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Unexplained IUD Having Covid-19 Infection In Bangladesh

Nafisa Anwar Mariana[1], Ayesha Siddika[2], Taslima Akter[3], Mosst. Khadiga Akter[4], Sabina Akhter[5], Nasima Akther[6]

[1]*Registrar (Obst & Gynae), Shaheed Taj Uddin Ahmad Medical College Hospital, Gazipur, Bangladesh*
[2]*Registrar (Obst & Gynae), Shaheed TajUddin Ahmad Medical College Hospital, Gazipur, Bangladesh*
[3]*Resident Surgeon (Obst & Gynae), Shaheed Taj Uddin Ahmad Medical College Hospital, Gazipur, Bangladesh*
[4]*Medical Officer (Obst & Gynae), Mugda Medical College Hospital, Dhaka, Bangladesh*
[5]*Registrar (Obst & Gynae), Sylhet M.A.G Osmani Medical College Hospital Sylhet, Bangladesh*
[6]*Assistant Professor (Obst & Gynae), Sylhet M.A.G Osmani Medical College, Sylhet, Bangladesh*

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ABSTRACT

Introduction: Coronavirus disease 2019 is an emerging disease with a rapid increase in cases and deaths since its first identification in Wuhan, China, in December 2019. This pandemic in Bangladesh is part of the worldwide pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). In our country at present affection and number of deaths were getting higher every day. Along with rest of the population huge numbers of pregnant women were also affected. **Objective:** To assess the frequency of IUDs and their possible causes since the Covid-19 pandemic. **Material and Methods:** This cross-sectional study was conducted at the Department of Obstetrics and Gynecology, Shaheed Taj Uddin Ahmad Medical College Hospital, Gazipur, Bangladesh from January to July 2022. A total of 64 pregnant women having age 29-37 were selected for this study. The details of presenting complaints, history, menstrual history and examination findings, per vaginal examination findings, mode of delivery, and fetal outcomes, and investigation reports were recorded. The relevant details about IUDs like age, parity, social status, booked status, comorbidities, and social status were entered into a Performa and the data analyzed. **Results:** Out of 64 hospitalised covid positive pregnant women were studied. 84.4% women were above 25 years and 78% were multigravid. 19% had fever on admission and 59% had H/O fever. 22% had respiratory distress ranging from mild to severe on admission. During the hospital stay 28.2% needed ICU. The leading cause(s) for IUDs in Pregnancy during the Covid-19 were pandemic Induced Hypertension and Gestational Diabetes Mellitus, which cumulatively account for 44.4% cases but 33.3% cases had no co-morbidities and still ended up in an Intra-Uterine death, which may or may not have been influenced by a Covid-19 infection. Out of which 15(11.8%) had PIH, 14(11.04%) had Pre-Eclampsia, 32 (25.04%) had GDM, 26 (20.06%) had PIH plus GDM and 21 32.97% had no known co-morbidities. Pregnancy Induced Hypertension and Gestational Diabetes Mellitus and 33.3% had no comorbidities. 57.9% women delivered before completion of 37 weeks, among them. 26.3% were before 34 weeks. 79% women had delivery by caesarean section and 10.5% had hysterotomy. In this study maternal mortality was 21% and 31.6% was perinatal mortality. There was no vertical transmission to fetus. **Conclusion:** The leading cause(s) for IUDs in Pregnancy during the Covid-19 were pandemic Induced Hypertension and Gestational Diabetes Mellitus, which cumulatively account for 44.4% cases but 33.3% cases had no co-morbidities and still ended up in an Intra-Uterine death, which may or may not have been influenced by a Covid-19 infection. From the looks of it, Non-clinical reasons seem to have a higher probability of increasing the IUD rate but clinical effects of the Covid-19 infection can also not be ruled out completely, further studies are required into the pathogenesis and the effect of Covid-19 on pregnancy.

Keywords: Fetal death, Pregnancy Induced Hypertension, Covid-19.

Corresponding Author: Nafisa Anwar Mariana, Registrar (Obst & Gynae), Shaheed Taj Uddin Ahmad Medical College Hospital, Gazipur, Bangladesh.

I. INTRODUCTION

Coronavirus disease 2019 is an emerging disease with a rapid increase in cases and deaths since its first identification in Wuhan, China, in December 2019. This pandemic in Bangladesh is part of the worldwide pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). In our country at present affection and number of deaths are getting higher every day. Along with rest of the population huge number of pregnant

women is also affected. It transmits through respiratory droplets and small airborne particles mainly and perinatal transmission is not well understood [1-3]. On 12th March 2020, based on more than 20,000 confirmed cases and almost 1000 deaths in the continent of Europe, the World Health Organization announced the new coronavirus outbreak pandemic. Since then the world has been battling this disease to date in all walks of life. No one has been spared from the direct or indirect effects of this disease. The biggest challenge has been faced by doctors who have been made to handle another disease on top of pre-existing medical conditions of their respective patients. However, a previous report said pregnant women usually developed a mild form of COVID-19 despite a few cases for acute form with maternal morbidity and mortality [1,2,3,4,5]. A pregnant woman is immunologically weak and has a unique immunologic state where the maternal immune system tolerates paternally derived fetal antigens that lead to increase susceptibility to infection especially Pneumonia [3-6]. Physiological and Mechanical Changes enhance infection rate, especially Respiratory tract infection. Early pregnancy is a challenging and vulnerable period and affects embryogenesis and fetal organ development. Obstetricians who have already had their hands full with dealing with two lives now need to look into this new disease as well to assess the maternal and fetal outcomes. All the fetal demise cases were ≥11 weeks of gestational age determined clinically with the help of the earliest Ultrasound (US) scan. At present, there are limited resources for the guidance of the Critical Care Management of Pregnant patients with COVID-19 infection. Also, the miscarriages or a fetal demise due to COVID- 19 was not established yet due to very few reports on this particular issue [1, 7-10]. Thus, it is very important to have more evidence-based studies to establish the interrelationship between COVID-19 infection during pregnancy and the risk of miscarriages and fetal deaths for proposing suitable interventions. Abortion was confirmed in the same way with laboratory-confirmed COVID-19 via Real-Time Polymerase Chain Reaction (RT PCR) assay of maternal nasal swab specimens. In this study, all the possible causes of abortion such as fetal malformations, placental abruption, placenta previa, preeclampsia, diabetes, auto-immune disorders, maternal trauma, etc. were excluded other than COVID-19 infection. This mainly shows improvement in the healthcare facilities provided and a better understanding of feto-maternal monitoring especially those mothers with co-morbidities. There are a number of causes that can affect the fetus during the intrauterine life and can lead to fetal death, recently the world has seen a Pandemic rise exponentially and become a risk factor and a possible complicating factor in pre-existing health conditions or conditions like pregnancy.

II. MATERIALS AND METHODS

This cross-sectional study was conducted at the Department of Obstetrics and Gynecology, Shaheed Taj Uddin Ahmad Medical College Hospital, Gazipur, Bangladesh from January to July 2022. A total of 64 pregnant women having age 29-37 were selected for this study. The study was approved by the Ethical Committee and written informed consent was taken from every patient. The details of presenting complaints, history, menstrual history, examination findings, per vaginal examination findings, mode of delivery, and fetal outcomes, and investigation reports were recorded. The parity of patients, booking status, and associated comorbidities were assessed and entered in pre- designed performa along with a demographic profile of the patients. All the collected was entered in SPSS version 20 and analyzed. Mean and SD was calculated for numerical data and frequencies and percentages were calculated for categorical data.

III. RESULTS

Out of 64 hospitalised covid positive pregnant women were studied. 84.4% women were above 25 years and 78% were multigravid. 19% had fever on admission and 59% had H/O fever. 22% had respiratory distress ranging from mild to severe on admission. During the hospital stay 28.2% needed ICU. The leading cause(s) for IUDs in Pregnancy during the Covid-19 were pandemic induced hypertension and gestational diabetes mellitus, which cumulatively account for 44.4% cases but 33.3% cases had no co-morbidities and still ended up in an intra-uterine death, which may or may not have been influenced by a Covid-19 infection. Out of which 15(11.8%) had PIH, 14(11.04%) had Pre-Eclampsia, 32 (25.04%) had GDM, 26 (20.06%) had PIH plus GDM and 21 32.97% had no known co-morbidities. Pregnancy Induced Hypertension and Gestational Diabetes Mellitus and 33.3% had no comorbidities. 57.9% women delivered before completion of 37 weeks, among them. 26.3% were before 34 weeks. 79% women had delivery by cesarean section and 10.5%

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had hysterotomy. In this study maternal mortality was 21% and 31.6% was perinatal mortality. There was no vertical transmission to fetus.

Table-1: Demographic characteristics of admitted obstetric patients (N=64)

Age	n	%
21-25yrs	10	15.6%
26-30yrs	22	34.4%
31-35yrs	22	34.4%
36-38yrs	10	15.6%
Gravida		
Primi	14	22%
Multi	50	78%
Antenatal	62	97%
Postnatal	02	3%
Period of gestation on admission		
1st trimester	04	6.5%
2nd trimester	12	19.4%
3rd trimester	46	74.1%
Period of gestation at delivery		
<28 wks	4	10.5%
28-34 wks	6	15.8%
34-37 wks	12	31.6%
>37wks	16	42.1%
Mode of delivery		
VD	4	10.5%
CS	30	79%
Hysterotomy	4	10.5%
Primi breech	2	6.7
Primi PROM with CPD	2	6.7%
H/O previous CS	26	86.6%
Postnatal period		
Eventful	12	31.6%
Uneventful	26	68.4%

Table-2: Patients condition on admission (N=64)

Fever around $100^{O}F$	12	19%
H/O fever	38	59%
Without H/O fever	14	22%
Mild respiratory distress	04	6.3%
Moderate respiratory		
Distress	04	6.3%%
Severe respiratory distress	06	9.4%
Without respiratory distress	50	78%
Only cough	16	25%

Table-3: Maternal Mortality (N=38)

Maternal Mortality	Frequency	Percent
CS	6	-
VD	2	-
Total	8	21%

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Table-4: Disease pattern (N=64)

Disease	Frequency	Percent
Valid PIH	07	11.8
GDM	16	25.0
PRE- ECLAMPSIA	07	11.0
PIH+GDM	13	20.1
No	21	32.0
Total	64	100.0

Table: Perinatal outcome (N=38)

Perinatal outcome	Frequency	Percent
IUD	4	10.5%
Neonatal mortality	3	7.8%
Total	7	18.4%

IV. DISCUSSION

To be able to analyze this study in the best possible way there needs to be an understanding of how frequently stillbirths had been happening in this world before the Covid-19 Pandemic. There were a number of factors that influence the stillbirth rate. We can classify them as clinical factors and non-clinical factors. Maternal and fetal health would fall into clinical factors while other variables like socioeconomic status, access to skilled healthcare, general awareness, etc. would come under non-clinical factors. Developed countries have achieved low fetal and intrauterine mortality [11,12,13]. Hence, whatever intrauterine deaths that occur in these countries were mostly attributed to non-preventable reasons or close calls and near misses [14]. Overall the stillbirth rate of the developed world had been much less than the developing world. According to WHO Estimated stillbirths that occur intrapartum are seen as 10% in developed countries to 59% in South Asia [15]. Maternal mortality rate in our country was 176 deaths/100,000 live births (2015 est.) [16]. But now in pandemic disease situation, in our study the maternal mortality rate was high, that is 21% among the delivered women. Again, the perinatal mortality rate was 44 per 1000 pregnancies in 2014 in Bangladesh [17], but in the covid positive pregnant women the fetal outcome was not good. In our study the perinatal mortality was 31.6%. And Neonatal Mortality Rate in Bangladesh in 2017, was 18.4 deaths per 1,000 live births [18], whereas in our study it was high, 15.8% intrapartum stillbirths in developing countries may represent inadequate access to essential obstetric care and inadequate care [19]. Possible factors being, lack of facilities, limited access to specialized healthcare (although we at Shalamar hospital have tried to neutralize that variable to some extent), lack of awareness, nonchalant attitude towards diseases, and feto-maternal health by extension. Similar problems have also been seen in our neighboring country where most of the population is not aware of the need for antenatal follow-up [1,21,22]. In a study done in a New York hospital, it is seen among 33 Corona affected pregnant women only 4 women showed symptoms (12%), but others were asymptomatic [23]. In our study also on admission only 19% had fever, but 59% had H/O fever and 78% had no respiratory distress, other 22% had respiratory distress. In a study published preprint in the non-peer reviewed journal med Rxiv in April 2020, which was a systemic review covering 23 studies from various countries mostly from China, finds that most of the pregnancies (almost 9/10) ended in delivery by caesarean section and Preterm delivery occurred in 23%. Many women had other medical conditions as well, such as: diabetes and hypertensive disorders of pregnancy (11% and 9% respectively) [24]. In another systemic review of Nineteen studies of China, Canada, USA having 41 hospitalized covid positive pregnant women show that the most common adverse pregnancy outcome was preterm birth <37 weeks, occurring in 41.1% of cases, while the pooled proportion of perinatal death was 7.0%. None of the 41 newborns assessed showed clinical signs of vertical transmission [25]. The available data on pregnant patients with COVID-19 do not provide a clear verdict on the effect of the infection on feto- maternal health, the outcome thus far was favorable but erring on the side of caution was still advised, The number of Preterm deliveries has gone up which was mostly associated with elective interventions but despite the interventions, a trend toward spontaneous prematurity was present [26].This in addition to any pre-existing maternal conditions (PIH, GDM) can have serious

implications on fetal life. In our study, we saw 23.58% of cases undergo placental abruption with no pre-existing maternal conditions. Evidence of placental abnormalities associated with maternal vascular malperfusion in the absence of any other risk factors like Hypertension has also been seen [27].This makes sense since a lot of patients having Covid-19 infection have been seen to develop DIC [28]. Almost one-third of the asymptomatic women became symptomatic during their hospitalization. Higher rates of preterm birth and cesarean birth were found among pregnant women who delivered with severe and critical COVID-19. Cesarean birth was the mode of delivery for 52.4% of women with severe and 91.7% with critical COVID-19. The singleton preterm birth rate among severe patients was 18.0% and 58.3% among critical COVID-19 patients; which is higher than the national average (10% in 2019) and reflects the fact that some women needed to be delivered based on how well the mother was able to breathe. Nearly all newborns tested negative for SARS-CoV-2 immediately after birth (97.5%). The above findings were similar to us. But in their study there were no maternal death, which was contrary to us. In the third mortality, the patient was admitted already in a critical condition, which she could not recover and died 2 hrs. after vaginal delivery. Regarding the fourth death, the patient had respiratory distress from the admission and distress increased more after delivery and died 48 hrs. after CS. The second and fourth patient needed ICU which they could not get. According to RCOG, [29] a recent report from a UK study showed that so far all pregnant women who were affected adversely were after 28 weeks, which emphasizes the point that women need to be more careful during their third trimester since their health can get worse if they contract the virus during this time leading to premature delivery. RCOG guidelines encourage pregnant mothers to maintain social distancing, take extra care of their health avoid public gatherings and avoid going into crowding places. Another very important message they have given is regarding breastfeeding which says that there has been no significant evidence regarding the spread of the virus from breast milk and they feel that the benefits of breast milk outweigh the possible risks (which are not yet fully understood).

V. CONCLUSION

In our study, we have seen that the fetal death rate has gone up as compared to the last year from 28.57 to 41.99 per 1000 live births. The majority of pregnant women hospitalized with Covid-19 were in third trimester, indicating the need for continued social distancing in later pregnancy. The maternal outcome was not good. And prematurity leading to high perinatal mortality is a great concern. So, for the infected mothers early medical supervision and availability of ICU in critical condition are needed for better pregnancy outcome. If these variables can be controlled by creating awareness and encouraging people to have regular follow-ups even over the phone can make a huge difference in making the outcome of the pregnancy favorable.

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