# PATTERN OF OBSTETRIC PATIENTS PRESENTED TO TERTIARY CARE HOSPITAL DURING THE COVID -19 PANDEMIC A SINGLE CENTRE EXPERIENCE

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## ABSTRACT

The COVID-19 pandemic is a global emerging concern regarding the imminent adverse effects during pregnancy. This study reviews issues related to COVID 19 during pregnancy and delivery and will lead to describe the different presentation of obstetric cases in terms of mode of delivery, complications in pregnancy and fetal presentation.

**Objective:** To see the different obstetric complications, mode of delivery and fetal presentation in covid 19 pandemic.

**Methods**: Descriptive cross-sectional study from 15th March 2020 to 15th June 2020. All pregnant patients presenting in Gynae and Obstetric ward Hayatabad Medical Complex Peshawar in Covid-19 pandemic.

**Results:** Total 1367 cases of pregnant women were identified with different presentations in pandemic COVID- 19 admitted to Gynae department Hayat Abad medical complex Peshawar. Different complications related to pregnancy, mode of delivery and fetal presentation were noted. Four patients required admission to an intensive care unit. Most common complication was gestational hypertension. The mode of delivery was normal vaginal delivery and cesarean sections. Most patients who presented in obstetric department were multi gravidas. Fetal distress and meconium stained liquor were common among normal Apgar score babies. Two maternal deaths were reported. There were twelve neonatal deaths. Preterm births and post term pregnancy were common among normal cases.

**Conclusion:** This study conclude that maternal and fetal presentations were due to stress and anxiety, unavailability of antenatal checkup, routine OPDs and clinics. Unwillingness of patients for hospital treatment and preference of home delivery.

**Keywords:** COVID-19, pregnancy, mode of delivery, maternal presentation, fetal presentation, complications of pregnancy.

## INTRODUCTION

Information about COVID 19 is evolving rapidly, and the interim guidance by multiple organizations is constantly being updated and expanded.[1''] COVID-19 which is an emerging global disease since its first inception in Wuhan, China, since December 2019. with a rapid increase in infected cases and leading to deaths. The available information about the illnesses with other highly infected coronaviruses i.e. severe acute respiratory syndrome and the Middle East respiratory syndrome can give the information about COVID-19's effects during pregnancy.[2] China, in December 2019. Limited data are available about coronavirus disease 2019 during pregnancy; however, information on illnesses associated with other highly pathogenic coronaviruses (ie, severe acute respiratory syndrome and the Middle East respiratory syndrome corona 19 which is caused by the new beta coronavirus, SARS-CoV-2, with high virulence is currently prevalent all over the world causing thousands of mortalities. However, about Corona- 19 limited data is available for the clinical course and management in pregnancy.[3]

RNA, nonsegmented, enveloped viruses, which cause illness ranging inseverity from the common cold to severe and fatal illness. The term coronavirus derives from the Latin word corona, which means crown or halo; that designation arises from the appearance of coronavirus virions viewed by electron microscopy, in which the virus particles display a crown-like fringe typi It is stated that its inception, first reported in Wuhan, China, on Dec.31, 2019 first in humans, has attracted major interest throughout the world. Since the inception the occurrence of covid19 infection, reported cases has increased rapidly, with more than 1,800 laboratory-confirmed cases and 1600 deaths on Feb. 16, 2020 and onward the situation is getting worse then this.[4]

In Pakistan the total no of confirmed cases are 20,9337 with death rate of 4304 cases till 30th June 2020. We know that antenatal care services have been affected by the COVID-19 pandemic in spite the fact that pregnant ladies were placed in the 'exposed group. However, the COVID-19 pandemic has made the maternity services adjusting how they provide antenatal care to pregnant women due to the government limitation

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regarding social distancing, which has affected the pregnant women's access to routine antenatal care.

The instructions 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. This indicates that women have to make difficult decision of what antenatal care provision they need. In this situation pregnant women face additional difficulties during face to face consultation and social distancing because of their need to the workforce, as care givers, and the need to attend antenatal clinics.[5],[6].

One of research has shown that low-risk pregnant women are not any more likely to develop complications at home than they are at a hospital. In fact, home births are generally associated with lower rates of maternal interventions, such as inductions of labor, cesarean sections, and major perineal tears. Additionally, women who are considered to have a higher risk pregnancy, such as those with diabetes, preeclampsia, a previous Cesarean section, or carrying multiple fetuses, should consider giving birth in a healthcare setting, as they may develop life-threatening complications.[7]

It is said that antenatal appointments are being offered by maternity units if a face-to-face consultation is deemed unnecessary after online consultation. The worry is that women are being asked to changed their mind about antenatal services, when the socioeconomic impact of COVID-19 may have drastic effects on their and physical and psychological wellbeing. Women's rights to have optimum antenatal care are affected if they have an appointment that does not involve an ultrasound or laboratory test then they are simply told not to come to the hospital or visit a health centre.[8],[9].

It is clear from UK maternal mortality reports, women at particular risk of dying during pregnancy are the ones who are Black, Asian, ethnic minority women, immigrants, victims of domestic violence and women of lower socioeconomic status.[10]

It is important to know the need of high-risk women, how they alter maternity services during the pandemic, it needs a careful review of their status on an individual basis, which need careful triage of patients. Women who inadequately utilize antenatal services are twice as likely to be at risk for maternal morbidity.[11]

Closure of normal routine clinics, disruption of maternity services and diversion of resources away from essential pregnancy care, it's all due to prioritizing the Covid-19 response and taking care of Covid 19 patients, are causing increase risks of maternal morbidity and mortality.[12,2]

In this pandemic because of these different factors, we study the impact of Covid 19, that how much it affects the outcome of pregnancy. The long-term effects of maternal morbidity and mortality on families, societies and communities should not be underestimated. Consideration should be given to the need to provide appropriate antenatal care for high risk women in the current pandemic. This can be achieved by proficient screening by maternity units to ensure women that need and should have face-to-face consultations are provided this service.[13]

The coronavirus crisis causing many pregnant women's birth plans distorted, they are so anxious about delivery. This led to home delivery more as compare to hospital confinement.[14]

For Obstetricians and Gynecologists on the front lines of the COVID-19 fight, there is the additional challenge of caring for at least two patients simultaneously, the mother and her unborn baby.

Five months into a pandemic that has swept the world, we still know very little about COVID-19 infection in the general population, let alone the obstetric one. We do not know if having and resolving COVID-19 infection provides any long-term protection against future disease.[15–17]

As we know that the Coronavirus epidemic caused increased stress and anxiety for pregnant women. Anxiety and stress in pregnancy are associated with increased rate of complications like increased nausea and vomiting during pregnancy, preeclampsia, depression, preterm labour, low birth weight, and low Apgar score, post term pregnancy (because of fear of antenatal checkups and no fetal monitoring regularly[18,19]

In the COVID 19 pandemic, pregnant women have had a birth plan before the pandemic, but this condition has disrupted everything planned and now every woman is worried about, how their families being infected during transportation and delivery and postnatal events. Pandemic, as declared by the World Health Organization (WHO) on March 11, 2020, has caused havoc globally. Till April 14, 2020, the number of confirmed cases had gone over 1 844 863, and 117 021 deaths had been reported worldwide. This pandemic affecting 169 countries, and hitting every continent except Antarctica.[20–22]

Pregnant women and newborns because of low immunity status, they should be considered particularly vulnerable populations in Covid-19 pandemic and during this pandemic prevention and management strategies for pregnant ladies and newborns should be looked. Indirect impact of covid19 is also of great concern in pregnant patients in the form of good antenatal care, counselling in antenatal period and anxiety created by this pandemic, can affect care and management of obstetric patients. Care of obstetric patients' strategy should be identified in this COVID-19 pandemic.[23]

## MATERIAL & METHODS

It was a descriptive cross-sectional study, done

in Gynae A unit, Medical and Teaching Institute Hayat Abad Medical Complex Peshawar during 15th March to 15th June 2020, in the peak of COVID-19 pandemic.

Inclusion criteria was all pregnant patients from gestation of 30 weeks to 43 weeks. Exclusion criteria was all gynecological cases, gestation less than 30 weeks, comorbidity of pregnant patients like coagulopathy, cardiac disease, known diabetic, known hypertension and renal disease etc.

Total 1367 obstetric patients were admitted through emergency in the Gynae & obstetric department. Maternal presentation, complications in pregnancy and fetal presentation were noted.

## RESULTS

During peak of corona pandemic. Total 1367 obstetric patients were admitted through emergency in the Gynae department. Maternal presentation, complications in pregnancy and fetal presentations were noted. The mode of delivery was normal vaginal delivery and cesarean sections. Most of the patients who presented in obstetric department were multi gravidas and the most common complication was gestational hypertension. low Apgar score was common fetal outcome among total deliveries followed by meconium stained liquor.

Four patients were admitted to an intensive care unit. Two patients of maternal deaths were reported. There were 12 neonatal deaths. Preterm births were 28.7% of cases. Post term pregnancy was the most common presentation in obstetric patients. Obstetric patients admitted were primi gravida, multigravida and grand multigravida. (Table.1)

The mode of delivery in obstetric patients observed were as follows: normal vaginal delivery, cesarean sections and instrumental deliveries. Few patients presented as obstructed labour and handled cases. Preterm labour 102 cases and post term pregnancy were 180 cases. Breech vaginal deliveries in 20 and twin vaginal deliveries were 24 cases (Table.2).

Different complication in pregnancy were as follows: pregnancy induced hypertension, preeclampsia and eclampsia. Patients also presented with PPROM, PROM and chorioamnionitis. Few patients have rupture uterus and scar dehiscence (Table. 3).

Fetal presentation in the form of fetal distress, meconium stained liquor, low Apgar score in fetuses and neonatal death (Table. 4).

## DISCUSSION

In the recent pandemic COVID-19 climate when the cases in Pakistan are at peak, and there is no treatment options available along with no option of vaccine, except prevention which is a best option. Clear data available which suggest that practices of social dis-

**Table 1: Parity Total admissions: 1367**

| Parity | No | %age |
|---|---|---|
| Primi gravida | 380 | 27.7% |
| Multigravida | 721 | 52.7 % |
| Grand multi gravida | 266 | 19.4 % |

**Table 2: Mode of delivery**

| Normal vaginal delivery | 688 | 50.3 % |
|---|---|---|
| Emergency cesarean section | 210 | 15.3 % |
| Elective cesarean section | 67 | 5.3 % |
| Preterm labour | 102 | 7.4 % |
| Post term pregnancy | 180 | 13.2 % |
| Obstructed labour | 36 | 2.6 % |
| Forceps delivery | 12 | 0.88 % |
| Vacuum delivery | 43 | 3.14 % |
| Vaginal birth after caesarean | 33 | 2.4 % |
| Twin vaginal delivery | 24 | 1.75 % |
| Breech vaginal delivery | 20 | 1.75 % |

**Table 3: Complications in pregnancy Total admissions: 1367**

| Handled cases | 27 | 1.97 % |
|---|---|---|
| Induction of labour | 56 | 4.09 % |
| Abruption | 14 | 1.02 % |
| Placenta previa | 15 | 1.09 % |
| Intra uterine death | 30 | 2.1 % |
| Rupture uterus | 7 | 0.51 % |
| Pregnancy induced hypertension | 54 | 3.95 % |
| Intrauterine growth restriction | 3 | 0.21% |
| Premature rupture of membrane | 101 | 7.3 % |
| Preterm premature rupture of membrane | 12 | 0.09 % |
| Chorioamnionitis | 3 | 0.21 % |
| Shoulder dystocia | 3 | 0.21 % |
| Preeclampsia | 7 | 0.51 % |
| Eclampsia | 5 | 0.36 % |
| Gestational diabetes | 15 | 1.09% |
| Previous 1 cesarean section | 96 | 7.02 % |
| Previous 2 cesarean section | 22 | 1.60 % |
| Previous 3 cesarean section | 9 | 0.65 % |
| Previous 4 cesarean section | 3 | 0.21 % |
| Previous 5 cesarean section | 1 | 0.07 % |
| Post-partum hemorrhage | 26 | 1.90 % |
| Maternal death | 2 | 0.14 % |

**Table 4: Fetal presentation**

| Fetal distress | 31 | 2.26 % |
|---|---|---|
| Low Apgar score | 201 | 14.7 % |
| Meconium-stained liquor | 85 | 6.21 % |
| Neonatal death | 12 | 0.877 % |

tancing are effective means to stop the spread of this pandemic The disease consequences in pregnancy are largely unknown. The Centers for Disease Control (CDC) and the American College of Obstetricians and Gynecologists (ACOG) both of them recommend that all people should avoid, gatherings of any sort, travel and social visits. Additionally, it is proposed to frequently clean commonly touched surfaces, including, car and home doors, counter tops, computers, cell phones, etc. When in public places, maintaining social distancing of at least 6 feet as much as possible.[24],[25]

Pregnant women who are the most susceptible group should be aware of all consequences of this infection and all the methods of preventions strategies.[26]

We studied obstetric patients' presentation in this pandemic corona (covid -19). As we know this is a vulnerable group and special care should be given in the form of antenatal visits and counselling sessions about effects of pandemic corona on pregnancy and fetal outcome directly and indirectly.

Although there is no formal guidance exists on antenatal care in covid 19 pandemic. But still it is important that antenatal care specially in low-risk patients, visits should be spaced. For patients with diabetes and chronic hypertension patients, need blood glucose monitoring and blood pressure checks consider online visits. patients with postpartum blood pressure checking can be done at home.[27],[28]

There are different implementations in different hospital setups but generally applied methods are, universal screening of patients in labour and delivery is important because there is risk of asymptomatic viral spreading. Specially during checking patients who are infected or person under investigation need admission for an obstetric reason, all personnel who take care of the patient should wear appropriate personal protective equipment (PPE) along with face mask and face shields.[29]

As we know that pregnant patients are considered high-risk for influenza and other respiratory infections including COVID-19. Absolute challenges may provide a coordinated approach to pregnancies which are affected by SARS-CoV-2. It is clear that the mechanical and physiological changes in pregnancy increase susceptibility to infections, and favor rapid progression of the disease to respiratory failure in the pregnancy. It is also evident that the pregnancy bias toward T-helper 2 system dominance, which provides protection to the fetus but on the other hand leave the mother to viral infections, which is mostly contained by the T helper1 system which causes increase susceptibility to infection. It is also important that social distancing, hand hygiene and cough etiquettes may provide protection in this pandemic.[30],[31]

The purpose of our study is to provide a frame work which may be adopted by the mother in tertiary care hospital and the health care provider.

It is because of the coronavirus pandemic; all hospitals are trying to reduce the number of people coming in for appointments. This will help limit the spread of the virus and take the pressure off NHS services, including maternity services. Early pregnancy care during the coronavirus pandemic The National Institutes of Health has started a multidimensional study to see the COVID-19 pandemic effects on pregnancy and during labour. They are looking into the medical records of up to 21,000 women to evaluate whether changes to healthcare delivery which were implemented as a result of the pandemic, this causes increasing cesarean delivery rates and higher rates of pregnancy-related complications.[24],[32]Top of FormBottom of Form

It is for information that induction of labour in pandemic should be decided very carefully because guidelines about induction of labour in pandemic i,e giving women information about the potential benefits and risks of inductions of labour compared with waiting for labour to start spontaneously is important and should be observed especially in the time of a pandemic when women are likely to be particularly worried about their care.[30]

We strongly support the continual review of clinical guidelines as new evidence emerges to encourage best practice. Current UK guidance recommends that induction of labour should be offered to women with uncomplicated pregnancies who go beyond 41 weeks to avoid the risks of prolonged pregnancy, including stillbirth.[33]

This condition also put patients in great stress and anxiety. If someone is planning an "elective" induction of labour on a given date (meaning a labour induction that is not done for any medical reason), know that depending on the hospital's data on the labour unit , particularly if they have a heavier patient no of laboring women infected with the virus it is recommended that elective inductions may need to be put off for some time, or rescheduled to a different day.[34]

Induction we did only for obstetric reason not wholly for pandemic crises. 56 patients were induced (4.09%) for different indications.In our study we observed 56 patients for induction of labour i,e 4.09 %,indications were post term pregnancy ,PROM, chorioamnionitis and fetal distress, and CTG issues. We face 2 failed cases of induction and end up in operative vaginal delivery (cesarean section). Preterm labour were

also included from 30 weeks of gestation to 36 weeks of pregnancy. Total 102 patients were preterm (7.4%). Among 102 patients 39 were delivered vaginally and few were put on conservative management and mostly delivered by cesarean section. Instrumental delivery was performed. Forceps vaginal delivery in 12 and vacuum delivery in 43 patients.

In one study Preterm delivery either before 37 or 34 weeks of gestation, Preeclampsia, fetal growth restriction preterm pre labor rupture of membranes, and Cesarean mode of delivery were observed and data was collected, it also Include the perinatal outcomes in the form of fetal distress, low Apgar score <7 at 5 minutes, neonatal asphyxia and admission to neonatal intensive care unit.[35],[4]

In my study the median age of the women was 31 years (28 to 34); 380, (27.7 %) were primigravida, and 721 out of 1367 (52.7%) were multigravida and 266 out of 1367 (19.4%) were grand multigravida. A total of 688 of 1367 patients delivered normal vaginal delivery during the study period, accounting for 50.3% of all deliveries, during this time, and had 277 births via caesarean sections. Among them 210 were emergency cesarean and 67 were elective cesarean sections for different obstetric indications.31babies (2.26%) had neonatal asphyxia, low a/s score in 201 and meconium stain liquor in 85 fetuses out of 1367 patients.

Another study, preterm delivery <37 and 34 weeks of gestation were 24.3% and 21.8% respectively; preterm premature rupture of membrane occurred in 20.7%. while the pregnancies experiencing pre-eclampsia and fetal growth restriction was 16.2% and 11.7% respectively. The cesarean delivery was 83.9%. perinatal death was 11.1% including 3 stillbirths and 2 neonatal deaths. A total of 34.2% fetuses suffered from fetal distress and 57.2% of newborns were admitted to the neonatal intensive care unit. The Apgar score <7 at 5 minutes was 6.1%.[31],[36]

In this study, the clinical and obstetric conditions were gestational hypertension (n=54), premature rupture of membranes (n=101), placenta previa (n=15), placental abruption (n=14) pre-eclampsia (n=7), eclampsia(n=5), gestational diabetes(n=15).

Occurrence of chorioamnionitis, intra uterine death, intra uterine growth restriction, shoulder dystocia, scar dehiscence, rupture uterus and procedures for severe post-partum bleeding were also observed.

Cesarean section was the most common type of operative delivery after normal vaginal delivery. 20.6% out of 1367 cases. Indications were mostly fetal distress, meconium stained liquor, previous operative delivery, and obstructed labour, primi breech and transverse lie.

In Portugal, total observed cases of about 80,000 pregnant women are exposed to the pandemic at different period of gestations, this shows an important challenge for individual and public health, to prevent infection in this population. They should be considered at higher risk.[37],[38.]

## CONCLUSION

This study conclude that maternal and fetal presentations were due to stress and anxiety, unavailability of antenatal checkup, routine OPDs and clinics. Unwillingness of patients for hospital treatment and preference of home delivery.

### *Recommendations*

Indirect impact of covid19 is also of great concern in pregnant patients in the form of good antenatal care, counselling in antenatal period and anxiety created by this pandemic, can affect care and management of obstetric patients. Care of obstetric patients' strategy should be identified in this covid pandemic. It would be desirable to implement a series of measures aimed at meeting the real needs of the population, in this case specially the pregnant women. These could involve:

1 Primary and community care

2 Public health services

3 New professional roles

4 Different clinical management strategies.

5 Adaptation of health care system in this pandemic covid-19

These five measures could help the obstetric patient in such circumstances as pandemic covid 19

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