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CASE REPORT

Case Report of a 3 Months Infant Who Died of COVID -19

ZAMEER AHMAD NAYYAR, SUMERA AKRAM, MUHAMMAD AHMED KHAN, Farah Zameer

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ABSTRACT

A 3 months old female infant was admitted with history of high grade fever, cough, irritability, difficulty in feeding and vomiting for two days. On admission, she had fever of 103°F , respiratory rate of 65/minute, heart rate of 155/minute. She had morbilliform rash on her trunk and back. Her laboratory findings showed markedly raised D-Dimers (4480 ng/ml), and LDH (lactate dehydrogenase) was also raised 2230 U/L. Chest X-ray showed bilateral pneumonia. Considering the present pandemic of covid-19, HR-Ct chest was carried out which revealed bilateral diffuse extensive ground glass opacities in peripheral and peribronchial distribution. Upon HR CT chest findings, her nasopharyngeal swab was again taken for COVID 19 PCR which came positive. Injection dexamethasone (0.8 mg Iv X 8 hourly), injection piperacillin - tazobactum 400 mg X 8 hourly, Injection amikacin 30 mg X BiD, Inj remdesivir 25 mg IV stat and 12.5 mg IV daily for next 02 days till her death. Despite vigorous efforts, her oxygen saturation kept deteriorating; she had to be put on ventilator. She went into sudden cardiorespiratory arrest on 4th November and could not be revived.

Key Words: *Infant, COVID-19*

INTRODUCTION

COVID-19 (corona virus disease of 2019) has spread globally as a pandemic, in an unprecedented manner affecting all countries around the globe. In spite of world wide spread, many clinical and epidemiological characteristics of this viral illness are still not clear especially in infants and children. The epidemic arose in Wuhan city of China in December 2019 and spread globally. In contrast to initial reports, it is now known that children are affected similar to adults, however majority remain asymptomatic or have mild symptoms only.^{1,2} Children/infants acquire it through close contact with other infected persons.³ Similar picture was reported with middle-east respiratory syndrome (MERS-CoV) and sudden acute respiratory syndrome (SARS-CoV). Previously it was shown that middle-east respiratory syndrome (MERS-CoV) and sudden acute respiratory syndrome (SARS-CoV) mainly

affected adults with less severe disease and mortality in pediatric cases.^{4,5}

Clinical symptoms of covid-19 in children and infants include fever, cough, rhinorrhea, nasal blockage, tachypnea, vomiting, diarrhea, wheezing, pneumonia etc.^{2,3} Laboratory findings constitute leukopenia/leukocytosis, lymphopenia, raised C reactive protein level, D-dimers/ferritin levels/lactate dehydrogenase levels. Radiological findings include bilateral infiltrates and ground glass opacification.^{2,3,6} Diagnostic test is PCR of respiratory i.e nasopharyngeal or oropharyngeal secretions/swabs.^{2,3,6}

We present a case of a 3 month old infant who died of covid-19 pneumonia for better understanding of clinical presentation, laboratory and radiological findings.

CASE REPORT

A 3 months old female infant was admitted in our

hospital with history of high grade fever, cough, irritability, difficulty in feeding and vomiting for two days. On admission, she had fever of 103°F, respiratory rate of 65/minute, blood pressure 90/60 mmHg, heart rate of 155/minute. She also had morbilliform rash on her trunk and back. She was advised all base line investigations, put on intravenous antibiotics and nursed in pediatric ICU. Her oxygen saturation in room air was 80%. So, supplementation oxygen was given.

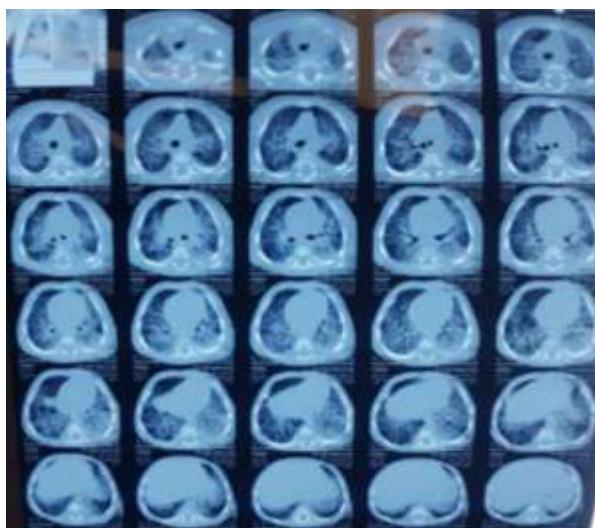


Fig 1; HR CT scan chest showing bilateral ground glass opacifications

Her laboratory findings showed hemoglobin 10.2 gm/dL, total leucocytes count $11.1 \times 10^3/\text{mm}^3$, platelets count 309×10^3 , serum bilirubin 22 umol/L, ALT (alanine transaminase) 26 IU/L, serum alkaline phosphate 119 U/L, serum urea 3.7 mmol/L, Creatinine 46 umol/L, D-dimers were markedly raised 4480 ng/ml, LDH (lactate dehydrogenase) was also raised 2230 U/L. Chest Xray showed bilateral pneumonia. Considering the present epidemic of covid-19, her nasopharyngeal swab was sent for PCR of SARS Cov-2 soon after finding her chest X-ray on the day of admission which came negative. HR-Ct chest was carried out which revealed bilateral diffuse extensive ground glass opacities in peripheral and peribronchial distribution (fig 1). Upon HR CT chest findings, her nasopharyngeal swab was again taken for COVID 19 PCR on next day which came positive. Diagnosis of bilateral Covid pneumonia (severe disease) was made. She was managed with injection dexamethasone (0.8 mg Iv X 8 hourly), injection piperacillin - tazobactum 400 mg X 8 hourly, Injection amikacin 30 mg X BiD, Inj remdesivir 25 mg IV stat and 12.5 mg IV daily. Despite vigorous efforts, her oxygen saturation kept deteriorating; she had to be put on ventilator. Her condition gradually deteriorated and she went into cardiorespiratory arrest on 4th November and could not be revived.

TABLE 1: Laboratory findings

S/No	Laboratory Test	Normal Range	Patient result
1	Hemoglobin	12 – 18 mg/dL	10.2 mg/dL
2	Total Leucocyte Count	$4 – 11 \times 10^3/\text{mm}^3$	$11.1 \times 10^3/\text{mm}^3$
3	Platelets Count	$150-400 \times 10^3/\text{mm}^3$	$309 \times 10^3/\text{mm}^3$
4	Serum Bilirubin	0-17 umol/L	22 umol/L
5	Serum Alanine Transaminase	<42 IU/L	26 IU/L
6	Serum Alkaline phosphatase	<279 U/L	119 U/L
7	Serum Urea	1.7 – 8.3 mmol/L	3.7 mmol/L
8	Serum Creatinine	53-105 umol/L	46 umol/L
9	Serum Sodium (Na)	136 -146 mmol/L	139 mmol/L
10	Serum Potassium (K)	3.5 -5.1 mmol/L	4.1mmol/L
11	Blood Sugar Random	<140mg/dL	133 mg/dL
12	D-dimers	0-500 ng/ml	4480 ng/ml
13	LDH (Lactate dehydrogenase)	0-480 U/L	2230 U/L
14	ESR	0-15 mm at end of 01 hr	20 mm
15	C Reactive protein	0-10 mg/L	29.1 mg/L

DISCUSSION

On internet search of infants and children afflicted with COVID 19, a small number of pediatric intensive care unit admissions with few deaths

have been reported globally in children/infants.² Pediatric cases seem to be less severely affected than adults. However, young age is not totally protective. According to a study in China, Dong et

al analyzed data of 2143 children suffering from covid-19 under 18 years of age group.⁷ Infants were seen to have higher rates of severe illness as compared to older children or adults. There were 56.6% boys and 43.4% girls in this study. Median age was 7 years. 94.1% were asymptomatic, mild and moderate cases; 4.4% asymptomatic, 50.9% mild disease, 38.8% moderate disease and 5.9% were of severe disease. Infants were found to have high rates of severe and critical disease as compared to older children i.e approximately 11 % of infants were afflicted with severe or critical illness compared to 7% children aged between 1-5 years, 4% between 6-10 years, 4% between 11-15 years and 3% between 16-18 years children. Only one child died, of age 14 years. No case of infant mortality was found upon literature and internet search. Pediatric patients had fewer severe and critical cases than adults (5.9% versus 18.5%).⁷ According to research by Liguoro et al, during ongoing pandemic only 2% children with COVID-19 had to be admitted in intensive care unit and mortality was 0.08%.⁸

In summary, any infant presenting with pneumonia to any clinician should raise suspicion of covid-19 in differential diagnosis for better management.

Authors' affiliation

Zameer Ahmad Nayyar,
PAF Hospital, Islamabad

Sumera Akram
Bacha Khan Medical College, Mardan

Muhammad Ahmed Khan
CMH Zhob

Farah Zameer

Islamabad Diagnostic Centre, Islamabad.

REFERENCES

1. Chen Y, Peng H, Wang L, Zhao Y, Zeng L, Gao H, Liu Y. Infants born to mothers with a new coronavirus (COVID-19). *Front pediatr* 2020. Doi: 10.3389/fped.2020.00104.
2. Petra Z, Nigel C. Covid-19 in children, pregnancy and neonates: A review of epidemiologic and clinical features. *Pediatr J Infect Dis* 2020; 39(6): 469-477.
3. Hong H, Wang Y, Chung HT, Chen CJ. Clinical characteristics of novel coronavirus disease 2019 (COVID-19) in newborns, infants and children. *Pediatrics and Neonatology*. <http://doi.org/10.1016/j.pedneo.2020.03.001>.
4. Assiri A, Abedi GR, Al Masri M, Bin Saeed A, Gerber SI, Watson JT. Middle east respiratory syndrome coronavirus infection during pregnancy: report of 5 cases from Saudi Arabia. *Clin Infect Dis* 2016; 63: 951-3.
5. Shek CC, Ng PC, Fung GP, Cheng FW, Chan PK, Peiris MJ et al. Infants born to mothers with severe acute respiratory syndromes. *Pediatrics* 2003; 112: e254. Doi: 10.1542/peds.4.e254.
6. Khan MA, Khan MA. A case of 45 years man who succumbed to coronavirus disease 2019 (COVID-19). *J Coll Physicians Surg* 2020; 30(Suppl 2): 537-39.
7. Dong Y, Mo X, Hu Y, Qi X, Jiang F, Tong S. Epidemiological characteristics of 2143 pediatric patients with 2019 coronoavirus disease in China. *Pediatrics* 2020; doi: 10.1542/peds.2020-0702.
8. Liguoro I, Pilotto C, Bonanni M, Ferrari ME, Pusiol A, Nocerino A et al. SARS-COV-2 infection in children and newborns: a systemic review. *Euro J Pediatr* 2020; 179: 1029-46.