

## A Successful Pregnancy in a Couple that suffers from Covid-19, the first delivery for mother, first pregnant case in the south of Iran

Rahim Raofi<sup>1</sup>, Navid Kalani<sup>2</sup>, Mohsen Hojat<sup>1\*</sup>

<sup>1</sup>Infectious disease specialist, Jahrom University of Medical Sciences, Jahrom,, Iran.

<sup>2</sup>Research center for social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran.

### Abstract

**Background and objective:** Pregnant women are at risk for complications from all viruses, especially coronavirus infection (Covid 19). The study reported cares and Successful Pregnancy in a Couple that suffers from Covid-19.

**Case Report:** A 35-year-old pregnant woman (34 weeks) with his husband a 36-year-old man presented to our hospital for corona disease. The case was discussed between the gynecologist, Infectious disease specialist, and nursing staff. Her fetus was in hypoxic situation but manages for four days still that mother's condition was rationally stabled caesarian section performed. Eventually, the parents were isolated again, and the baby was transferred to NICU. Fetal distress and premature rupture of the membrane were seen. Alkaline Phosphate raised to 339 U/L. THE Neonate PCR test was negative.

**Conclusion:** Despite the fact that the baby's parents were infected with the coronavirus (Covid 19), the laboratory and clinical results of the infant were negative and the infant was not infected. With teamwork, and special nursing care all the family discharge from the hospital.

**Keywords:** Pregnancy, Coronavirus, Iran, Nursing care, Teamwork

### Background and objective

Coronaviruses are a family of RNA viruses. So far, six types have been identified that have made it possible for humans to become pathogenic. Four types show mild respiratory symptoms. 2, types that include Middle East Respiratory Syndrome (MERS) and Severe Respiratory Syndrome (SARS), which have a high prevalence and mortality<sup>1</sup>. In December 2019, a new type of coronavirus called Covid-19 was identified from lower respiratory tract samples from several patients in Wuhan, China<sup>2</sup>.<sup>3</sup> In February 2020, more than 2,500 people became infected with the virus, and with the rapid increase in deaths, then the World Health Organization declared the outbreak global<sup>4</sup>. Meanwhile, one of the high-risk groups in this pandemic was pregnant women. Pregnant women are at greater risk for suppression of the immune system and changes in physiologic compatibility<sup>5</sup>. Pregnant women with similar symptoms compared with non-pregnant adults showed a similar clinical pattern. Mild symptoms included muscle aches, weakness, sore throats, diarrhea, and shortness of breath. However, there were no specific symptoms for pregnant women who suffer from Covid-19 pneumonia compared to other people<sup>6</sup>.

\*Corresponding Author: Mohsen Hojat

Email: [Hojat@juma.ac.ir](mailto:Hojat@juma.ac.ir)

In a study by Wang et al (2020), they reported that about 50% of pregnant women were hospitalized in intensive care units, and about 33% needed mechanical ventilation, and their mortality rate was 25%. Therefore, pregnant women may be at risk for complications, such as preterm labor and transmission of the disease to the fetus<sup>7-10</sup>. Therefore, the study reported cares and a Successful Pregnancy in a Couple that suffers from Covid-19.

## Method

### Case report

A 35-year-old pregnant woman (34 weeks + 4 days, G1P1A0) with his husband a 36-year-old man presented to our hospital for treatment of respiratory dyspnea. Her Symptoms were Headache, Fever, Sweating, Dyspnea, Nonproductive cough, Fatigue, and Myalgia from 5 days ago. She admitted to the infectious diseases ward of Peymanieh Hospital of Jahrom University of medical sciences on 2020/06/18 at 19:50 pm. She identified as a high-risk patient then isolated. Swab PCR test from the patient's oropharynx was positive for COVID-19. The final diagnosis was Covid-19. Her GCS was 15/15. Initially, the gynecologist was suspected of poisoning with FerFolic, and OMEGA-3 due to symptoms such as muscle cramps, Myalgia, and diarrhea.

The patient past history was mild anemia. She had not any history of medication, DM, HTN, PID, PCOS, STD, thyroid disorder, alcohol and narcotic use, smoking, and PAP test before pregnancy. The history of family genetic disorders in the couple was negative. Her medications were Cap FerFolic (400 mg folic acid & 60 mg folate) QD PO. OMEGA-3 500 mg QD PO. During pregnancy, she checked for DM, depression, Pre-eclampsia. Although, she had a low-risk pregnancy. She reports an epidemiological history of medical travel in Bandar Abas (south town of Iran with a

high prevalence of Covid-19). She was a housekeeper. All follow-up Ultrasound imaging was normal before admission. Basic Fetal Anatomic Ultrasound imaging after admission, did not show abnormal information. Four times a day, fetal heart rate assessed. Fetal distress and premature rupture of the membrane were seen.

Before delivery she received this medication during admission; Cap Oseltoamovir 75mg QD PO, Tab Hydroxychloroquine 200mg QD PO, Amp Apotel 1gr Iv PRN, Tab Pantaperazol 40 mg QD PO, Tab Metoral 12.3 mg QD PO, Amp keflin 1gr IV Q12h, Amp Enoxaparin 40 mg SQ QD, Syrop MOM 30cc PRN, Oxygen 100% intermittent by mask 6-10 Lit/min, check U/A daily for protein and glucose in urine. Her diet was high protein, high calorie, and high vitamin.

After delivery she received this medication during admission; Cap Oseltoamovir 75mg QD PO, Tab Hydroxychloroquine 200mg QD PO, Amp Apotel 1gr Iv PRN, Syrop MOM 30<sup>cc</sup> PRN. Cap cephalixin 500 mg PO. The mother was discharged 4 days later. She was quarantined at home for 14 days. For this time, she saw his husband (admitted for coronavirus) and neonate (isolated in ground mother home) only through a virtual phone. She received 28 days of family support counseling.

On clinical examination in the first day, fever: 40.3° C, heart rate: 98/min, blood pressure: 165/95 mmHg, respiratory rate: 33/min, spo2: 85%. WT: 81 Kg, Chest X-ray not allowed.

Her laboratory workup included: WBC :3.9 x10<sup>3</sup>/Mic, PLT:100 x10<sup>3</sup>/Mic, Hb:12.3 mg/dl, BUN:19 mg/dl, Cr:1.7 mg/dl, CRP:47 Mg/L, ESR:38, AST:43 U/L, ALT:339 U/L, amylase:54 U/L (table 1).

**Table 1.** Clinical and Lab test of pregnant woman suffer from Covid-19

	First day	discharge day	1 week after discharge
<b>WBC</b> 103/Mic	3.9	8.3	7.7
<b>PLT</b> 103/Mic	155	160	218
<b>Hb</b> g/dl	12.3	12	13
<b>FBS</b>	105	89	91
<b>Cr</b> mg/dl	1.7	.9	.7
<b>BUN</b> mg/dl	19	14	10
<b>Specific gravity</b>	1030	1020	1010
<b>Protein urea</b>	+	+	-
<b>Urine glucose</b>	-	-	-
<b>Na</b> mEq/L	142	135	135
<b>K</b> mEq/L	5.2	3.5	4.6
<b>CRP</b> Mg/L	47	11	8
<b>ESR</b> mm/hr	38	21	11
<b>AST</b> U/L	43.0	22	-
<b>ALT</b> U/L	339.0	129	-
<b>O2 saturation</b>	85%	92%	96%
<b>T</b> °C	40.3	38.3	37.3
<b>PR</b> /min	98	108	73
<b>RR</b> /min	33	25	16
<b>BP</b> mmHg	165/95	125/85	125/70

Spiral Computed Tomography of chest & mediastinum according to Iranian Radiology Association Protocol in pregnancy was done (Without IV contrast) and showed: Multiple bilateral patches of ground-glass opacities and consolidation is seen located in peripheral and peri bronco

vascular areas compatible with Covid-19 pneumonia (Figure 1, 3 and 4). Moreover, Sub segmental atelectasis is seen in the posterior basilar segment right lower lobe And Several mediastina lymph nodes (Figure 2).

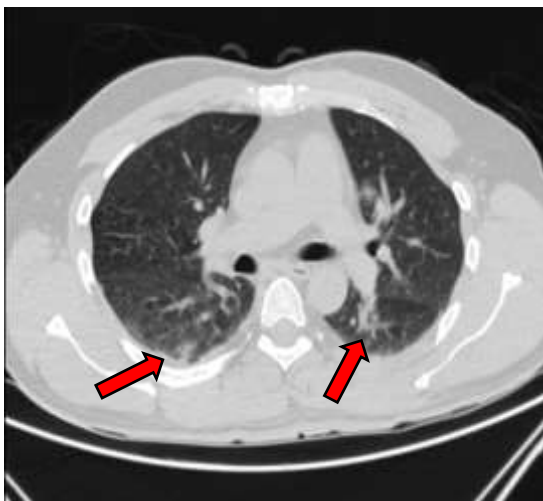


Figure 1: Consolidations In Lower Lobe Of Rt &amp; Lt Lung

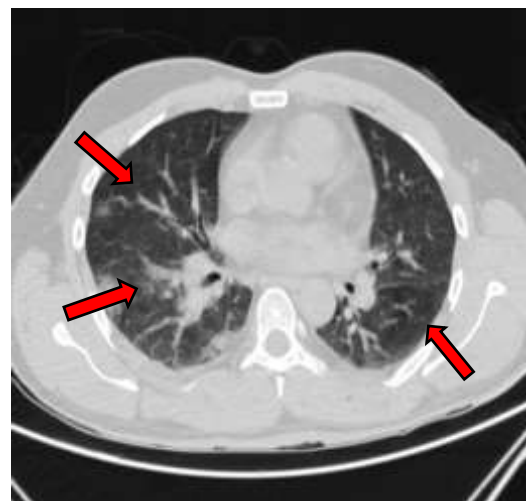


Figure 2. Peripheral/Sub pleural Distribution

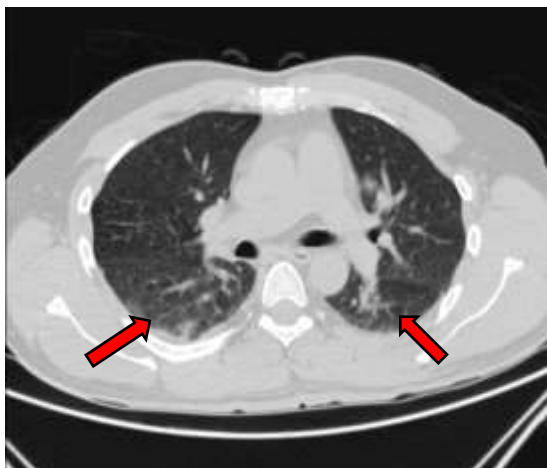


Figure 3. Ground Glass Opacities In Lower Lobe Of Rt & Lt Lung

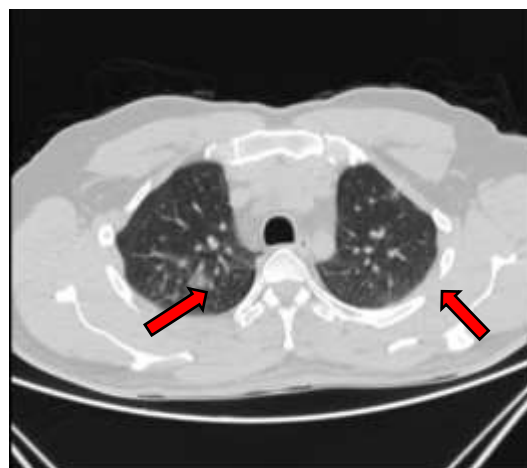


figure 4. Ground Glass Opacities In Upper Lobe Of Rt & Lt Lung

First NST indicated tachycardia. Because this was the first pregnant patient suffers from Covid-19 in the Jahrom and had an inappropriate NST, the gynecologist immediately suggested terminating the pregnancy by cesarean section. Nevertheless, the treatment team needed time to stabilize the mother's condition. Because if a cesarean section was performed, the probability of the mother's death would be very high. In addition, the possibility of transmitting the virus to the fetus was unknown. After 5 days of admission, Under perfectly controlled conditions in the operating room Cesarean

Section was performed and the mother was sent to the ICU ward to complete the treatment, and the neonate (Apgar =9/10) was transferred to the NICU ward. Due to the special situation of mother and neonate for saving time, kangaroo care and breastfeeding could not run. Cord blood sample and neonatal throat swab collected.

Physical Exam of the Newborn was done by two pediatricians, all sing were normal. Coronavirus testing was postponed until the onset of symptoms of respiratory distress or any other abnormal data (table 2)

**Table 2:** Clinical and Lab test of neonate

	Birth day	fourth day	Seven day
<b>O2 saturation</b>	99	100	100
<b>T °C<sub>(central)</sub></b>	38.3	37.9	37.9
<b>PR /min</b>	140	120	117
<b>RR /min</b>	47	45	42
<b>WT /gr</b>	2850	2650	2670
<b>Height /cm</b>	39	39	39
<b>Head</b>	35	35	35
<b>skin color</b>	pink	pink	pink
<b>Muscle tone</b>	normal	normal	normal
<b>Bilirubin</b>	3	8	13
<b>O2 saturation</b>	86%	90%	95%
<b>T °C</b>	39.3	38.9	37.3
<b>PR /min</b>	88	88	73
<b>RR /min</b>	29	25	16

Her husband was a 36-year-old man presented to our hospital for treatment of respiratory dyspnea. His Symptoms were Headache, Fever, Nonproductive cough, and Fatigue from 2 days ago. He admitted to the infectious diseases ward of Pymanie Hospital of Jahrom University of Medical Sciences on 2020/06/18 at 19:50 pm in his wife's room. He identified as a high-risk patient then isolated. THE swab PCR test from the patient's oropharynx was positive for Covid-19. The final diagnosis was Covid-19.

There was no disease in history. He had not any history of medication, DM, and HTN. He reports an epidemiological history of occupational travel in Bandar Abbas (south town of Iran with a high prevalence of Covid-19). His job was the army.

On clinical examination in the first day, fever: 39.3 °C, heart rate: 88/min, blood pressure: 145/85 mm Hg, respiratory rate: 29/min, spo2: 86%. Chest X-ray shows pneumonia in the right lower lobe.

**Table 3: Clinical and Lab test in unilateral patient suffer from Covid-19**

	First day	Third day	Seven day
<b>WBC</b> 103/Mic	3.5	4.9	6.6
<b>PLT</b> 103/Mic	140	155	210
<b>Hb</b> g/dl	15	14.4	16
<b>FBS</b>	105	100	94
<b>Cr</b> mg/dl	1.6	.6	.7
<b>BUN</b> mg/dl	17	12	18
<b>Specific gravity</b>	1033	1024	1019
<b>GFR</b>	85	84	85
<b>Protein urea</b>	negative	negative	negative
<b>Na</b> mEq/L	147	140	135
<b>K</b> mEq/L	5	4.5	4.5
<b>CRP</b> Mg/L	45	10	7
<b>ESR</b> mm/hr	35	24	10
<b>O2 saturation</b>	88%	91%	95%
<b>T</b> °C	39.6	38.4	37.6
<b>PR</b> /min	89	98	77
<b>RR</b> /min	28	26	19
<b>BP</b> mmHg	155/95	115/88	115/79

## Discussion

The clinical manifestations of the pregnant case all signs and symptoms were similar to non-pregnant adults, as stated in new research<sup>5</sup>. However, pregnant women are particularly susceptible to respiratory disease and severe pneumonia, because

they are at an immunosuppressive state, and physiological adaptive changes during pregnancy can render them intolerant to hypoxia<sup>11</sup>. Pregnant women were reported to be at an increased risk of complications from the pandemic H1N1 2009 influenza virus infection and was more than four

times more likely to be admitted to the hospital than the general population<sup>12-14</sup>.

Increased concentrations of AST and ALT might be one of the clinical manifestations. Therefore, suggested that LFT test be done in all pregnant patients suffer from Covid-19.

This was the first case of the cesarean section at the time of the outbreak, and all operating room staffs were anxious and worried, and all NICU staff too. In addition to infecting the mother, premature rupture of the membrane, and fetal distress emphasized performing a cesarean section. The focus of this study was to investigate the possibility of intrauterine transmission of Covid-19 infection<sup>15</sup>. We collected the cord blood, and neonatal throat swab samples at birth to the possibility of intrauterine fetal infection. Both PCR tests were negative. Therefore, no intrauterine fetal infections occurred during a late stage of pregnancy. The results of this study are similar to the results of David et al study<sup>16</sup>. Although breastfeeding, and kangaroo care is very important for mother and neonate<sup>17</sup>, but because at the beginning of the epidemic there was no scientific evidence in this area, and on the other hand, the possibility of transmission of the disease to the baby was very high, all these cares were canceled.

Despite the risk of hypoxia on the first day for fetus, and mother, gynecologists advised to terminate the pregnancy, but the treatment team accepted the risk to delay delivery so that it might be able to save the lives of both mother and baby. Of course,

the surgical team was ready and available all-time for this patient and the mother and fetus were monitored constantly.

The risk of CT scans for pregnant women was also one of the challenges of the treatment team. At that time, had no special protocol for pregnant women in Covid-19, but with the consent of the treatment team, it was performed once time on the first day and second time at the time of discharge for the mother. References express that computed tomography is a specific use of ionizing radiation that plays an important diagnostic role in pregnancy, and its use increased by 25% per year from 1997 to 2006<sup>18</sup>.

## Conclusion

Despite the fact that the baby's parents were infected with the coronavirus (Covid 19), the laboratory and clinical results of the infant were negative and the infant was not infected. With teamwork, and special nursing care all the family discharge from the hospital.

## Declarations

### Consent for Publication

Not published personal data that might compromise the anonymity of the patient.

### Ethical Approval and Consent to Participate

Full verbal and written consent has been obtained from the patient himself.

### Competing Interests



The authors report no conflict of interest.

### Availability of Data and Materials

Data are all contained within the case report. The raw data is available by the corresponding author when requested.

### Funding

No funding was received.

### Authors Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

### Acknowledgement

We would like to thank the Clinical Research Development Unit of Peymanieh Educational and Research and Therapeutic Center of Jahrom University of Medical Sciences for providing facilities to this work.

### References:

1. Weiss SR, Leibowitz JL. Coronavirus pathogenesis. *Advances in virus research*. 81: Elsevier; 2011. p. 85-164.
2. Wang C, Horby PW, Hayden FG, Gao GFJTL. A novel coronavirus outbreak of global health concern. 2020;395(10223):470-3.
3. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China, 2019. 2020.
4. Chan-Yeung M, Xu R. SARS: epidemiology. *Respirology* 8 Suppl S9–14. 2003.
5. Gottfredsson MJL. The Spanish flu in Iceland 1918. *Lessons in medicine and history*. 2008;94(11):737-45.
6. Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. 2020;395(10226):809-15.
7. Schoeman D, Fielding BCJVj. Coronavirus envelope protein: current knowledge. 2019;16(1):69.
8. Zhang YJV. Novel 2019 coronavirus genome. 2020.
9. de Wit E, van Doremalen N, Falzarano D, Munster VJNRM. SARS and MERS: recent insights into emerging coronaviruses. 2016;14(8):523.
10. Lillie PJ, Samson A, Li A, Adams K, Capstick R, Barlow GD, et al. Novel coronavirus disease (Covid-19): the first two patients in the UK with person to person transmission. 2020.
11. Wallace JG, Bellissimo CJ, Yeo E, Xia YF, Petrik JJ, Surette MG, et al. Obesity during pregnancy results in maternal intestinal inflammation, placental hypoxia, and alters fetal glucose metabolism at mid-gestation. *Scientific reports*. 2019;9(1):1-16.
12. Jamieson DJ, Honein MA, Rasmussen SA, Williams JL, Swerdlow DL, Biggerstaff MS, et al. H1N1 2009 influenza virus infection during pregnancy in the USA. 2009;374(9688):451-8.
13. Yang X, Yu Y, Xu J, Shu H, Liu H, Wu Y, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. 2020.
14. Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. 2020.
15. Zambrano LI, Fuentes-Barahona IC, Bejarano-Torres DA, Bustillo C, Gonzales G, Vallecillo-Chinchilla G, et al. A pregnant woman with COVID-19 in Central America. *Travel medicine and infectious disease*. 2020.
16. Schwartz DA. An analysis of 38 pregnant women with COVID-19, their newborn infants, and maternal-fetal transmission of SARS-CoV-2: maternal coronavirus infections and pregnancy outcomes. *Archives of pathology & laboratory medicine*. 2020;144(7):799-805.
17. Stadd K, Diehl B, Yenokyan G, Aucott SW. A Kangaroo Care Pathway for NICU Staff and Families: The Proof Is in the Pouch. *Advances in Neonatal Care*. 2020;20(1):14-24.

18. Tromeur C, van der Pol LM, Le Roux P-Y, Ende-Verhaar Y, Salaun P-Y, Leroyer C, et al. Computed tomography pulmonary angiography versus ventilation-perfusion lung scanning for diagnosing pulmonary embolism during pregnancy: a systematic review and meta-analysis. *haematologica*. 2019;104(1):176-88.

Please cite this article as:

Rahim Raofi, Navid Kalani, Mohsen Hojat . A Successful Pregnancy in a Couple that suffers from Covid-19, the first delivery for mother, first pregnant case in the south of Iran. *Int J Hosp Res*. 2021; 10 (3).