery/outcome, baby details and APGAR score were noted. . All the patients were advised to wear a mask and all the health care workers were using complete PPE during their shifts in the labour ward. To reduce the risk of transmission, we carried out several measures including creating awareness about hand hygiene and usage of masks in all patients, maintaining a distance between beds and a strict and correct use of personal protective equipment (PPE) among the health care workers. Separate rooms for donning and doffing were assigned in the labour ward complex. Cleaning and disinfection of the labour room and labour OT was done on regular and frequent intervals. All the maternal and neonatal parameters were analysed using descriptive statistics i.e. percentages were calculated.

RESULTS:

Table 1: Distribution of Sociodemographic Variables.

AGE GROUP		
	FREQUENCY	PERCENTAGE
< 20 years	12	10.08
21-25 years	78	65.5
26-30 years	23	19.3
30-35 years	04	3.3
>35 years	02	1.6
GESTATIONAL AGE		
> 40 weeks	16	13.44
37.1-39.6 weeks	88	73.94
34.1-36.6 weeks	10	8.40
<34 weeks	05	4.20
PARITY		
Primi gravida	52	43.69
Multi gravida	60	50.42
Grand multi para	07	5.88

Table 2: Distribution of associated co-morbidities.

PARAMETER	FREQUENCY	PERCENTAGE
DM/GDM	01	0.84
HTN/PREECLAMPSIA/ECLAMPSIA	04	3.36
TB/ASTHMA/RTI	01	0.84
HYPOTHYROIDISM	12	10.08
ANEMIA	27	22.6
HIV/HBSAG/HCV	01	0.84
TOTAL	46	38.65

Table 3: Mode of Delivery.

MODE OF DELIVERY	FREQUENCY	PERCENTAGE
VAGINAL	13	11.32
INSTRUMENTAL	01	0.86
LSCS	101	87.82
TOTAL	115	100

Table 4: MATERNAL COMPLICATIONS.

MATERNAL COMPLICATIONS	FREQUENCY	PERCENTAGE
Abortion	01	0.84
Ectopic pregnancy	02	1.75

Wound complications-discharge from suture site	08	6.72
Meconium stained liquor	24	20.1
APH and PPH	03	2.52
Maternal deaths	01	0.84
Total	39	32.77

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Table 5: COVID-19 symptoms at diagnosis.

PARAMETER	FREQUENCY	PERCENTAGE
Fever	04	3.36
Myalgia	11	9.20
Cough	08	6.72
Sorethroat	10	8.40
Diarrhea	05	4.20
Shortness of breath	01	0.84
Asymptomatic	80	67.20
Total	119	100

Table 6: NEONATAL OUTCOME.

APGAR SCORE		
	FREQUENCY	PERCENTAGE
7-10	109	94
4-6	04	3.4
0-3	03	2.59
TOTAL	116	100
WEIGHT AT BIRTH IN KGS		
>3.5 kgs	11	9.65
3-3.4 kgs	38	33.3
2.5-2.9 kgs	47	41.2
2-2.4 kgs	17	14.9
1.5-1.9 kgs	00	00
<1.5 kgs	01	0.87
Total	114	100
INTRA UTERINE FETAL DEATHS		
IUFD	02	1.68

Table 7: NEONATAL COMPLICATIONS.

COMPLICATIONS	FREQUENCY	PERCENTAGE
Baby in ICU	05	4.2
Total	05	4.2

Demographic Profle:

Table 1 shows Demographic profle of the patients . Majority of the patients were found in the age group of 21–25 years. More number of women in our study were multigravida and had gestational age of ≥37 weeks.

Associated Comorbidities:

Table 2 shows associated comorbidities . As many as 46 pregnant women had comorbidities. Anaemia, hypothyroidism, pregnancy-induced hypertension and eclampsia were the most common comorbidities .

Mode of Delivery:

Table 3 shows that the number of patients who were delivered by LSCS . In our study LSCS was done for Obstetric indications only. Out of the total 119 patients , 115 patients delivered either by LSCS/vaginal delivery/Instrumental delivery, 01 had abortion, 02 had an ectopic pregnancy and 01 maternal death were noted.

Maternal complications:

Table 4 shows maternal complications. 39 out of 119 patients were presented with maternal complications such as obstetric hemorrhages, meconium stained liquor, discharge from suture site, ectopic pregnancy and maternal deaths.

COVID-19 SYMPTOMS AT DIAGNOSIS:

Table 5 shows covid-19 symptoms of pregnant women at the time of diagnosis. As many as 80 patients were asymptomatic.

NEONATAL OUTCOME:

Table 6 shows APGAR score was normal in most of the neonates. Low APGAR score was noted in 6% of neonates. Majority of neonates had birth weight between 2.5-2.9 kgs.

NEONATAL COMPLICATIONS:

Table 7 shows neonatal complications. 5 out of 119 newborn developed neonatal complications and were shifted to ICU.

DISCUSSION:

Viral pneumonia is believed to be the most common nonobstetric infectious disease during pregnancy associated with maternal and neonatal morbidity and mortality . Atypical coronavirus disease (COVID-19), caused by the SARS-CoV-2 virus, is highly infectious and is currently spreading rapidly across the world . It has caused thousands of morbidities and mortalities worldwide since its emergence of SARS-CoV-2 in Wuhan, Hubei Province, China in December 2019 . Many studies have focused on infected patients from the general population; however, details of COVID-19 related pregnancy outcomes are scarce. Chen et al. reported the maternal–neonatal outcomes and vertical transmission potential of COVID-19 pneumonia in pregnant women. Their study focused on pregnant women who only delivered babies by LSCS, and no case has been reported for normal vaginal delivery. There is a very limited data currently available on maternal outcomes in COVID-19 infection in pregnancy. However, as per the data from other viral illnesses such as infuenza, SARS and MERS, pregnant women are more likely to develop viral pneumonitis, with higher morbidity and mortality. The present study involved 119 pregnant women diagnosed with COVID-19 infection. Although the pregnant women with COVID-19 infection tended to present with mild respiratory symptoms, the risk of severe pneumonia during this period is high [6,7,8]. WHO report found that in these patients, the adverse pregnancy outcomes was high, especially among those with other associated diseases such as preeclampsia or other complications because respiratory syndromes may aggravate pulmonary oedema and decrease oxygen saturation [9]. In our study, patients had presented with a number of comorbidities or complications in their pregnancy such as anaemia, gestational DM (GDM), hypertension,hypothyroidism and other medical disorders.Liu et al. [9] and Fan et al. [4] reported that most pregnant women acquired the infection in the third trimester of pregnancy. Similar fndings were noted in our study. The emergence of a disease with respiratory implications in the third trimester of pregnancy is usually associated with a higher risk of LSCS, preterm births, low Apgar indexes, and low birth weight. In our study, out of 119 patients 2 patients had ectopic pregnancy and 1 patient had abortion. Several studies have reported that most women underwent LSCS. In our study also, more number of patients were delivered by LSCS. Regarding the characteristics of the newborns, majority of neonates were born with a normal Apgar index (7–10) with average birth weight of (2.5–2.9 kgs). Certain generalized viral infections, such as HIV are predisposed to intrapartum neonatal transmission [5,6]. For COVID-19, data is limited. In one case series three neonates were born vaginally (one singleton, one set of twins) and throat swabs for PCR at day one of birth were negative for COVID-19 in all three cases [11]. Another COVID-19 positive patient had negative vaginal swab testing during delivery [10]. Many studies [6, 11] have suggested no increased risk of perinatal vertical transmission. These fndings are in accordance with the fndings of our study.

CONCLUSION:

Research on effects of covid-19 infection during pregnancy is still in

it's initial stages.The results of current study suggested that there is no effects of covid-19 infection on maternal and perinatal outcome.All the newborn were diagnosed to be negative to covid-19 infection.Long term follow up of these new born babies required to see any delayed effects.

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