*Original Article*

# EPIDEMIOLOGY AND SHORT-TERM OUTCOMES OF OBSTETRICAL SUSPECTED COVID-19 PATIENT: A CROSS-SECTIONAL STUDY IN A COVID DEDICATED HOSPITAL OF BANGLADESH

*Md. Moniruzzaman Mollick[1], Zakia Sultana[2], Nasrin Akhter[3]*

**ABSTRACT**

*Background:* COVID-19 is defiantly most notifiable killing infectious disease in twenty-first century that to bring unprecedented deadly toll in human life. Many developing and under developing countries faces great challenges to provide treatment facilities to their country people. Pregnant women are not beyond that exception. Besides, they experience absence of sensible humanity that never happened in the history of recent past. Many of them risking their lives and they suffered premature delivery, IUD, Still birth, PPH and even death for unnecessary delay to reach and receive treatment due to social stigma about COVID-19.

*Methods:* This study was conducted in Department of Obstetrics & Gynecology of COVID Dedicated Unit of Dhaka Medical College Hospital. 300 COVID-19 suspected obstetrical patients included conveniently. The study period was from July 2020 to August 2020. It was a prospective observational cross-sectional study. The study subjects were selected following convenience sampling technique.

*Results:* In this study majority of the patient (62.2%) were in the age group 20-29, where age limit was 14 to 45 years. Majority of the patients (55.7%) was either Illiterate or could sign only. Around half (51.0%) of the patients had monthly family income <10,000 BDT. Of all cases, 57.7% were multipara, 37.7% were primipara and 4.6% were grand multipara. Among all, 43.38% had VD and 56.62% had LUCS. Out of them 3.68% were COVID-19 positive cases. Of all, 51% lived in the urban, 29% in sub-urban, and 20% in the rural area. In this study, 1.80% deaths within suspected cases, 14.28% death among admitted positive cases and there was no death found among suspected turned to positive cases. Among all, 9.55% babies were IUD & Still born, 2.20% needed ICU, where 0.73% mothers were positive, and 88.23% babies were normal where 2.94% mothers were positive mother. In present study, 4.33% needed HFNC/Ventilator support who were critically ill, out of them COVID-19 positive cases were 1.33%. Off all 300 patients, case fatality rate (CFR) was 0.67% where among all positive cases it was 4.56%.

*Conclusion:* Pregnant woman being considered potentially vulnerable to viral infection. Physiological changes during pregnancy have a significant impact on different functional systems of body. COVID-19 also increases the risk and suffering many fold to pregnant women on different dimension of life. The ultimate outcome, most of the positive cases unencumbered themselves by the cost of their senseless suffering and life.

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1. *Commanding Officer, 85 Field Ambulance.*
2. *Assistant Professor, Department of Obstetrics & Gynecology, Dhaka Medical College Hospital, Dhaka.*
3. *Associate Professor, Department of Obstetrics & Gynecology, Dhaka Medical College Hospital, Dhaka.*

*Correspondence: Lt Col Md. Moniruzzaman Mollick, Email:sajal160@yahoo.com*

## INTRODUCTION

COVID-19 brought unprecedented challenges to all and in every aspect, especially beside the deadly human toll and the distraction of millions of people's lives. The economic damage is already significant and far reaching. The impacts of crises are never gender-neutral, and COVID-19 is no exception.

Economic crises hit women harder. Women who are poor and marginalized face an even higher risk of COVID-19 transmission and fatalities, loss of livelihood, and increased violence. Like most humanitarian crisis, this pandemic too magnifies existing inequalities, including that of gender inequality and thus has a disproportionate impact on

women. COVID-19 first discovered in December 2019 in Wuhan, China, global pandemic has spread to 216 countries, areas or territories with over 83 million cases and more than 1.8 million deaths reported worldwide as of January 2021.The first cases of COVID-19 in Bangladesh were reported on 8 March, 2020.

There are many unknowns for pregnant women during the corona virus disease 2019 (COVID-19) pandemic. Clinical experience of pregnancies complicated with infection by other corona viruses e.g., Severe Acute Respiratory Syndrome (SARS) and Middle Eastern Respiratory Syndrome, has led to pregnant woman being considered potentially vulnerable to severe SARS-CoV-2 infection. Physiological changes during pregnancy have a significant impact on the immune system, respiratory system, cardiovascular function, and coagulation. These may have positive or negative effects on COVID-19 disease progression.[1]

Most people (about 80%) recover from the disease without needing special treatment, and for the majority – especially for children and young adults – illness due to COVID-19 is generally minor. However, for some people it can cause serious illness. Around 1 in every 5 people who are infected with COVID-19 develops difficulty in breathing and requires hospital care. People who are aged over 60 years and people who have underlying medical conditions such as diabetes, heart disease, respiratory disease or hypertension are among those who are at greater risk. The virus can cause a range of symptoms, from ranging from mild illness to pneumonia.[2] The most common clinical symptoms of COVID-19 in the general population are fever (91%), cough (67%), fatigue (51%), and dyspnea (30%). Fever (68%) and cough (34%) are also the most common symptoms in pregnant women with COVID-19, with other symptoms including dyspnea (12%), diarrhea (6%), and malaise (12%). These clinical manifestations are similar to those in non-pregnant women.[3]

## METHODS

This study was conducted in Department of Obstetrics & Gynecology of COVID Dedicated Unit of Dhaka Medical College Hospital. 300 COVID-19 suspected obstetrical patients included conveniently. The study period was from July 2020 to August 2020. It was planned to collect data between 9 am to 9 pm seven days in a week. It was a prospective observational cross-sectional study. The study subjects were selected following convenience sampling technique. Data were compiled, edited and analyzed with SPSS version 20. Data were presented as frequency and percentage with range.

## RESULTS

Table-1: shows that out of 300 patients, 62.2% were in the age group 20-29 years followed by 24.3% in 30-39 years, 12.4% in 14-19 years. Beside, 57.7% were multipara, 37.7% were primipara and 4.6% were grand multipara. Majority (51.0%) had monthly family income <10,000 BDT followed by 30.3% had 10000-14999 BDT, 14.0% had 15,000- 24999 BDT and 4.7% had monthly family income 25000-70000 BDT. Among all the patients, majority (55.7%) were illiterate or only can sign followed by 34.0% had primary level qualification, 6.3 % had secondary level qualification and 3.0% had SSC level education. Among all the patients, 51% lived in the urban area followed by 29% in sub-urban, and 20% in rural area.

**Table-1: Demographic characteristics (n=300)**

| Characteristics | Findings |
|---|---|
| **Age group (in years)** | |
| 14 - 19 | 37 (12.4%) |
| 20 – 29 | 188 (62.6%) |
| 30 – 39 | 73(24.3%) |
| 40 – 45 | 2 (0.7%) |
| **Age range (in years)** | **10 – 45** |
| **Parity** | |
| Primipara | 113 (37.7%) |

| | |
|---|---|
| Multipara | 173 (57.7%) |
| Grand multipara | 14 (4.6%) |
| **Family income** | |
| Poor class | 153 (51.0%) |
| (<10,000 BDT/month) | |
| Lower middle class | 91 (30.3%) |
| (10,000-14,999 BDT/month) | |
| Middle class | 42 (14.0%) |
| (15,000- 24999 BDT/month) | |
| Higher Middle class | 14(4.7%) |
| (> 25,000 BDT/month) | |
| Range (BDT/month) | 5000 - 70000 |
| **Education** | |
| Illiterate/only can sign | 167 (55.7%) |
| Primary | 102 (34.0%) |
| Secondary | 19 (6.3 %) |
| SSC | 09 (3.0%) |
| HSC | 02 (0.7 %) |
| Graduate/Master | 01 (0.3 %) |
| **Residing place** | |
| Rural | 60 (20.0%) |
| Urban | 153 (51.0%) |
| Sub-urban | 87 (29.0% |

Table-II: Among all reported obstetrical cases, majority (92.7%) were suspected cases followed by 5.0% suspected turned to positive cases and 2.3% were admitted as positive cases.

**Table-1l: Distribution of obstetric patients by type of COVID -19 cases (n=300)**

| Type of cases | Frequency (%) |
|---|---|
| Suspected cases | 278 (92.7%) |
| Admitted as positive cases | 07 (2.3%) |
| Suspected turned to positive | 15 (5.0%) |

Table-lll: Shows that 45.33% were delivery cases while 54.66% were non-delivery cases. Among delivery cases, 43.38% were VD and 52.95% were LUCS

**Table-lll: Distribution of delivery cases and non-delivery cases(n=300)**

| Type of cases | Frequency (%) |
|---|---|
| Delivery cases | 136 (45.33%) |
| Non-Delivery cases | 164 (54.66%) |

| Type of Procedure | Suspected cases Positive cases |
|---|---|
| VD (Vaginal Delivery) | 59 (43.38%) 00 (0%) |
| LUCS (Lower Uterine Cesarean Section) | 72 (52.95%) 05 (3.68%) |

Table-IV: Shows that 1.80% death occurred within suspected cases, 14.28% within admitted as positive

cases, and there was no death case found among suspected turned to positive cases.

**Table-IV: Comparison of death between suspected and positive COVID-19 patients (n=300)**

| Type of cases | Frequency (%) Death (%) | HFNC/ Ventilator |
|---|---|---|
| Suspected cases | 5(1.80%) | 9(3.23) |
| Admitted as Positive cases | 01(14.28%) | 3(42.86) |
| Suspected turned to positive | 00 (0%) | 1(6.67) |

Table-V: Shows among all delivery cases 9.55% babies were IUD & Still born, 2.20% babies of suspected mothers and 0.73% positive mothers needed ICU, while and 88.23% babies of suspected mothers 2.94% of positive mothers were normal.

**Table-V: Comparison of IUD & Still born, ICU need and delivery of normal baby between suspected and positive COVID-19 patient (n=136)**

| Status of baby | Suspected cases | Positive cases |
|---|---|---|
| IUD & Still born | 9.55% | 0.0% |
| ICU needed | 2.20% | 0.73% |
| Normal baby | 88.23% | 2.94% |

**DISCUSSION**

The cross-sectional study was carried out in Dhaka Medical College Hospital, Dhaka. The study was conducted to know the short-term outcomes of obstetrical suspected COVID-19 patients which is one of the COVID dedicated hospital in Bangladesh. The study may be help the future researchers for further study as this study.

Out of 300 suspected and positive cases, majority of the patient i.e., 188(62.2%) were in the age group 20-29 years followed by 73 (24.3%) in 30-39 years, 37 (12.4%) in 14-19 years, 2 (0.7%) in 40-45 years. According to WHO, up to 03 January 2021 in Bangladesh, among the reported cases 26.8% cases were confirmed in people between 30 and 39 years old, 19.7% in the age group of 40 to 49, 18.2% in 20 to 29 years and 16.5% in the age group between 50 and 59

years old, 12.5% in the age group 60 and above and 6.3% in the age group below 20 years.[4]

Among all the patients, majority i.e. 167 (55.7%) Illiterate/only can sign followed by 102 (34.0%) primary level qualification, 19 (6.3 %) had secondary level qualification, 09 (3.0%) had SSC level education, 02 (0.7 %) had HSC level education, 01 (0.3 %) had graduate/master's degree level qualification. Majority i.e. 153 (51.0%) had monthly family income <10,000 BDT followed by 91 (30.3%) had 10000-14999 BDT, 42 (14.0%) had 15,000-24999 BDT and 14(4.7%) had monthly family income 25000-70000 BDT. Of all cases, 173 (57.7%) Multipara, 113 (37.7%) Primipara and 14 (4.6%) Grand Multipara. Among all 136 delivery cases 59 (43.38%) had VD and 77 (56.63%) had LUCS, out of them 05(3.68%) positive cases.

In this study, age range is 14 to 45 years and all are obstetrical patients. Among all 300 cases, 05 (1.80%) deaths recorded among 278 suspected cases, 01 (14.28%) death among Positive during admission and there is no death case found among Suspected turned to positive cases. In other words, 01 (4.56%) death out of 22 (7.33%) positive cases. So in this study, Case Fatality Rate (CFR) is 4.56% among all COVID-19 positive pregnancy cases. But up to September 2020, overall Case Fatality Rate (CFR) in Bangladesh was 1.11% among all female positive cases. About 40% of cases aged over 60 years were four times more likely to die than the age group of 31–40 years.[5] This variation of the result may be due to effect of COVID-19 with pregnancy related complication, delayed receiving treatment and the patients admitted in this tertiary level hospital are relatively more complicated than other patient, as most of them are referred from other hospital. In this study, over all Case Fatality Rate (CFR) is 0.67% among all 300 cases. As of 03 January 2021 in Bangladesh, the highest death rate (31.5%) was reported in the age group of 60 to 69 years old, 22.4% in the age group of 70 to 79, 21.2% in 50 to 59 years, 9.4% in the age group 80 and above, 8.7% in 40 to 50 and remaining 6.8% in the age group below 40 years. Male represents 71% and 76% of the of total reported confirmed COVID-19 cases and deaths respectively.[6]

According to Int J Med Sci 2021, the severity of disease, COVID-19 is classified as being mild (symptomatic or mild pneumonia), severe (tachypnea 30 breaths/min, or oxygen saturation ≤93% at rest, or PaO2/FiO2 <300 mmHg), and critical (respiratory failure requiring endotracheal intubation, shock, or other organ failure that requires intensive care), accounting for 81%, 14% and 5% of cases in the general population, respectively. World Health

Organization reported a large cohort study of 147 pregnant women with COVID-19, only 8% and 1% were severely and critically ill, respectively.[6] In this study among all 300 patients, 13(4.33%) needed HFNC/Ventilator support who are critically ill, out of them COVID-19 positive case is 4(1.33%). So out of 22 positive pregnancy cases 4 needed HFNC/Ventilator support which is 18.18% among all positive patients.

Pregnancy is a condition in which her immune system is risk to viral infections, and the morbidity is increased within seasonal influenza. Therefore, the COVID-19 epidemic may additionally have serious penalties for pregnant women. There seems to be some hazard of untimely rupture of membranes, preterm delivery, fetal tachycardia and fetal misery when the contamination happens in the 1/3 trimester of pregnancy.[7] In present study, off all 136 delivery cases 13 (9.55%) baby born as IUD & Still, 03 (2.20%) needed ICU support where 01 (0.73%) is COVID-19 positive mother and 120 (88.23%) normal baby where COVID-10 positive mother is only 04 (2.94%).

## CONCLUSION

Pregnant woman has considered potentially vulnerable to viral infection. Physiological changes during pregnancy have a significant impact on different functional systems of body. COVID-19 also increases the risk and suffering many fold to pregnant women on different dimension of life. The ultimate outcome, most of the positive cases unencumbered themselves by the cost of their suffering and life.

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