

# INDIRECT EFFECTS OF FIRST WAVE OF COVID -19 ON MATERNAL HEALTH



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## INTRODUCTION

- The Coronavirus Disease (SARS-CoV-2) was declared a global pandemic by WHO on March 11th 2020[1]. The pandemic results in many unanticipated changes, majorly affecting the health system. The lockdown norms enforced by the state had lead to disruption in routine health care and had interrupted planned antenatal visits to the hospitals. Although COVID-19 disease itself does not cause increased maternal mortality compared to the general population directly, unsupervised pregnancies and the absence of routine antenatal visits had indirect adverse effects on maternal health [2]. The relocation of health resources to the emergency services had lead to collapse of routine health care. Lack of physical examination resulted in misread of high risk factors and had negative impact on pregnant women health.
- Pregnancy is an immunocompromised state which makes this group more vulnerable for respiratory infections[3]. Covid-19 produces a Hypercoagulable state and pregnancy itself is a hypercoagulable state. Thus Covid-19 during pregnancy could increase the risk of Maternal VTE [4].
- In light of various difficulties encountered during Covid-19 period and pregnant women being under high risk group, the aim of present study is to study the indirect effects of Covid-19 pandemic during first wave on pregnant women health and maternal- fetal outcomes.

## OBJECTIVE

- To analyse the effects of first wave of covid -19 on maternal health and its outcome.

## METHODOLOGY

- An Observational Study was conducted in the Department of Obstetrics and Gynaecology for a period of 10 months from April 1st, 2020 to January 31st, 2021. The study included all Antenatal and parturient women both covid positive and non covid admitted during the study period and it assess the effect of covid pandemic on both the population. The study was approved by the institutional ethics committee and informed consent was obtained from the study participants. The data was collected including the number of admissions, number of institutional deliveries, high risk pregnancies, NICU admissions, No of caesarean section, no of preterm deliveries.
- These data was compared with those from PreCOVID-19 days, from June 1st 2019 to March 31st 2020, 10 months period. March 2020 was included in precovid -19 days as the lockdown was not declare in the city and no restrictions were imposed on transport services. Both registered and unregistered pregnant women were attended and treated as emergency services were open.

## STATISTICAL ANALYSIS

- Data entry was carried out using MS Excel Software and analyzed using SPSS version [SPSS Inc]. The descriptive and analytic statistics are presented in frequency tables and graphs. The categorical variables were briefed as number and percentage .The Student t-test was used to analyze the demographic data. P value <0.05 was considered statistically significant.

## RESULTS

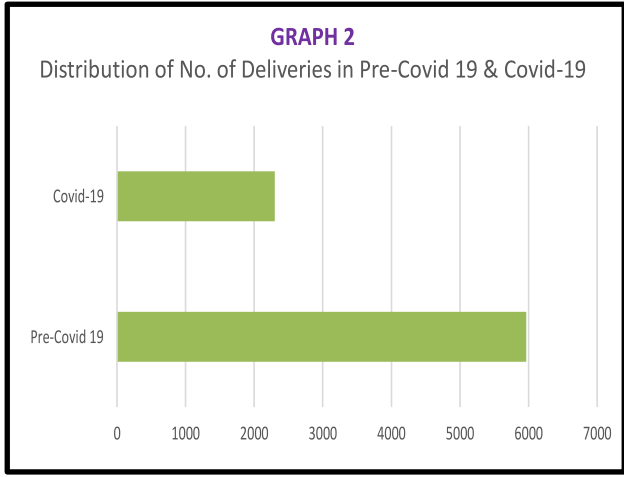
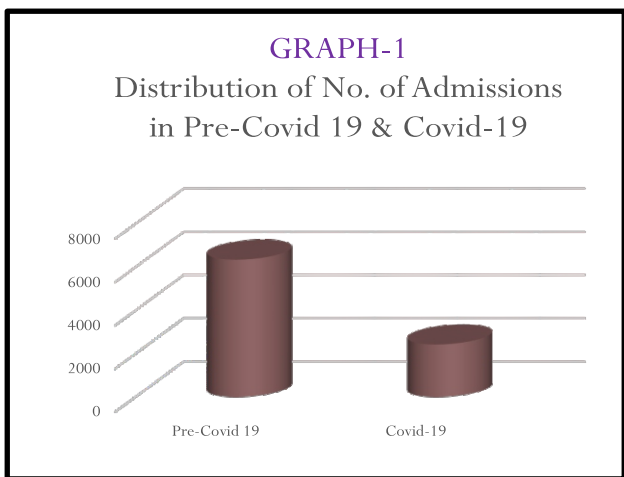
- During covid -19 pandemic the country was under strict lockdown, urban and rural public and private transport services were adversely disrupted, this resulted into significant fall in the number of admissions to the institute. Thus there was a fall of about 61.81% in total no of admission as shown below in [Graph-1].
- This fall in number of admissions subsequently leads to reduction in number of institutional deliveries . Thus there was 61.41% reduction in number of institutional deliveries as shown below in [Graph 2]. Out of 2302 deliveries during covid-19 period, 1468 [64%] were Vaginal deliveries and 834 [36.2%] were caesarean deliveries.

Comparison in statistics between the precovid-19 and covid-19 periods in the Department of obstetrics α

TABLE 1

|                     | Pre-covid-19  | Covid -19    | p value b |
|---------------------|---------------|--------------|-----------|
| Admission           | 6343          | 2422         | <0.001    |
| Deliveries          | 5966          | 2302         | <0.001    |
| Maternal mortality  | 6             | 8            | <0.001    |
| High risk pregnancy | 1699[26.79 %] | 1107[45.71%] | <0.001    |

- a. Values are given as number [percentage]  
b. Student t-test ; P<0.05 is considered significant



## DISCUSSION

- The Covid-19 pandemic has affected entire segment of population, particularly hitting the healthcare sector. It has centralised the healthcare services to the emergency services and routine health facilities were disturbed. From the present study it is observed that covid-19 pandemic has affected maternal health indirectly. The strict lockdown norms, inaccessibility of transport facilities, fear of catching infection by hospital visits resulted in significant decrease in number of hospital admissions, institutional deliveries and increase in high risk pregnancies and number of preterm deliveries and eventually increase in NICU admissions.
- Difficulties in approaching health care facility, attending routine antenatal visits leading to lack of physical evaluation of pregnant women has shown an increase in comorbidities like Anaemia, PIH and eclamptic patient. Less access to oral iron and folic acid supplements, antihypertensive drugs, tocolytic drugs in preterm labour because of improper or no prescriptions was also seen. Fear of exposure has also made some to miss mandatory routine investigations and Ultrasonography. Economic loss, low income source and poor buying capacity in Covid-19 period has further thrash the nutrition among pregnant women.[5] It was found that Covid-19 poses psychological impact on pregnant women. Perinatal anxiety, stress, depression has increase the risk of pregnancy induced hypertension, preterm labour leading to poor birth outcome[6].

## CONCLUSION

Present study observed that first wave of Covid-19 pandemic has damaged the health care sector particularly affecting the maternal health. Avoidance of health facilities due to lockdown and fear of contracting infection has shown an increase in maternal complications. Studies have proved that Covid-19 has not directly affected the pregnant women, rate of mortality among pregnant women and general population were same during Covid-19. [2]. Our study depicts that Covid-19 has indirectly affected the maternal health by increasing in number of PIH cases, Anaemia, preterm birth and NICU admissions. Although there was increase in number of high risk cases all the covid positive cases were managed well in the institute with good maternal and fetal outcome.

## REFERENCES

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- Roberton T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, Sawadogo Lewis T, Walker N. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. Lancet Glob Health. 2020 Jul;8(7):e901-e908. doi: 10.1016/S2214-109X(20)30229-1. Epub 2020 May 12. PMID: 32405459; PMCID: PMC7217645.
- Coronavirus disease (COVID-19): Pregnancy and childbirth.
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- Impact of Covid-19 on maternal nutrition and health PDF.
- Psychological impact of coronavirus disease in pregnant women.

TABLE 2

| High risk factors | Pre-Covid 19 | Covid-19 | % Rise in covid period | P-value |
|-------------------|--------------|----------|------------------------|---------|
| PIH               | 0.07         | 0.11     | 4                      | < 0.001 |
| Anaemia           | 0.04         | 0.13     | 9                      | < 0.001 |
| Eclampsia         | 0.03         | 0.05     | 2                      | < 0.001 |
| PreTerm           | 0.12         | 0.17     | 5                      | < 0.001 |
| NICU_ABW          | 0.05         | 0.07     | 2                      | < 0.001 |
| NICU_LBW          | 0.04         | 0.15     | 11                     | < 0.001 |

