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Original Research Article

**Covid-19 outbreak and decreased hospitalisation of pregnant women in labour – Indian rural tertiary care hospital experience**

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**Abstract**

**Introduction:** Maternal health and covid 19 is an important factor with respect to the healthcare facility in India. With the covid 19 and lockdown enforcement, it gave a new complex situation in maternal health and management.

**Objective:** To find out hospitalization among women with labor and requiring obstetric care during covid 19 outbreaks in India with respect to previous non covid period.

**Method:** A retrospective analysis of pregnant women in an integrated tertiary care medical college in eastern India during the 10 weeks after lockdown (March - June, 2020; lockdown was imposed on March 25, 2020) and compared the findings with a control period of the march to June 2019, 2018 and 2017 before lockdown.

**Results:** During lockdown period total delivery was 3718(in 2020) which is way less than pre lockdown period of previous years, i.e. 2017-2019, which is 4875, 4194, 4161 in 2017, 2018, 2019 respectively. It is statistically significant (P=0.006093) Among the pregnant women from the lockdown period, 35.39% underwent a caesarean section, which was significantly higher than the rate during the pre-lockdown period.

**Discussion:** These findings of substantially reduced numbers of pregnant females hospitalised for labour management at tertiary care hospitals suggest that the number of unattended deliveries and those at lower-level facilities has increased. Immense media coverage along with stay-at-home and physical distancing advice from public health officials during 1<sup>st</sup> phase of the pandemic might have led to hospital-avoiding behaviour among pregnant females even before the implementation of the lockdown.

**Keywords:** Covid; Obstetrics; Pregnancy; Covid with pregnancy; Covid 19.

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**1. Introduction**

Maternal health is an important parameter of a countries health and defines the state of health in a state. From the end of 2019, a new coronavirus disease, COVID-19, emerged and quickly spread around the world. Severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2), the causative virus of this disease, belongs to the  $\beta$ -coronavirus family, together with SARS and Middle East respiratory syndrome, and has similar biological characteristics to these viruses. For obstetricians, the susceptibility and prognoses of pregnant females and the effects of the infection on the fetus have been the focus of attention.

At a tertiary health-care level institute in eastern India, which is mainly provided by medical colleges and advanced medical research institutes, specialized consultative care is given to patients who are referred from primary and secondary hospital, along with general care for the local community[1]. The maternal mortality ratio in India has reduced by 78%, from 556 per 100 000 live births in 1990 to 122 per 100 000 live births in 2015–17, mainly because of an increase in institutional deliveries (from 18% in 2005 to 79% in 2016) and an effective and good referral system for emergency obstetric care[2].

As per one estimate, for each maternal death, approximately 15 pregnancies develop complications that require tertiary obstetric care [3].

Although the implementation of a lockdown by the government slowed the community spread of COVID-19, it could have inadvertently affected the emergency obstetric care for referred women through the suspension of public transport, because most pregnant women in India still use public transport for emergency visits [4]. Along with, unprecedented apprehension because of the quick spread of the pandemic might have resulted in hospital-avoiding behavior among pregnant females.

### 1.1 Objective

To find out hospitalization among women with labor and requiring obstetric care during covid 19 outbreaks in India with respect to previous non covid period.

## 2. Methods

We did a retrospective analysis of pregnant women in an integrated tertiary care medical college in

eastern India during the 10 weeks after lockdown (March - June, 2020; lockdown was imposed on March 25, 2020) and compared the findings with a control period of the March to June 2019, 2018 and 2017 before lockdown, when the number of COVID- 19 patients were nil.

Study was conducted in Midnapore Medical College and Hospital, Midnapore, West Bengal, India.

Results are compiled in MS EXCEL WORDSHEET and is analyzed by SPSS 23 software with ANOVA for statistical significance, taking  $p < 0.05$  as significant.

## 3. Results

During lockdown period total delivery was 3718 (in 2020) which is way less than pre lockdown period of previous years, i.e. 2017-2019, which is 4875, 4194, 4161 in 2017, 2018, 2019 respectively. It is statistically significant (ANOVA,  $P = 0.006093$ ).

Total Delivery					
Year	2017	2018	2019	2020	P Value (ANOVA)
March	1167	979	1040	880	0.006093
April	1258	1131	1053	864	
May	1271	1117	1184	933	
June	1179	967	884	1041	
<b>Total</b>	4875	4194	4161	3718	
Total LSCS					
Year	2017	2018	2019	2020	P Value (ANOVA)
March	355	296	317	316	0.462238
April	373	311	365	272	
May	387	319	394	336	
June	346	363	306	392	
<b>Total</b>	1461 (29.96%)	1289 (30.73%)	1382 (33.21%)	1316 (35.39%)	
Total still birth					
Still birth	2017	2018	2019	2020	P Value (ANOVA)
March	27	30	24	24	$p > 0.05$
April	42	36	25	34	
May	34	31	32	26	
June	30	37	26	22	
<b>Total</b>	133 (2.72%)	134 (3.19%)	107 (2.57%)	106 (2.85%)	

Among the pregnant women from the lockdown period, 35.39% underwent a caesarean section, which was significantly higher than the rate during the pre-lockdown period (of 29.96%, 30.73%, 32.21% IN 2017, 2018, 2019 respectively underwent a caesarean section, but statistically insignificant) and late intrauterine fetal death and stillbirth is 2.85% during the post-lockdown period, compared with the pre-lockdown period of 2.72%, 3.19% and 2.57% in 2017, 2018, 2019 respectively. It is more than the previous year still birth percentage.

## 4. Discussion

Total delivery decreased with lockdown in India from March 2020 And gradually increased in June 2020 after easing of lockdown protocols with respect to the same period of 2017, 2018, 2019 and is statistically significant ( $p < 0.05$ ). It is evident by the below line diagram.

Total LSCS percentage (35.39%) also raised in the same period with respect to the previous years. Still birth rates are slightly raised to the previous year though statistically not significant.

## 5. Inference

Human history has experienced numerous epidemics, including the plague of the 13-14<sup>th</sup> century; the Columbian exchange of measles, smallpox and syphilis in the 16<sup>th</sup> century; and cholera in the late 19<sup>th</sup> century [5]. The COVID-19 pandemic is the first pandemic in 100 years, since the Spanish influenza pandemic of 1918. However, in the last 100 years, we have developed new weapons against infection based on microbiology, immunology and molecular biology. With these weapons, we can fight new enemies in the clinical arenas of obstetrics and infectious disease control with a speed and precision that are incomparable to those of the early 20<sup>th</sup> century.

These findings of substantially reduced numbers of pregnant females hospitalised for labour management at tertiary care hospitals suggest that the number of unattended deliveries and those at lower-level facilities has increased. Immense media coverage along with stay-at-home and physical distancing advice from public health officials during 1<sup>st</sup> phase of the pandemic might have led to hospital-avoiding behaviour among pregnant females even before the implementation of the lockdown. A decrease in the proportion of referred cases is even more alarming and shocking, as these are the women in whom timely intervention decreases the maternal and neonatal mortality. Hospitals are now perceived and looked upon as reservoirs of severe acute respiratory syndrome Covid 19 and females are avoiding hospital visits even when they require tertiary-level care and facility; and, a reduction of the availability of public transit systems during lockdown also halts access to tertiary care for referred women from rural areas. This current study showed a substantial rise in late intrauterine fetal death and stillbirth, along with in-hospital maternal mortality, which might be because of the delayed presentation of females requiring emergency obstetric care.

## Reference

- [1]. Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India. Indian Public Health Standards (IPHS) Guidelines for Community Health Centres. 2012. <https://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidelines-2012> (accessed June 2, 2020).
- [2]. Registrar General of India. Sample Registration System: Maternal Mortality Ratio bulletin 2015–2017. November, 2019. [https://censusindia.gov.in/vital\\_statistics/SRS\\_Bulletins/MMR\\_Bulletin-2015-17.pdf](https://censusindia.gov.in/vital_statistics/SRS_Bulletins/MMR_Bulletin-2015-17.pdf) (accessed June 2, 2020).
- [3]. Pal A, Ray P, Hazra S, Mondal TK. Review of changing trends in maternal mortality in a rural medical college in West Bengal. *J Obstet Gynecol India* 2005; 55: 521–24.
- [4]. Singh S, Doyle P, Campbell OMR, Rao GVR, Murthy GVS. Transport of pregnant women and obstetric emergencies in India: an analysis of the '108' ambulance service system data. *BMC Pregnancy Childbirth* 2016; 16: 318.
- [5]. Aberth S. *Plagues in World History (Exploring World History)*. Lanham, ND: Rowman & Littlefield Pub Inc, 2015 Published online: E-Pub.