CASE REPORT

Coronavirus in 13 Months Old Child: Report of a Successful Conservative Management Strategy

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ABSTARCT

Children of all ages have been reported to be susceptible to COVID-19 with no significant gender difference. Clinical manifestations of paediatric patients are generally less severe than those of adult patients except for the children with co-morbidities. We report a case of a COVID-19 positive child, 13 months old, with both parents positive and managed conservatively for symptoms of cough and loss of appetite. Continuous monitoring and close follow-up in intensive care is the key to successful recovery in patients with Coronavirus infection without co-morbidities.

KEYWORDS: Coronavirus, Pediatrics, Management, X-Ray Chest.

How to Cite This:

Saqib M, Jameel D, Javed M, Nighat S, Anwar S, Fizzah F. Coronavirus in 13 months old child: report of a successful conservative management strategy. Biomedica. 2020; 36 (COVID19-S2): 109-12.

INTRODUCTION

Since the middle of December 2019, Coronavirus infection has been prevalent in Wuhan, China, and now it has rapidly spread globally. To date, this pandemic has rapidly spread causing more than 6,000,000 cases worldwide with more than 300,000 deaths. The mortality rate among COVID-19 patients is 2.38% in China and 0.25% in other countries and regions outside China.[1] Children have represented some 2% of diagnosed cases in China, 1.2% of cases in Italy and 5% of COVID-19-positive cases in the United States.[2] Infants and children have not been featured prominently inCOVID-19 case statistics as younger children cannot wear masks and do not take other special preventive and control measures and also they have immature respiratory tract and immune system so the number of child infection cases has increased significantly, especially in younger age groups and, therefore, should be given high attention.[1,3] Children of all ages are found to be susceptible to COVID-19 with no significant sex difference. Clinical manifestations of pediatric patients are generally less severe than those of adult patients except for the children with other underlying diseases such as congenital heart, lung and airway diseases, malnutrition, and tumors having more severe SARS-CoV-2 causing deaths of infants and young children. Clinical presentation in children ranges from asymptomatic or mild influenza like symptoms requiring only supportive care to critically ill presenting as acute respiratory distress syndrome (ARDS) requiring mechanical ventilation (1.8% of infant cases), coagulopathy, multi-organ failure and eventually death.[4,5] Chest CT shows bilateral ground-glass opacities. Children more often have gastrointestinal symptoms with fever as compared with adults and they continue to secrete this virus in their stools long after they are absent from nasopharyngeal secretions[6] hence, they act as asymptomatic carriers and play a major role in transmission of this virus as well.

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PRESENTATION OF CASE

We report a case of a 13 months old female child having an exposure to Coronavirus and presenting with persistent cough. Her father was 30-year-old male and mother was 28-year-old female. The child and her parents visited the grandfather of the child who had cough and fever and was admitted in Farooq Hospital, Bahria Town, Lahore. All three had history of exposure and later on presented with dry hacking cough with no fever one week after exposure. On contact tracing, the COVID-19 test was positive done on nasopharyngeal and oropharyngeal swabs. On day 1, the child had persistent cough, decreased oral intake along with vomiting. Chest X-Ray of the child was performed which showed unremarkable changes (Figure-1). Laboratory work-up was unremarkable (Table-1). The father's Chest X-ray showed bilateral haziness in both middle zones of lungs while mother's Chest X-ray revealed opacification in right lower zone possibly due to consolidation (Figure-1). All of them were given a single room and isolation measures were taken to avoid infecting others. The child was administered antiemetic, Onset Syrup in a dose of 0.15 mg/kg per day, and electrolytes were maintained through ORS, given multiple times per day. Prospane Syrup, a secretolytic and bronchodilator, in a dose of 2.5 mg BD along with Acefyl Syrup, in a dose of 3.5 mg BD was also administered orally. C-reactive protein was negative and fever was not documented. On day 2, vomiting had settled while cough aggravated. Oral

Table-1: Laboratory Profile of Child and Parents

	Child	*Father*	*Mother*
Complete Blood Examination			
TLC	8.5	8.6	6.3
Hb	13.4	15.3	12.9
PLT	391	288	308
Chemical Examination			
Bili	0.3	0.5	0.3
ALT	22	31	19
AST	31	23	22
ALP	273	96	69
Alb	4.2	4.4	4.1
CRP	0.47	2.0	0.7
Urea	NA	22	20
Cr	NA	1	0.7
Urine Complete			
Sp gr	NA	1.025	1.030
Ph	NA	5	5
Pr	NA	Nil	Nil
Glu	NA	Nil	Nil
Ketones	NA	Neg	Neg
Leukocyte	NA	Nil	Nil
WBC	NA	1-2	1-2
Blood	NA	Nil	Nil
Mucus	NA	Nil	Nil
Epi cells	NA	NA	NA
Na+	NA	144	141
K+	NA	3.4	3.7
Cl^-	NA	104	104

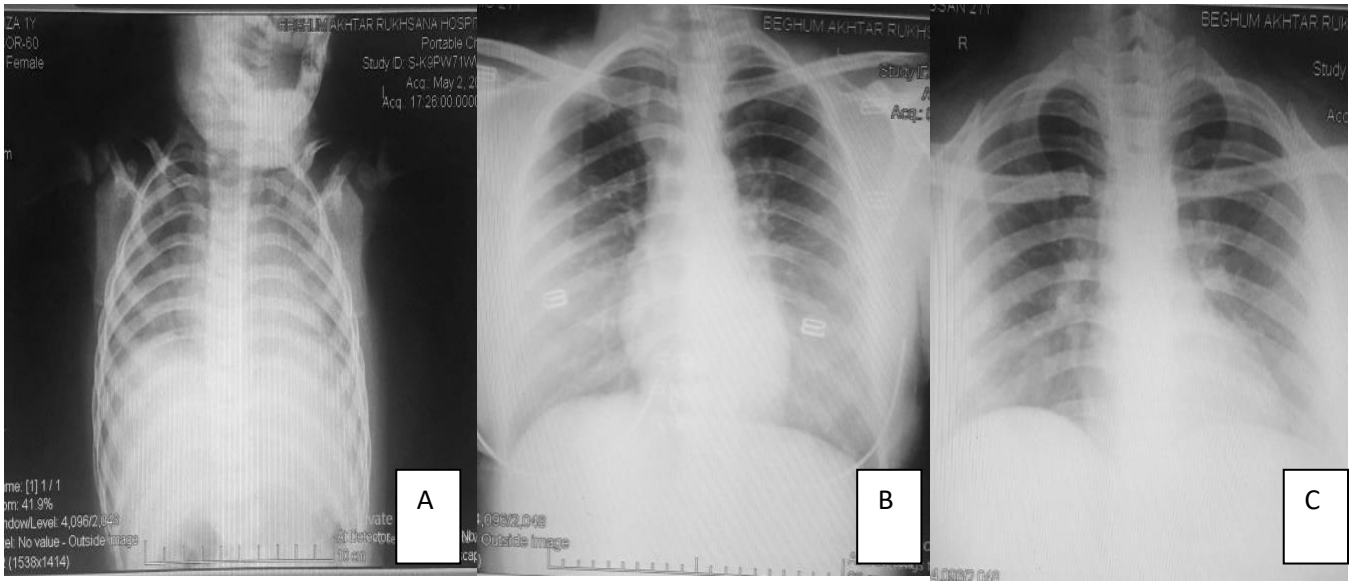

Fig. 1: Chest X-Ray (A/P) of child (A), father (B) and mother(C).
X-Ray shows no significant changes in lung (A) bilateral haziness in both middle zones of lungs (B) and opacification in right lower zone (C)

intake of child remained compromised. On 3rd day, the child had persistent cough for which the regime was modified by adding Muconyl Syrup, an expectorant and bronchodilator, in a dose of 25 ml BD. On the 4th day, response to cough was improved and oral intake was established. The dry hacking cough of parents persisted for which they were given Acefyl Syrup, Prospane Syrup with Zinc and Vitamin C supplements for immune boost up. After 7 days of treatment, the cough of parents settled. On day 15th, the COVID-19 tests were performed again. Child and mother were negative while father was still positive. On day 16th, the child and mother were discharged. On day 18th, the father's PCR test was negative and he was also discharged.

DISCUSSION

Coronaviruses that are a large family of enveloped RNA viruses cause illness ranging from the common influenza-like symptoms to more severe disease manifestations including acute respiratory distress syndrome (ARDS), coagulopathy, multi-organ failure and death.[7] COVID-19 is mostly asymptomatic in children having a strong transmission and its chest imaging findings are characteristic. Some patients have imaging findings earlier than clinical manifestations. The stages of imaging manifestations include early, advanced, and severe.[8]

One study suggested that 86% of all early COVID-19 infections in China remained undiagnosed having a lower transmission rate and their greater number suggests that they may have been the source of 79% of all early cases. Death is extremely rare in children with COVID-19 but it can occur inpatients that are already very sick due to underlying comorbidities.[2]In children with COVID-19, fever and cough are the most common clinical manifestations accompanied by fatigue, myalgia, nasal congestion, runny nose, sneezing, sore throat, headache, dizziness, vomiting, and abdominal pain. Few children do not exhibit fever, but only manifest cough or diarrhea or even remain as asymptomatic carriers as in our case. However, in some cases children exhibit atypical symptoms presenting as vomiting, diarrhea or only asthma and shortness of breath. According to a study, first ever severe case of childhood infectionwas reported in Wuhan, China in which child presented with gastrointestinal symptoms, but later on progressed rapidly to acute respiratory distress syndrome.[1,9]

One published study reported that out of 134 children diagnosed, 38% exhibited fever and 20% exhibited no fever. Most routine blood examinations were normal, and C-reactive protein levels were normal or transiently increased which is in consistent with our case report. Chest imaging was used as the basis for the diagnosis of pneumonia in these 134 children, 36 patients (27%) exhibited the common pattern (subclinical), two cases were critically ill (1.5%) and nine cases were completely asymptomatic with normal lung imaging (7%).[10]

A study published in early March 2020 suggests that children are just as likely as adults to become infected with this virus but are less likely to be symptomatic or develop severe symptoms.Children due to close family contacts may be susceptible to cross-infection as in this case.[5] According to existing epidemiological data, 56% (34/61) of children with COVID-19 demonstrated clear evidence of transmission through family gathering. In January 2020, 7-year-old boy and 10-year-old boy diagnosed with SARS-CoV-2 infection were admitted in hospital. They gained their disease from their parents and grandparents who developed fever, diarrhea, cough, and other symptoms, and were diagnosed with COVID-19 earlier than them. An epidemiological analysis of 31 children with COVID-19 in six provinces of northern China found that 21 (68%) had contact with an adult with confirmed disease.[1,11,12]

COVID-19 affects all age groups. Two studies investigating cases of COVID-19 reported that the majority of patients were 36 to 65 years of age and children ≤ 9 years and 10 – 19 years of age accounted for 1% of the total number cases and 3% of the patients were aged 80 years or older. The youngest of the confirmed child cases to date was merely 30 hours of age, and the oldest was 18 years.[1]

CONCLUSION

Patients with asymptomatic and mild disease including children play a major role in transmission and spread of COVID-19 in the community,

therefore, social distancing and preventive measures should be adopted for persons of all ages to slow the spread of the virus and protect the health care system from being overloaded and also to protect others who already have serious underlying medical conditions. Although children have mild forms of COVID-19 that does not mean that we should ignore those who have the disease. Preventive measures should be taken to prevent them from becoming infected as they are mostly asymptomatic carriers for others. Also, viruses can persist in faeces long after they are absent from nasopharyngeal secretions. Continuous monitoring and close follow-up in intensive care is the key to successful recovery in patients with Coronavirus infection without co-morbidities.

ACKNOWLEDGEMENT

Authors are thankful to the staff working at Bahria International Hospital Orchard, Lahore for providing technical support and data sharing for the write-up of this paper.

CONFLICT OF INTEREST:

The authors declare no conflict of interest; not even with any pharmaceutical company whose drugs are named in-text.

FINANCIAL DISCLOSURE

None to disclose.

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Author's Contribution

MS: Conception and design of study, acquisition of data, final approval of version to be published.

DJ: Acquisition of data.

MJ: Drafting the manuscript and revising critically for intellectual input.

SN: Interpretation of data, Intellectual input.

SA: Conception of study and final approval of the version to be published.

FF: Acquisition of relevant clinical data and literature, Drafting of manuscript.