

Short Notes

Recurrence of Positive SARS-CoV-2 RNA in 16 Discharged Children

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Abstract

The epidemic of Corona virus disease-19 (COVID-19) attributed to SARS-CoV-2 (formerly 2019-nCoV) has brought a worldwide public health threat since December 2019 in Wuhan, Hubei Province, China

INTRODUCTION

The epidemic of Corona virus disease-19 (COVID-19) attributed to SARS-CoV-2 (formerly 2019-nCoV) has brought a worldwide public health threat since December 2019 in Wuhan, Hubei Province, China [1]. It was reported that childhood cases were nonspecific and no children required respiratory support or intensive care [2]. Recently, recurrence of positive SARS-CoV-2

RNA test in some recovered adult patients has been reported [3-5]. However, there is rare report about children and their clinical characteristics still remains unknown. Here we describe the clinical characteristics of discharged pediatric COVID-19 with recurrence of positive SARS-CoV-2 RNA.

A total of 40 confirmed COVID-19 children discharged from Shenzhen Third People's Hospital from January 11, 2020 to May

Table 1: Clinical characteristic of 16 children with Recurrence of Positive SARS-CoV-2 RNA.

Patient (case number)	Age (y)	Gender	Time to diagnosis (d)	Symptoms and signs at first admission	Clinical classifications at first admission	Time from first discharge to re-admission (d)	Times admitted to hospital	Time from illness onset to the last discharge (d)
1	6	F	5	Fever and cough	Mild	4	4	60
2	0.75	F	1	NO	Ordinary	8	2	75
3	8	M	1	Nasal congestion	Ordinary	19	4	74
4	6	F	1	Fever	Ordinary	7	2	53
5	2	F	1	Fever	Ordinary	14	2	75
6	6	M	2	Cough	Ordinary	4	2	34
7	13	M	0.5	No	Mild	7	4	92
8	12	F	1	No	Mild	3	3	58
9	10	F	1	Running nose	Ordinary	14	3	89
10	13	M	1	Cough	Mild	90	3	124
11	6	F	0.5	No	Mild	44	2	75
12	10	F	5	Fever	Mild	32	2	67
13	13	F	0.5	No	Ordinary	31	4	80
14	13	M	0.5	No	Mild	36	2	70
15	8	F	0.5	No	Ordinary	3	2	34
16	17	F	1	wheeze	Mild	30	3	89

Table 2: Gender-Specific proportion of recurrence COVID-19.

Gender	Recurrence	No recurrence
male	5(31.3)	13(54.2)
female	11(68.7)	11(45.8)
total	16(100.0)	24(100.0)

Figures in brackets refer to percentage of total cases in the group

11, 2020 were enrolled in this study. All discharged COVID-19 children were continued to be isolated and observed for at least 14 days, weekly followed-up and nucleic acid testing of pharyngeal and rectal swabs were performed timely. The children with recurrence were re-admitted to hospital for further medical observation and their close contacts were also followed-up. Those children without recurrence were also followed-up outside the hospital.

By May 15, 2020, a total of 40 children were diagnosed as COVID-19 in Shenzhen, China. Overall, 16 children (40.0%, 16/40) showed recurrence of positive SARS-CoV-2 RNA in convalescence and were re-admitted to the only designated treatment center for SARS-CoV-2 in Shenzhen. During hospitalization of the first time, 8 were mild and 8 were ordinary COVID-19 (Table 1). Of the 16 cases, 5 were male and 11 female. The girls have relatively higher chance of recurrence than boys ($P = 0.004$) (Table 2).

The time from discharge to second admission ranged from 3 to 90 days (median time 14 days). Sustained remission of chest CT imaging was observed, symptoms were not seen among 15 cases (apart from case 10 had mild fever). 4 children tested positive over and over again and were admitted for four times. Up to May 11, 2020, all of 17 close contacts were tested negative for SARS-CoV-2 RNA, and no suspicious clinical symptoms were observed in those close contacts and positive SARS-CoV-2 IgM showed in all children.

According to our data, the recurrence of positive SARS-Cov-2 RNA occurred more often in girls than in boys. During the second admission, there was positive SARS-CoV-2 IgM in those children and the majority of them were asymptomatic. Their close contacts were not infected.

The time from illness onset to the last discharge ranged from 34 to 124 days. These children stayed at hospital or at designated hotel during the period. Long time isolation contributed to the children and their parents' anxiety and it is necessary to strengthen psychotherapy and humanistic care to these people.

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