

PREGNANCY OUTCOMES IN WOMEN WITH HISTORY OF COVID-19

Nermeen Saad Elbeltagy, Helmy Helmy Abdelsttar, Sara Hazem Hassan Eid, Mohamed Hamdy Basiony Darweesh

Department of Obstetrics and Gynecology, Faculty of Medicine - University of Alexandria

INTRODUCTION

With its initial appearance in Wuhan, China, in December 2019, the coronavirus disease-related respiratory infection (COVID-19) has rapidly spread among people all over the world. Due of its detrimental effects on global health, the World Health Organization (WHO) considered this disease to be a pandemic in March 2020.

The severe acute respiratory syndrome coronavirus (SARS-CoV) and the Middle East respiratory syndrome coronavirus (MERS-CoV) outbreaks have proved that pregnant females as well as their fetuses are exposed to adverse outcomes, including high rates of intensive care unit (ICU) admission and case fatality.

Physiological changes occurring during pregnancy such as the increased transverse diameter of the thoracic cage as well as the elevation of the diaphragm can expose the mother to severe infections because of her decreased tolerance for hypoxia.

Furthermore, vasodilation and changes in lung capacity can cause mucosal edema and an increase in upper respiratory tract secretions. In addition, the increased susceptibility to infection is enhanced by changes in cell-mediated immunity.

AIM OF THE WORK

To study the effect of COVID-19 on pregnant females admitted to El-Shatby Maternity University Hospital regarding maternal antepartum, intrapartum and postpartum clinical outcomes as well as their respective neonatal outcomes.

PATIENTS AND METHODS

Study design: A retrospective survey was adopted in order to investigate the following: Maternal characteristics and associated health conditions of COVID-19 positive patients.

The severity of their conditions and time of infection (first or second or third trimester)

The different maternal outcomes including:

- Antepartum outcomes as Preeclampsia, antepartum admission (defined as hospital admission for obstetrical or non-obstetrical indications for inpatient management for > 48 h), ICU admission, need for mechanical ventilation, supplemental oxygen, preterm delivery (defined as delivery before 37-week gestation), chorioamnionitis, intrauterine fetal death, etc...
- During labor as mode of delivery (cesarean or vaginal delivery), intrapartum hemorrhage, etc...
- Postpartum outcomes as postpartum hemorrhage, wound sepsis, etc...

RESULTS

Table 1: Distribution of the studied patient according to their maternal outcomes

| Maternal outcomes | The studied patients (n=280) | |
|---------------------------------------|------------------------------|------|
| | no. | % |
| No adverse outcomes | 137 | 48.9 |
| Cesarean section | 41 | 14.6 |
| Pre-term labor | 32 | 11.6 |
| Premature rupture of membranes (PROM) | 16 | 5.7 |
| Post-partum hemorrhage | 15 | 5.4 |
| Preeclampsia | 14 | 5.0 |
| Placental abruption | 12 | 4.3 |
| PROM+ pre-term labor | 4 | 1.4 |
| Placental abruption+ pre-term labor | 2 | 0.7 |
| Pre-eclampsia+ Preterm labor | 2 | 0.7 |
| Abortion | 1 | 0.36 |
| Intra-uterine fetal death | 1 | 0.36 |
| Venous thromboembolism | 1 | 0.36 |
| Chorioamnionitis | 1 | 0.36 |
| Pre-eclampsia+ PROM | 1 | 0.36 |
| Maternal death | 0 | 0.0 |

Table 1 shows that the most common maternal outcomes were pre-term labor (11.6%) followed by premature rupture of membranes (5.7%), post-partum hemorrhage (5.4%), preeclampsia (5.0%) and placental abruption (4.3%). In addition, Cesarean section was observed in 14.6% of the studied patients.

Table 2: Distribution of the studied patients according to the neonatal outcomes of their neonates

| Neonatal outcomes | The studied patients (n=278) | |
|--------------------------|------------------------------|------|
| | no. | % |
| NICU admission | 45 | 16.1 |
| Respiratory distress | 18 | 6.5 |
| Neonatal death | 0 | 0.0 |
| Neonatal birth weight | | |
| <2500 g | 28 | 10.0 |
| 2500-4000 g | 239 | 85.4 |
| >4000g | 11 | 3.9 |
| APGAR score in 5 minutes | | |
| <7 | 60 | 22.1 |
| ≥7 | 218 | 77.9 |

Table 2 indicates that 16.1 % of neonates of the studied patients were admitted to NICUs and 6.5% of them had respiratory distress with no observed neonatal deaths.

The majority of neonates (85.4%) had a birth weight of 2500- 4000g (normal range). In addition, the great majority of them (77.9%) had an APGAR score of equal or more than 7 in 5 minutes.

Important two Pictures:

Figure 1 shows that three quarters of the cases (75.0%) were diagnosed based on presence of symptoms suggestive of COVID-19, laboratory tests (other than PCR) and radiological findings while the rest (25.0%) were confirmed by positive PCR test results.

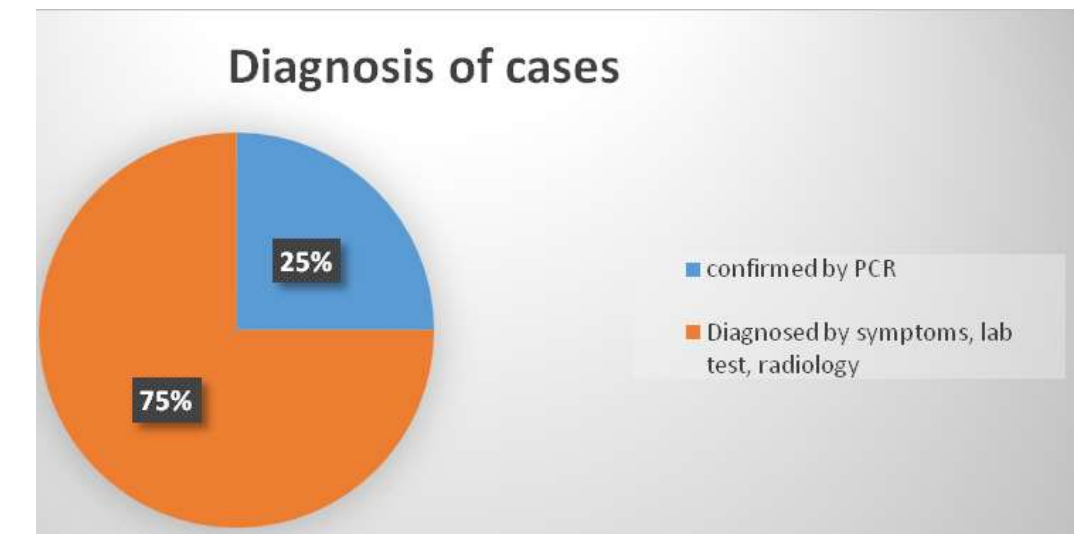


Figure 1: Distribution of the studied patients as regard diagnosis

CONCLUSION

The following could be concluded from the present study:

- The most commonly observed comorbidities before pregnancy were diabetes, cardiac disorders/ chronic hypertension, asthma, thyroid disorders and chronic obstructive lung diseases (non-asthma).
- The most commonly observed comorbidities during pregnancy were anemia followed by gestational diabetes and pre-eclampsia/ gestational hypertension.