

Clinical Characteristics of Infants Born to COVID-19 Carrying Mothers

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ABSTRACT

The study was conducted in the Baghdad City during the period between March 12, 2020, and January 5, 2021, at Al-Elwiya Maternity teaching hospital. The study is a retrospective analysis of the neonates born to mothers with COVID-19 admitted and delivered at Covid-19 Hospital (NH). Data on 100 neonates born to mothers with COVID-19 Infected newborns and children may be asymptomatic. It may also present with signs of severe respiratory distress. The study showed that there was a significant relation between sex of neonate and infection of Covid-19 and a significant relation with preterm birth too Sepsis was available in a more prominent extent among SARS-COV-2 contaminated children when contrasted with uninfected youngsters. The danger of sepsis was higher in the children with SARS- CoV-2 infected gathering when contrasted with the noninfected bunch, 2% had hypocalcemia, 7% had hypoglycemia and 15% had hyperbilirubinemia. The risk of fever in SARS-CoV-2 tainted youngsters was higher in covid patients when contrasted with noninfected infants, albeit this expansion was not critical measurably. Helpless taking care of was fundamentally more normal among SARS- CoV-2 contaminated children (11%). Among the companion of 33 contaminated children, one infant had an inconsistent shadow reminiscent of pneumonia. The correlation of the board systems utilized for tainted and noninfected youngsters of moms with COVID-19 is introduced in Table 4% SARS-CoV-2 tainted children required concentrated consideration for the board. The requirement for sack and cover, CPAP, and the ventilator was occasions higher in SARS-CoV-2 contaminated children than noninfected, notwithstanding, the utilization of CPAP was just genuinely huge. There is a higher risk of adverse outcomes such as neonatal sepsis and death in the SARS-CoV-2 infected as compared to the noninfected neonates.



1. Introduction

COVID-19, infectious caused by SARS-CoV 2 is a disease. severe respiratory tract infections such as SARS and MERS. In other coronaviruses that cause disease Case fatality rates of 20–40% have been seen and both death and miscarriage in pregnant women, newborn babies premature births and intrauterine growth retardation caused serious complications such as [1]. Current evidence suggests that SARS-CoV-2 infections in neonates shows its rarity. Infected The majority of newborns are asymptomatic or have the disease. with mild symptoms (respiratory support no need) and they recovered. serious in newborns disease and the need for mechanical ventilation are rare. is seen as. with underlying medical problems newborns and preterm infants (<37 weeks gestational age), risk of serious illness due to COVID-19 higher babies. For infection caused by SARS-COV2, Evidence of vertical transmission from infected mothers to infants there is no [2], [3]. In small case reports, the virus is fluid, umbilical cord blood, vaginal discharge, not detectable in salivary glands and breast milk has been reported. COVID-19 among pregnant women No increase in prevalence was observed and associated congenital anomalies have not been reported [4], [5]. Available data suggest SARS-CoV-2 near time of birth. About the number of babies born to women with a positive test 2% within the first 24-96 hours after birth indicates positive test results. Case series in the literature, COVID-19 testing at birth among babies born to women who are positive It reports infection rates ranging from 0-6. Emerging evidence is highest for newborns. risk of infection close to the mother's time of delivery It shows that he has a COVID-19 infection. 923 newborns born to women with COVID-19 a CDC (Centers for Disease Control) and Prevention) report, 2.6% of newborns They were found positive for SARS-CoV-2 after birth. Infection within 14 days before birth born from women with documented In the subgroup of 328 infants, newborns 4.3% test positive for SARS-CoV-2 has been done. Maternal symptomatic or asymptomatic clear distinction of risk for the newborn between infection not available. Onset of maternal infection time is much more important for risk [6- 9]. The study aims to find the relationship between Covid 19 virus infections and early births in women infected with this virus in of Baghdad city.

2. Materials and methods

The study was conducted in the Baghdad City during the period between March 12, 2020, and January 5, 2021, at Al-Elwiya Maternity teaching hospital. The study is a retrospective analysis of the neonates born to mothers with COVID-19 admitted and delivered at Covid-19 Hospital (NH). Data on 100 neonates born to mothers with COVID-19 Infected newborns and children may be asymptomatic. It may also present with signs of severe respiratory distress,

The symptoms that can be seen in the diseases caused by it can be seen.

- General condition disorder, tendency to sleep may be seen
- Hyperthermia/heat instability, tachypnea, tachycardia may be seen.
- Wheezing, nasal wing breathing, apnea, cough, cyanosis may be seen.
- Very few newborns need respiratory support in the literature. has been reported. Cases requiring mechanical ventilation such as most prematurity, asphyxia, or non- COVID-19 sepsis newborns with comorbidities.

Case Description

- Suspected case: 14 days before birth and postnatal 28 born to a mother with a diagnosis of COVID-19 in the diurnal period baby. In family, caregivers, visitors, COVID19 infection in hospital staff caring for the baby existence. Etiology in newborns hospitalized with the diagnosis of pneumonia It is considered a

suspected case because the spectrum of agents is very wide. You have to be very selective to evaluate. Lymphopenia or infants with typical findings on chest X-ray can be considered as a case.

- Definitive COVID-19: In respiratory tract or blood sample COVID-19 PCR positivity.
- RT-PCR (Real-Time PCR): It is the gold standard in diagnosis. Multiple It should be preferred to take samples from places (nasopharynx/oropharynx) swab/aspirate, sputum, endotracheal aspiration, bronchoalveolar lavage samples are available). Nosopharyngeal swab is the most commonly used example. However, the positivity rate is below 50%. strongly suspect. In cases where the test result is negative, it will be repeated every 24 hours. sample submission should be considered.
- Complete blood count: Normal, leukopenia, lymphopenia, mild may have thrombocytopenia.
- Biochemistry: CK, ALT, AST, ALP, LDH may increase.
- Acute phase reactants: CRP, procalcitonin. generally normal is on the border
- Imaging methods: On the anterior-posterior chest X-ray pneumonia findings, and ileus findings on abdominal X-ray visible. Low sensitivity and specificity, Due to the high radiation load, thorax CT can only be should be withdrawn if clinically indicated.6,10
- The main treatment is supportive treatment: Oxygen therapy, fluid electrolyte therapy, total parenteral nutrition support, advanced airway administration and mechanical ventilation support (invasive/noninvasive with exhalation filter). ARDS

3. Results

The study included 100 live birth form mother with covid-19 infection, PCR tests were done 2 times for each case and prospectively study were performed for them A course of children brought into the world to moms with COVID-19. Roomed in with Mother: Exclusive breastfeeding (EBF) and skin-to-healthy skin contact was followed for all steady mother-baby dyads. EBF was rehearsed by advising the mother to avoid potential risk by guaranteeing severe respiratory (wearing a clinical cover) and hand cleanliness prior and then afterward taking care of or contacting the child. Unsteady, preterm children and infants destined to wiped out moms were given communicated bosom milk (EBM)/sanitized benefactor human milk (PDHM) from Human Milk Bank with taking care of cup/coddling/or gastric cylinder taking care of according to necessities of the child.

Table 1: Relation of Covid 19 symptoms and outcomes with PCR result

Lab outcomes	No.	Admit.	With symptoms	No symptoms	Cured	Death
In 1 st PCR test	26	7	5	20	22	1
In 2 nd PCR test	5	2	1	3	3	1
Both first and second	5	2	3	3	4	2
	36	13	9	26	29	4

The study showed that there was a significant relation between sex of neonate and infection of Covid-19 and a significant relation with preterm birth too, Table 2

TABLE 2. Relation of Covid-19 infection with sex and preterm birth

Characteristics	Total (%)	PCR +ve (%)	PCR -ve (%)	p value
Male	55	40	260	0.035
Female	45	20 (60.6)	223 (45.4)	
Preterm delivery	10	7	3	0.032

Term delivery	90	93	97
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Sepsis was available in a more prominent extent among SARS-COV-2 contaminated children when contrasted with uninfected youngsters. The danger of sepsis was higher in the children with SARS-CoV-2 infected gathering when contrasted with the noninfected bunch, 2% had hypocalcemia, 7% had hypoglycemia and 15% had hyperbilirubinemia.

Table 3. Clinical characteristics and complications of neonates born to mothers with COVID-19

Characteristics	Total (%)	PCR +ve (%)	PCR -ve (%)	p value
Complications in neonatal period	19.7	27.0	18.4	0.32
Congenital anomalies	1.1	0	1	
Birth asphyxia	1.2	3	7	0.34
Meconium aspiration syndrome	0.7	1	3	
Hypocalcemia	0.7	2	0.5	0.15
Hypoglycemia	1.6	7	1.3	0.09
Sepsis	3.7	11	3.2	0.022
Hyperbilirubinemia	11.6	15	12	0.42

The risk of fever in SARS-CoV-2 tainted youngsters was higher in covid patients when contrasted with noninfected infants, albeit this expansion was not critical measurably. Helpless taking care of was fundamentally more normal among SARS- CoV-2 contaminated children (11%). Among the companion of 33 contaminated children, one infant had an inconsistent shadow reminiscent of pneumonia.

TABLE 4. Clinical presentations in neonates born to mothers with COVID-19

Characteristics	Total (%)	PCR +ve (%)	p value
Fever	0.9	4	0.23
Poor feeding	3.2	11	0.032
Respiratory distress	4.6	11	0.034
Oxygen saturation			
≤95% saturation	2.5	13	0.0054
>95% saturation	97.2	86	

The correlation of the board systems utilized for tainted and noninfected youngsters of moms with COVID-19 is introduced in Table 4% SARS-CoV-2 tainted children required concentrated consideration for the board. The requirement for sack and cover, CPAP, and the ventilator was occasions higher in SARS-CoV-2 contaminated children than noninfected, notwithstanding, the utilization of CPAP was just genuinely huge.

Table 5. Management of neonates born to mothers with COVID-19

Characteristics	Total (%)	PCR +ve (%)	p value
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Neonatal resuscitation	4%	6.1	0.340
NICU admission	25.2	27.3	0.801
Bag and mask	3.4	6.1	0.316
CPAP	2.9	12.1	0.011
Ventilator support	3.1	9.1	0.073
Treatments ^b (n = 125)	23.9	27.3	0.639
Phototherapy	11.3	15.1	
Antibiotics	8.0	15.1	
Supportive therapy ^c	12.6	9.1	

4. Discussion

More than 80,000 cases in China 2,000 (2.5%) are under the age of 18 and 379 of them were babies (0.4%) has been reported. More than 90% of all patients more asymptomatic, mild or moderate was in intensity [10]. Newborns likelihood of COVID-19 infection low and the disease compared to adults tends to be asymptomatic Various opinions have been put forward as to why has been driven. pediatrics with COVID-19 and in the adult population this is notable. There are many theories to explain the difference. assumed. Diverse lifestyle as well as (less commonly, general and lifetime exposure to smoke or pollution. resilience, better nutrition and more more daily exercise), children's SARSCoV- 2 from the transmission of infection then disease progression other advantages that may limit [11], [12]. Generally, children are more in addition to having healthy lungs for Covid-19 to enter cells. Angiotensin converter needed maturity of enzyme (ACE2) receptors, low bonding ability and function lung injury in children keeps it minimal.

Also other increased exposure to viruses Covid- It can provide cross immunity to [13]. cause inflammation and respiratory distress a cytokine that results in fluid accumulation storm or systemic inflammatory response syndrome is as severe in children as in adults is not developing. Also, more children effective T cell immune response, disease-protective effect may be the reason. These are the pediatric age group. Although significant for newborns Another thought to be protective mechanism is more effective [14].

Due to the limited study, there is currently insufficient evidence for breastfeeding mothers infected with COVID-19. In a study conducted by recent study with nine infected women, COVID-19 was not found in the milk of six mothers [15]. Another study found that viral RNA was not detected in the SARS- CoV breast milk test of a mother infected with SARS. In a study recently it was determined that the SARS-CoV-2 RNA test was positive in 12 of 265 newborns. Although more research is needed to confirm these results, it can be thought that the presence of severe symptoms in mothers and higher rates of hospitalization in intensive care units may be effective in cases with vertical transmission [16].

Babies with mothers who have a positive COVID-19 test should be kept in a separate room from the mother for at least 14 days or until the virus disappears, during which time direct breastfeeding is not recommended [14]. Data on maternal or fetal effects of COVID-19, which has been declared a pandemic by WHO, are insufficient. In the light of the studies, the diagnosis, treatment and prevention methods of COVID-19 during pregnancy and birth are the same as other infected individuals and are not specific to periods [16]. As in adults, it is necessary to pay attention to social isolation, mask use and precautions in pregnant women. In this context, health professionals have great roles and responsibilities. Healthy birth management in pregnant women with or suffering from COVID-19; In puerperant women, necessary training and consultancy services should be provided on basic issues such as newborn care and breastfeeding [17]. Pregnant women should be followed closely in terms of possible maternal-fetal complications. Psychological support for the COVID-19 disease, which causes stress on individuals due to

its emergence and rapid spread in a short time, is another important issue that should not be ignored. In conclusion, given the impact of the virus on pregnancy and childbirth and the limited information on increasing studies, it is recommended to provide up-to-date care for mothers affected or suspected of COVID-19 according to global and regional processes and guideline [18]. In a methodical audit of 105 youngsters which announced 8.8% of inspiration, the pace of untimely was lower among the tainted children. Be that as it may, in our examination, albeit the quantities of untimely children were higher in the tainted gathering when contrasted with uninfected controls, the thing that matters was not measurably huge. In any case, our investigation uncovered that the SARS-CoV-2 tainted children are at expanded danger of neonatal inconveniences when contrasted with their uninfected partners in spite of no distinction in their development status or birthweight [19], [20].

Conclusions: There is a higher risk of adverse outcomes such as neonatal sepsis and death in the SARS-CoV-2 infected as compared to the noninfected neonates.

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