Zagazig University Medical Journal
www.zumj.journals.ekb.eg
Volume 29, Issue 1, January 2023 https://dx.doi.org/10.21608/zumj.2021.60385.2115
Manuscript ID ZUMJ-2101-2115 (R3)
DOI 10.21608/zumj.2021.60385.2115

Covid 19 And Maternal Outcome; Case Series Study

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Submit Date	2021-02-01 16:50:13
Revise Date	2021-03-06 19:10:07
Accept Date	2021-03-23 04:53:58

ABSTRACT

Background: COVID 19 is the pandemic disease recently attack the earth populations. The aim of this study is to evaluate the maternal outcome in COVID 19 positive pregnant female. **Methods:** The study (retrospective study) was done between March 2020 till June 2020 at Zagazig University, Obstetrics and gynecology emergency hospitals. From patients' files: All patient subjected to history taking, general examination, routine laboratory evaluation, ultrasound evaluation. For all cases, abdominal ultrasonography was performed to measure in addition to chest X ray, CT chest, nasopharyngeal swap PCR for COVID 19. Evaluation of cases for maternal outcome. A total of 7 patients presented with suspected criteria of COVID 19 and confirmed by naso-pharyngeal swap and PCR testing. Main outcome measures: maternal outcome regarding mortality, morbidity or recovery. **Results:** form 7 pregnant women presented with COVID 19 manifestation; 4 cases with severe COVID19 pneumonia, 2 moderate COVID19 pneumonia and one with mild COVID pneumonia. 6 patients delivered by caesarian section and 1 patient delivered vaginally .one maternal death was reported from 5 intubated patient 4 patient dramatic respiratory improvement after delivery. 6 patients recovered with manifestation improvement. **Conclusions:** most pregnant women with COVID 19 were recovered without morbidity and only one case in this study died from COVID 19

Keywords: COVID19, pregnancy, maternal outcome

INTRODUCTION

There is a natural suppression of the immune system and higher susceptibility to infectious diseases during pregnancy. The physiological changes in cardiopulmonary and immune systems make pregnant women more susceptible to severe responses to respiratory viruses [1]. Severe complications during pregnancy, such as pulmonary insufficiency, disseminated intravascular coagulation, multiple organ failure and death can caused by Influenza A virus subtypes [2–4]. A 25% percentage of fatality rate among pregnant women caused by SARS-CoV-1 [2].

A new coronavirus causing a severe acute respiratory syndrome (SARS-CoV-2) was identified in Wuhan (China) On December 2019. The World Health Organization (WHO) declared the Coronavirus disease 2019 (COVID-19) as outbreak pandemic On March 2020 [1].

There is no evidence that COVID-19 affect pregnant women more than the general population and the clinical course of COVID-19 during pregnancy were less dangerous compared to SARS and MERS, with a mortality rate of 0, 18, and 25%, respectively [6,7,8].

The risk of vertical and peripartum transmission of SARS-CoV-2 to the newborn has not yet been clearly demonstrated [8], but the treatment of COVID-19 during pregnancy is a major problem due to potential adverse fetal and neonatal effects of different drugs. [9]. The aim of this study was to evaluate the maternal outcome in COVID 19 positive pregnant female

METHODS

Study population: A total of 7 patients presented with suspected criteria of COVID 19 and confirmed by nasopharyngeal swap and PCR testing

Selection of patients: The study group were selected retrospectively from patients files. Inclusion criteria: patients had to present the following: Pregnant women, COVID 19 manifestations, and Positive PCR nasopharyngeal swap for COVID19.Exclusion criteria were Negative PCR nasopharyngeal swap for COVID19. From patients' files: Written informed consent was obtained from all participants, the study was

approved by the research ethical committee of Faculty of Medicine, Zagazig University. The study was done according to The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

All patient subjected to history taking, general examination, abdominal examination, routine laboratory evaluation, ultrasound evaluation. General examinations including vital signs and evidence of systemic disorders. Chest X ray, CT chest, and nasopharyngeal swab, PCR for COVID 19 were done. Collection of patients data and statistical analysis were done. Evaluation of cases for maternal outcome.

STATISTICAL ANALYSIS

Statistical analysis was done after collecting data. Data were entered checked and analyzed using Epi-Info version 6 and SPP for Windows version 8.

RESULTS

Patients age ranges from 20 to 40 years, 6 of them were multipara. Gestational age range was 34 to 38 wk at time of admission. One of them was with associated gestational diabetes. (Table 1). All patients were with positive epidemiological history of exposure. All patients were with loss of smell sense. Patient clinical presentation differ; 6 patients presented with fever, 3 with rigors. 5 patients presented with cough and sore throat, one patient presented diarrhea, myalgia in 4 patients, malaise in 5 patients. (Table 2)

From 7 patients; 4 patients were with low WBCs count, 6 with lymphopenia, 5 with elevated CRP,6 with elevated A.L.T. and 6 with positive PCR for COVID 19. (Table 3)

There were 6 patients with typical signs of viral infection. (Table 4)

The severity of pneumonia was different; 4 patients with severe pneumonia, 2 with moderate pneumonia, and one with mild pneumonia. (Table 5).

The mode of delivery was caesarian section in 6 patients and vaginal delivery in one patient. (Table 6).

The indications of caesarian section were different from patient to patient; 2 patients were with obstetrics indications, 3 patients were indicated from decreased oxygen saturation which lead to fetal distress and this result from severity of COVID19, one patient was indicated from fetal distress from severity of COVID19 associated with elevated A.L.T., and one patient was indicated from multifactorial factors (more than one indication for C.S.). (Table 7).

The treatment protocols were the Egyptian ministry of health protocols for COVID19 management.

Oxygen support was different among patients; 2 patients were with nasal cannula, 3 patients were with intubation, 2 patients were with mask CPAP. (Table 8).

The cause of death in the patient presented in this study was from cardiac arrest.

Table 1: Patients history

		No. or average or type
Age	20-40y	30 year
Parity	Nullipara	1
	multipara	6
Gestational age	34-38 wk	36 wk
Associated medical disorders	1	GDM

Table 2: Clinical data presentation

	No.	%
Dyspnea	6	85.71
Loss of smell sense	7	100%
Fever	6	85.71
Myalgia	4	57.14
Malaise	5	71.42
Rigor	3	42.85
Cough	5	71.42
Sore throat	5	71.42
Diarrhea	1	14.28
Chest pain	0	0

	No.	%
Epidemiological history -contact with infected person -exposure to relevant environment	 3 4	 42.85 57.14
Other family members Yes No	 3 4	 42.85 57.14

Table 3: Laboratory characteristics

	No.	%
WBCs ($\times 10^9$ cells per L)		
Low or normal leucocyte ($<9{\cdot}5\times10^9$ cells per L)	4	57.14
Lymphocyte count ($<1\times10^9$ cells per L)		
Lymphopenia($<10^9$ cells per L)	6	85.71
CRP (mg/L)		
Elevated CRP (>10 mg/L)	5	71.42
Elevated ALT (>45 U/L)	6	85.71
Elevated AST (>35 U/L)	5	71.42
Confirmatory test PCR	6	85.71

Table 4: CT evidence of pneumonia

	No.	%
Typical signs of viral infection **Yes** **No**	 **6** **1**	 **85.71** **14.28**

Table 5: Pneumonia severity

		No.	%
Severity of pneumonia	severe	4	57.14
	Moderate	2	28.57
	mild	1	14.28

Table 6: Mode of delivery

	No	%
Caesarian section	6	85.71
Vaginal delivery	1	14.28

Table 7: Indication of CS

	No.	%
Obstetrics indications	2	28.57
COVID 19 severity	3	42.85
Elevated ALT	1	14.28
Multifactorial	1	14.28

Table 8: Treatment after delivery

	No.	%
Oxygen support		
-nasal cannula	2	28.57
-Intubation	3	42.85
-mask CPAP	2	28.57
Antiviral therapy		
-yes	1	14.28
- no	6	85.71
Antibiotics		
-yes	7	100
-no	0	0
Use of corticosteroids		
-yes		
*dexamethasone		
*actimera	4	57.14
-no	1	14.28

DISCUSSION

In this study, Patients age ranges from 20 to 40 years, 6 of them were multipara. Gestational age range was 34 to 38 weeks at time of admission. One of them was with associated gestational diabetes.

All patients were with positive epidemiological history of exposure. All patients were with loss of smell sense. Patient clinical presentation differ; 6 patients presented with fever, 3 with rigors. 5 patients presented with cough, sore throat, one patient presented diarrhea, myalgia in 4 patients, malaise in 5 patients.

From 7 patients; 4 patients were with low WBCs count, 6 with lymphopenia, 5 with elevated CRP,6 with elevated A.L.T. and 6 with positive PCR for COVID 19.

There were 6 patients with typical signs of viral infection. The severity of pneumonia was different; 4 patients with severe pneumonia, 2 with moderate pneumonia, and one with mild pneumonia. The mode of delivery was caesarian section in 6 patients and vaginal delivery in one patient. The indications of caesarian section were different from patient to patient; 2 patients were with obstetrics indications, 3 patients were indicated fetal distress from severity of COVID19, one patient was associated from elevated A.L.T., and one patient was indicated from multifactorial factors.

The treatment protocols were the Egyptian ministry of health protocols for COVID19 management. Oxygen support was different among patients; 2 patients were with nasal cannula, 3 patients were with intubation, 2 patients were with mask CPAP.

The clinical characteristics of pregnant women with COVID 19 were similar to non-pregnant adult and this coincided with Huang C.et al.,2020 [12] and Li Q, et al., 2020 [13].

This study is limited by the small patient's number and retrospective method. Some considerations should be taken into account when interpreting the findings; all enrolled patients were in the third trimester, the effects of the time or mode of delivery on pregnancy outcomes were not evaluated. Future investigations of these issues and follow-up studies of pregnant women with COVID-19 infection will be necessary to ascertain the safety and health of mothers exposed to COVID19.

In summary, the symptoms of pregnant women with COVID-19 pneumonia were diverse, with the main symptoms being fever and cough.

The conclusion are limited by the small patients number, but the findings reported here are important for understanding the clinical characteristics COVID-19 infection in pregnant women.

CONCLUSIONS AND RECOMMENDATIONS

From 7 pregnant women presented with COVID 19 manifestations: 4 cases with severe COVID19 pneumonia, 2 moderate COVID19 pneumonia and one with mild COVID pneumonia. 6 patients delivered by caesarian section and 1 patient delivered vaginally .one maternal death was reported. From 5 intubated patient 4 patient dramatic respiratory improvement after delivery. 6 patients recovered with manifestation improvement

Most pregnant women with COVID 19 recovered without morbidity and only one case in this study died from COVID 19

Conflict of interest: None

Funding sources: None

Acknowledgement: The author would like to thank all patients included in the study . The author acknowledges the support of the all-staff members of Obstetrics and Gynecology department faculty of medicine Zagazig university for their support.

Contribution to authorship: Author contributed to the protocol, co-ordinated the study, interviewed the parents, analyzed the data and drafted the article.

Author contributed also to the revision and final approval of the article.

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To Cite:

Nossair, W. COVID 19 AND MATERNAL OUTCOME CASE SERIES STUDY. *Zagazig University Medical Journal*, 2023; (23-27): -. doi: 10.21608/zumj.2021.60385.2115