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Original Research Article

Impact of COVID-19 on obstetric care delivery and maternal and perinatal outcome

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ABSTRACT

Introduction: Corona virus disease 2019 (COVID-19) has changed all our lives in a significant way. Despite the fact that pregnant women were placed in the ‘vulnerable group’, antenatal care services have been affected by the pandemic. We are conducting the study to find the impact of COVID-19 on antenatal care and its impact on maternal and perinatal outcomes and thereby giving us an insight on how to improve our provision of care.

Objectives: 1. To find the effect of COVID-19 on obstetric care delivery in non-covid and covid patients. 2. To assess the maternal and perinatal outcome in Covid positive patients.

Materials and Methods: This is a descriptive study conducted at Amala Institute of Medical Sciences, Thrissur, Kerala during the period of April 2020 to December 2020. All pregnant women who delivered here during the period were taken in the study. Data was collected through pre prepared questionnaire by direct or telephonic conversation.

Results: Total deliveries were 919 with response rate of 85.6%. During pandemic, approximately 54% of women missed their ANC visit due to fear of Covid. Absence of partner during visits, delivery and postnatal period was a cause for nervousness for 56.40% of mothers. Telemedicine was used by 52% of subjects and was found effective.

Conclusion: Antenatal care is essential but challenging during COVID-19 pandemic. A protocol based approach is needed which is cost-effective and easy.

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1. Introduction

Antenatal care (ANC) can be defined as the care provided to pregnant women in order to ensure the best health conditions for both mother and baby during pregnancy. The components of ANC include: risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion.¹ Thereby, ANC reduces maternal and perinatal morbidity and mortality during labour and delivery.

However in the current scenario, with COVID-19 affecting the whole health care system how to provide

proper antenatal services is a big question. This is inspite of the fact that pregnant women are placed in the vulnerable group for COVID-19. Access to routine antenatal care was affected² more when government authorities came up with restrictions regarding social distancing, personal protective equipment, travel restrictions, quarantine policies etc. The advice to all pregnant women from the Royal College of Obstetricians and Gynecologists is to decide if the need for an antenatal appointment is greater than the risk of being exposed to COVID-19.³ Right for proper antenatal care was threatened. Restrictions along with fear of infection have further increased anxiety and obsessive compulsion symptoms among the pregnant women.⁴

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Along with the governmental restrictions, hospitals came up with their own outpatient patient, inpatient and bystander polices to prevent the spread of COVID-19 infection. Many hospitals were even shut down due to wide spread infection among the healthcare workers. All these further affected a proper delivery of care for the pregnant women. However, there is only limited published research exploring the impact of COVID-19 pandemic on antenatal care utilization among pregnant women in the country.

Telemedicine emerged as the doctors' primary tool to slowdown the spread of the coronavirus, keeping social distancing and providing services by phone or videoconferencing for the uncomplicated, to focus personal care and limited supplies to the complicated and most urgent cases.⁵ However, how effective it was is still questionable.

2. Materials and Methods

2.1. Study design

Descriptive study.

2.2. Study place

Department of obstetrics and gynaecology, Amala Institute of Medical Sciences.

2.3. Study group

All pregnant women who delivered at Amala Institute of Medical Sciences during the period of April 2020 to December 2020.

2.4. Study period

April 2020 to December 2020.

2.5. Inclusion criteria

All women delivered at Amala Institute of Medical Sciences during the period of April 2020 to December 2020.

2.6. Exclusion criteria

Patients not willing to disclose information.

2.7. Methodology

After getting clearance from the institutional ethical and research committee, study was conducted. Patients were selected according to the inclusion criteria. Informed consents were taken from the patients.

Our hospital was completely shut down from 8th August 2020 to 31st August 2020 due to spread of covid infection among healthcare workers. Hence, the total study population was divided into three groups according to the date of delivery: 1. During complete lockdown (April 1st 2020 – May 31st 2020) 2. During the extended lockdown

but before complete shutdown of the hospital (June 1st 2020- August 8th 2020) 3. During extended lockdown after reopening of the hospital (September 1st 2020- December 31st 2020).

Data was collected using an interviewer-administered telephonic questionnaire which was developed after reviewing relevant literatures. This included questions regarding missed appointments, difficulty to access healthcare, absence of face to face visit, communication problems due to use of PPE, covid testing policies, OPD and IPD policies of the hospital. Intrapartum and neonatal details are collected from hospital records. Maternal and perinatal outcome of covid positive deliveries were also assessed.

The statistical analysis of the data thus collected is done by observational method of data analysis and computed in results respectively.

3. Results

Out of 919 total deliveries during the study period, 787 women responded, giving a response rate of 85.6%. Majority of the women belong to the age group of 26-34 years of age (55%).

Total number of women in group 1, 2 and 3 was 238, 250 and 299 respectively.

In our study we found that percentage of women who missed their regular ANC visits was more in the second group that is those who delivered during the extended period of lockdown (193/250, 75%) when compared to group 1 (106/238, 44%) and group 3 (121/299, 40%). Of these majority were due to fear of COVID-19 (320/787, 40.6%). Other reasons were women becoming a primary contact person, to avoid unnecessary travel etc.

Women found it difficult to access health care more during the period of complete lockdown (54%) and also when the hospital was completely shut down in the month of August 2020.

Absence of face to face visit bothered only 30% of the whole study population however the number was more in group 2 (61%, 153/250) when compared to group 1 (6.3%, 15/238) whose most of antenatal visits were scheduled before the complete lockdown and group 3 (2.2%, 68/299) whose only first trimester was affected which involved only monthly visits.

3.1. OPD services

Women in all three groups had equal difficulty in communication with their doctor due to use of personal protective equipment like mask, face shield etc. Women in group 2 (38%) and 3 (40%) felt unnecessary delay during the day of visit due to the revised hospital triage system, however the overall percentage was low (30%, 236 out of 787).

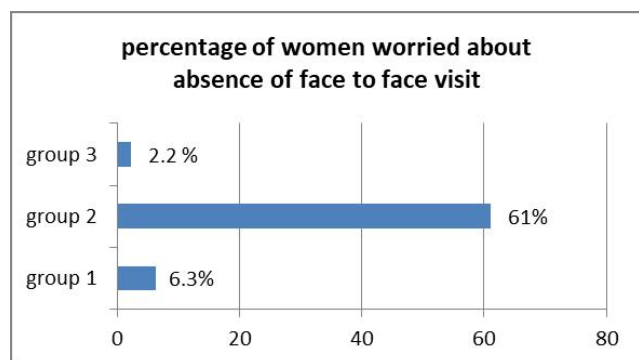


Fig. 1: Percentage of women worried about absence of face to face visit

Women, 52.4% in group 2 and 51.1% in group 3 were worried about the absence of company of partner or family during the visit in the OPD. However, only 10% women in group 2 and 32% women in group 3 had difficulty to properly communicate the health status of mother and child to their companion as per the words of doctor.

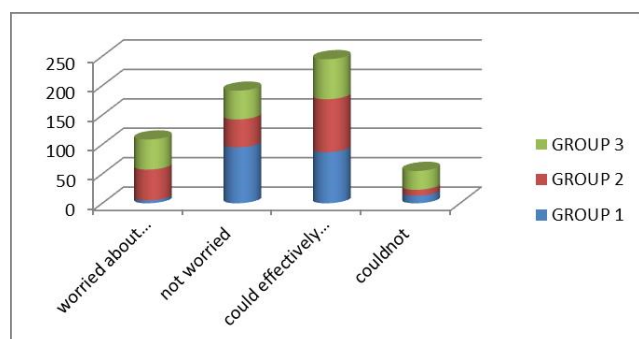


Fig. 2: Response to by stander policy

More than 90% of the individuals were satisfied with the testing policies of the institution. However less than 10% felt those were unnecessary.

More than half of the study subjects utilized telecommunication systems by either direct telephonic communication or video conferencing or by Whatsapp messages or through mobile applications developed by the institution. They commented that telemedicine was useful enough to solve the queries and worries.

Total number of covid positive deliveries during the study period was 13. This included 6 primigravidae and 7 multigravida. 6 out of 13 had a normal vaginal delivery and 7 underwent cesarean section for obstetric indication.

8 of them were asymptomatic and was incidentally detected positive for COVID-19. Rest 5 was categorized as category b2 with mild symptoms. 4 out of 13 had difficulty to access health care since they were tested positive.

Postnatal period was uneventful in all cases. Average duration of stay in the hospital was 7 days +/- 2 days. All

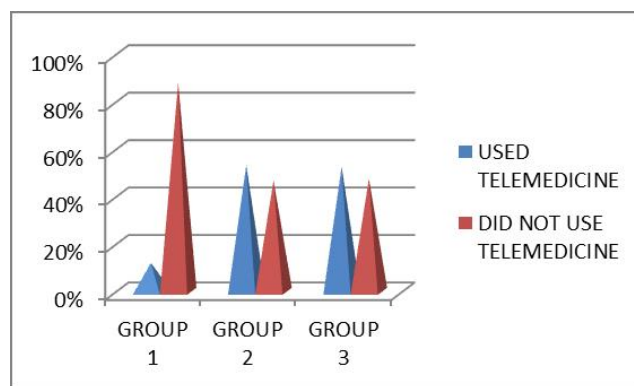


Fig. 3: Use of telemedicine

babies were breastfed in spite of the worries of the mother. Mothers were strictly advised to use mask and gloves while handling the baby. 1 neonate was tested positive on day 3 of life.

4. Discussion

COVID-19 pandemic have affected the health system globally. During the pandemic, where social distancing is the key for survival, non-emergency yet essential antenatal services had to be compromised.

Our study showed that fear of corona and contracting the disease was the primary worry of the women. This further led to restraining from antenatal visits. This finding was comparable to the study conducted by Tadesse et al.⁶ A minimum of 4 antenatal face to face visit is advised and these can be clubbed with laboratory investigations and ultrasound studies.

Our study showed that absence of partner during antenatal visits, during delivery, restriction in the number of bystanders during postnatal period were more concerning for the women than the delay during the visit or the testing policy of the institution.

Most women were able to use the telecommunication system properly which purely depended on the socio economic level of the women. All women who used telemedicine are satisfied about the approach of doctors during videoconferences and telephonic conversations. This shows that our hospital system and protocols were effective enough to meet the need and expectations of the women.

Most women who were tested positive were asymptomatic. Caesarean sections were done for obstetric indications which are in par with the recommendations by RCOG. All neonates were breastfed while following all safety measures to prevent postnatal spread of infection from mother to the neonate.

5. Conclusion

With or without COVID-19 each pregnancy is precious. Attending antenatal care remains an integral part of maternity care. COVID-19 has changed the approach to the care of pregnant women, delivering mothers and post-delivery management. Following a protocol based approach is the key to effective management of Antenatal care during the pandemic. Use telemedicine, social distancing and personal protection help us effectively provide care to our antenatal mothers.

6. Source of Funding

None.

7. Conflict of Interest

The authors declare no conflict of interest.

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