Covıd-19 and Pregnancy: Single Center Experience With 167 Pregnancies

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Crossref

Abstract

Purpose: To describe prevalence, presenting symptoms and severity of COVID infection in our pregnant population. To determine the association between COVID infection and adverse pregnancy outcomes such as preclampsia and preterm birth. To discuss the effect of the disease on cesarean section rates.

Methodology: This study included retrospective analysis of 167 pregnancies complicated with COVID infection in a single center between March 2020 and April 2022.

Findings: Prevalence of COVID infection was 18,1% (167/925) in our population. Most common presenting symptom was fever with a rate of 61,1% (102 of 167 pregnancies). Second most common symptom was cough with a rate of 52,7% (88 of 167 pregnancies). Three patients have been hospitalized for severe infection (1.8%). None of these patients required admission to the intensive care unit or mechanical ventilation. Eight patients delivered before 37 weeks of pregnancy resulting in a preterm rate of 4,8%. None of these 167 pregnancies were complicated with preclampsia. Forty-two of the 167 deliveries were performed by vaginal route, resulting in a cesarean section rate of 74,9%. This rate varied between 35 to 50% during years in our center before pandemics.

Recommendation: Our findings do not match with previously published data, and reveal a more benign course during pregnancy. These results are expected to decrease the anxiety of pregnant women diagnosed with COVID and shed light to management of future infections.

Keywords: _COVID, Pregnancy, Prevalence, Preterm, Preclampsia, Cesarean_

1.0 INTRODUCTION

Coronavirus disease 2019 (COVID 19) is caused by acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and was declared a global pandemic in March 2020 (1).

Pregnant women may be particularly susceptible to COVID 19 for two reasons. First, physiologic changes of pregnancy involve cardiorespiratory system and alterations such as decreased functional capacities of the lungs might cause serious respiratory problems during infection. Second, pregnancy is a state of altered immunologic system. Cellular immunity is supressed to prevent rejection of the embryo and fetus (2). Our study focuses on the prevalence of COVID infection in our pregnant population, severity of the disease and also on presenting symptoms during pregnancy.

This study also aimed to determine the association between COVID-19 infection and adverse pregnancy outcomes such as preclampsia and preterm birth. The effect of the disease on cesarean section rates is also discussed.

Most of previously published data revealed a more aggressive course during pregnancy, increased rates of morbidity and mortality among pregnant women compared to matched normal population and significantly increased rate of pregnancy complications such as preterm birth, preclampsia and stillbirth. This study aimed to test this hypothesis and findings in our pregnant population.

2.0 METHODOLOGY

This study included retrospective analysis of all pregnancies ending up with live birth in a single center between March 2020 and April 2022. During these 25 months, a total number of 925 deliveries were performed by a single obstetrician. 167 of these pregnant women were found to be infected with COVID either during pregnancy or at their admission to the hospital for delivery.

A questionnaire including 20 questions were applied to all of these 167 pregnant women by phone calls. Main questions were about the gestational week at which diagnosis was made, presenting symptoms of the infection, severity of the disease, gestational week at which labor began, birthweight of the newborn and route of delivery. Numerical analysis and percentage values were used for analysis.

3.0 FINDINGS

This study included all the pregnancies that ended up with live births in our center between March 2020 and April 2022. A total of 925 deliveries were performed by single obstetrician during 25 months. 167 pregnant women were diagnosed with COVID infection either during pregnancy or at admission to the hospital for delivery. Prevalence of COVID infection was 18,1% (167/925) in our population.

Fifty-seven of these 167 (34,1%) COVID infections occurred during first trimester of the pregnancy. 48 of the 167 infections (28,7%) occurred during the second trimester. And the remaining 62 cases were encountered during the last trimester (37,1%).

Most common presenting symptom was fever with a rate of 61,1% (102 of 167 pregnancies). Second most common symptom was cough with a rate of 52,7% (88 of 167 pregnancies). Third most common symtom was fatigue with a rate of 37,1% (62 of 167 pregnancies). Other less common symptoms were anosmia, myalgia, chest pain, sore throat and headache.

Three patients have been hospitalized for severe infection (1.8%). None of these patients required admission to the intensive care unit or mechanical ventilation. 2 patients were hospitalized during second trimester and the third patient during the last trimester. None of the 167 COVID infections ended up with mortality.

Eight patients delivered before 37 weeks of pregnancy resulting in a preterm rate of 4,8%. One of these 8 preterm deliveries occurred at 32 gestational weeks. Other preterm deliveries occurred between 35 and 37 gestational weeks. Low birthweight (<2500 grams) were seen in 12 newborns mostly owing to preterm deliveries and twin pregnancies. None of these 167 pregnancies were complicated with preclampsia.

Forty-two of the 167 deliveries were performed by vaginal route, resulting in a cesarean section rate of 74,9%. This rate varied between 35 to 50% during years in our center before pandemics.

None of the newborns were diagnosed with COVID infection.

4.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Discussion

Early during COVID-19 pandemic, many questions arose regarding the effects of the virus on pregnant persons, including whether pregnancy increased susceptibility to SARS-CoV-2 infection, whether pregnant persons were more likely to have severe disease, and whether SARS-CoV-2 infection increased the risk of adverse pregnancy and neonatal outcomes.

Although physiological, mechanical and immunologic alterations in pregnancy could potentially affect susceptibility to COVID-19 during pregnancy, limited data are available to address this issue. US Centers for Disease Control and Prevention (CDC) compared infection rates between pregnant women and reproductive age non-pregnant women. Infection rate was found to be 9% for pregnant population and 5% for reproductive age women. Our data revealed an infection rate of 18% for our pregnant population. This higher prevalence can be explained by higher infection rates in Turkiye during pandemics as compared to Europe and USA. Also, our data revealed that infection rates were similar in different trimesters of the pregnancy.

Several studies support that COVID-19 causes more severe disease during pregnancy. Some of the best data come from the CDC's COVID-19 surveillance system (3). Pregnant women were found to be 3 times more likely to be admitted to the intensive care unit, 2.9 times more likely to require invasive ventilation and 1.7 times more likely to die. The increased risk for disease severity during pregnancy may be owing to mechanical changes such as decreased lung volume as the fetus grows, immunologic changes, and an increased risk for thromboembolic disease. However, our data did not support these findings, with only 3 pregnant women among 167 who required hospitalization and none of these 3 pregnant women required admission to intensive care unit or invasive ventilation.

Despite the evidence that SARS-CoV-2 infection during pregnancy is associated with a number of adverse pregnancy outcomes such as preeclampsia, preterm birth and stillbirth is accumulating (4), our data did not support this finding with a preterm birth rate of only 4,8%, a rate similar to the normal pregnant population. And also, no preeclampsia cases were detected in our pregnant population with infection.

In general, COVID is not an indication for delivery and should neither alter the timing nor the mode of delivery. However, during the 25 months of pandemics, we reached a cesarean section rate of almost 75% which is obviously higher to our rates before pandemics (35-50%). This increased rate can be mostly explained by fear of both patients and physicians.

As for all infectious agents, the question whether SARS-CoV-2 can cross the placenta has arised as the virus first emerged. Intrauterine transmission appears to be rare according to data (5). The best explanation is as follows: for the intrauterine transmission of a viral pathogen to ocur, the pathogen needs to reach and cross the placenta (6), and SARS-CoV-2 infection is not associted with high levels of viremia (7). Our data is consistent with these previous data, and none of the newborns were diagnosed with COVID infection.

Conclusıon

As we approach the end of SARS-CoV-2 pandemics, much has been learned about the effects of the infection during pregnancy. But still, data is debatable and many questions remain. As physicians working in a country with considerably high number of cases, we reached to an important level of experience. Although our data does not reveal as serious results as previously published reports, we think they are valuable to improve our planning and response to emerging infections in the future.

Recommendatıons

Our findings do not match with previously published data, and reveal a more benign course during pregnancy. These results are expected to decrease the anxiety of pregnant women diagnosed with COVID and shed light to management of future infections.

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