

Online-Only Supplement

Clinical Characteristics of Asymptomatic and Symptomatic Pediatric Coronavirus Disease 2019 (COVID-19): A Systematic Review

Table S1. Summary profiles of asymptomatic patients.

Table S2. Summary profiles of symptomatic patients.

References

Table S1. Summary profiles of asymptomatic patients.

Author (year)	Age / Sex	Country	Presenting symptoms	Lab findings				Image findings	Remarkable past history	ICU admission	ARDS	Treatment	Outcome	Survival
				Others	CBC	CRP	Chemistry							
1. Li et al. (2020)[1]	1Y5		-			9.4mg/L		Four days after admission, patchy ground-glass opacification of the right upper lobe. Five days subsequently, during antiviral treatment, normalized.		Yes		Antiviral, anti-infective therapy, immunoglobulin therapy, interferon, Lianhua qingwen granules	Remain in hospital for observation; 24 days at time of writing	Alive
	10		-		WBC			Not performed.		Yes		Montelukast Na chewable tablets, immunoglobulin therapy	Discharged home	Alive
	M/F				14.8*10 ⁹ /L									
	4Y/M		-					Two days after admission, patchy ground-glass opacification of the left lower lobe. Five days subsequently, during symptomatic and supportive care, normalized.		Yes		Montelukast Na chewable tablets, immunoglobulin therapy	Discharged home	Alive
	6Y/M		-					Not performed.		?		Interferon, Montelukast Na chewable tablets, immunoglobulin therapy	Remain in hospital for observation; 13 days at time of writing	Alive
2. Wang et al.	36h /M	China	-					CT: high-density nodular shadow under	-	-	-	No special treatment was	Discharged	Alive

(2020)[2]							the pleura of the posterior segment of the upper lobe of the right lung						given	
3. Cao et al. (2020)[3]	17d /M	China	-	-										
4. Xu et al. (2020)[4]	13Y /M	China	-	Decreased leukocytes, decreased neutrophils									A-interferon oral spray	Alive
5. Ma et al. (2020)[5]	3Y/ M	China	-											Improved Alive
	2Y/ F	China	-											Improved Alive
	11 M/ M	China	-											Improved Alive
	9Y/ F	China	-											Improved Alive
6. Zeng et al. (2020)[6]	2d/ M	China	-	Leukocytosis, thrombocytopenia	<i>Enterobacter</i> agglomerate s-positive blood culture, coagulopathy	CT: pneumonia		Neonatal respiratory distress syndrome, pneumonia						Negative Alive
7. Wei et al. (2020)[7]	8M/ F	China	-										No	
8. See et al. (2020)[8]	9Y/ M	Malaysia (from china)	-				X-ray: Rt perihilar opacities	None	No	No	None			Alive

13. Hu et al. (2020)[13]	10Y /F	China	-	Normal	-		CT typical ground-glass/patchy shadows							
	5Y/M	China	-	Abnormal lymphocyte	Abnormal procalcitonin, D-dimer		-							
	8Y/F	China	-		Abnormal procalcitonin level		-							
	14Y /F	China	-	-	-		-							
	6Y/M	China	-	Abnormal lymphocyte	Abnormal LDH, ALT		-							
	15Y /M	China	-		Abnormal ALT		CT typical ground-glass/patchy shadows							
14. Chan et al. (2020)[14]	10Y /M	China	-		Elevated alkaline phosphatase		CT ground glass	None	No	No	Supportive care	Stable	Alive	
15. Kam et al. (2020)[15]	6M/M	Singapore	-	Neutropenia d8 (absolute neutrophil count $0.9 \times 10^9/L$)	-	Persistent positive PCR for 16 days	Not performed	-	No	No	None	Improved	Alive	
16. Tang et al. (2020)[16]	10Y /M		-	Normal	Normal		-							
	10Y /M	China										Resolved	Alive	
17. Qian et al. (2020)[17]	1Y/F		-	-	-		-							
18. Lu et	-/F		-	Normal	Normal		Ground glass and							

al. (2020)[18]]					patchy opacities in both lungs
	-/M	-	Normal	Normal	-
19. Pan et al. (2020)[19]]	3Y/ M	-	Normal	Normal	-
20. Tong et al. (2020)[20]]	12Y /M	-	-	-	-
21. Gautret et al. (2020)[21]]	10Y /M	-	-	-	-
	12Y /F	-	-	-	-
	14Y /F	-	-	-	-
	10Y /M	-	-	-	-
22. Su et al. (2020)[22]]	2Y/ F	-	-	Increased CK- MB	-
	3Y/ F	-	Thrombop enia	Increased CK- MB	Pneumonia
	5Y/ F	-	-	Increased CK- MB	-
	1Y/ M	-	-	Increased CK- MB	Ground glass opacities, consolidation
	1Y/ M	-	-	Increased CK- MB	-
	9Y/ F	-	-	-	Bronchitis

23. Yao et al. (2020)[23]	4Y/ M	-	Normal	Normal	-							
	1Y/ F	-	Normal	Normal	-							
24. Lan et al. (2020)[24]	7Y/ M	China	Normal	Normal	Normal	Normal	No	No	Discharged	Alive		
	7Y/ F	China	Normal	Normal	High ALT (520), high AST (439)	Normal	Ground glass opacities, consolidation	No	No	Discharged	Alive	
	12Y/ F	China	Normal	Normal		Normal	Ground glass opacities	No	No	Discharged	Alive	
	13Y/ M	China	Normal	Normal		Normal	Ground glass opacities	No	No	Discharged	Alive	

*Sun et al. (2020). Treatment in () means other treatments.

†Lou et al. did state that two of the three patients presented nasal congestion and rhinitis, but did not specify which.

Abbreviation: ALT(alanine transferase), ARDS(acute respiratory distress syndrome), AST(aspartate transferase), CBC(complete blood count), CK(creatine kinase), CK-MB(creatine kinase-myocardial band), Cr(creatinine), CRP(C-reactive protein), EEG(electroencephalography), ESR(Erythrocyte sedimentation ratio), GI(gastrointestinal), Hb(hemoglobin), ICU(intensive care unit), IL(interleukin), LDH(lactate dehydrogenase), PCR(polymerase chain reaction), TNF(tumor necrotizing factor), WBC(white blood cell).

Table S2. Summary profiles of symptomatic patients.

Author (year)	Age /Sex	Country	Presenting symptoms				Lab findings				Image findings	Remarkable past history	ICU admission	ART	Treatment	Outcome	Survival
			Fever	Respiratory	GI	Others	CBC	CRP	Chemistry	Others							
1. Li et al. (2020)[1]	3 Y/M		Fever	Cough, Sputum, Runny nose	-	-	WBC 15.0*10 ⁹ /L					Nine days after onset of symptoms, patchy ground-glass opacification of the left lower lobe. Seven days subsequently, during antiviral treatment, normalized.	?		Antiviral, anti-infective therapy, immunoglobulin therapy	Discharged home	Alive
2. Liu et al. (2020)[2,5]	3 Y/F	China	High fever (>39 °C)	Cough, Tachypnea, Pharyngeal congestion, Swollen tonsils	Vomiting	-	Low WBC, low neutrophil count, low lymphocyte count, low Hb	High CRP	High D-dimer, high AST, low Cr, high LDH, high Mg, low bicarbonate			Patchy ground-glass opacities in both lungs	Yes		Ribavirin, Oseltamivir, Glucocorticoids, Supplemental oxygen, Intravenous immune globulin		
	7 Y/F	China	High fever (>40 °C)	Cough, Pharyngeal congestion, Swollen tonsils	-	-	Low lymphocyte count	High CRP	Low Cr, low bicarbonate			NA	No		Oseltamivir		

3 Y/ F	China	High fever (>41 °C)	Cough, Pharyngeal congestion, Swollen tonsils	Vomiting	-	Low lymphocyte count, high ESR	High CRP	High D-dimer, high AST, low Cr, high LDH, low Na, low chlorine, high Mg, low bicarbonate	Patchy shadows in both lungs	No	Oseltamivir, Glucocorticoids
1 Y/ M	China	High fever (>42 °C)	Cough, Wheeze, Pharyngeal congestion, Swollen tonsils	-	-	Low WBC, low neutrophil count, low lymphocyte count, high AST, low Cr, low bicarbonate	High CRP		Patchy shadows in both lungs	No	Oseltamivir, Glucocorticoids
3 Y/ F	China	High fever (>43 °C)	Cough, Wheeze, Swollen tonsils	Vomiting	-	Low WBC, low lymphocyte count, high ESR	High CRP	High D-dimer, high ALT, high AST, low Cr, low Na, low bicarbonate	Patchy shadows in both lungs	No	Oseltamivir, Glucocorticoids
4 Y/ M	China	High fever (>44 °C)	Cough, Pharyngeal congestion, Swollen	Vomiting	-	Low WBC, low neutrophil count, low lymphocyte count		Low Cr, low Na, low bicarbonate	Normal	No	Ribavirin, Oseltamivir

		tonsils												
3. Sun et al. (2020)[26]*	8 Y/M	Fever	Cough, Expector ation, Polypnea	-	-	Low leukocytes, low neutrophils, low lymphocytes, low Hb	High CRP	High procalcitonin, high LDH, high ALT	Bilateral pneumonia, Multiple patch-like shadows, GGO, “white lung” appearance	Acute lymphocytic leukemia (infection with Influenza A virus)	Yes	Oxygen therapy, Mechanical Ventilation, Antibiotic treatment, Antiviral treatment, Glucocorticoids, Intravenous immunoglobulin therapy, (Traditional Chinese medicine)*	Remained in ICU	Alive
	10 M/F	-	Cough, Expector ation, Polypnea	Constipation, Nausea, Vomiting	-	High leukocytes, high neutrophils, low thrombocyte, low Hb	High CRP	High procalcitonin, high LDH, high ALT, high CK, high D-dimer	Bilateral pneumonia, Multiple patch-like shadows, pleural effusion, GGO	Lacrimal sac dredge	Yes	Oxygen therapy, Antibiotic treatment, Antiviral treatment, Glucocorticoids, Intravenous immunoglobulin therapy, (Enterostomy, hemopurification, transfusions of red blood cell, plasma and thrombocyte)	Remained in ICU	Alive
	1 Y1 M / M	Fever	Polypnea	Diarrhea, Nausea, Vomiting	-	Low Hb	Low creatinine, high D-dimer	Bilateral pneumonia, Multiple patch-like shadows, GGO			Yes	Oxygen therapy, Mechanical Ventilation, Antibiotic treatment, Antiviral treatment, Glucocorticoids,	Discharged	Alive

										(Plasmapheresis)			
2 M / M	-	Cough, Expectoration, Polypnea	Nausea, Vomiting	-	High lymphocytes, high thrombocyte		High procalcitonin, high LDH, high ALT, low Cr	Unilateral pneumonia, Multiple patch-like shadows	Yes	Oxygen therapy, Antiviral treatment	Discharged	Alive	
2 Y 1 M / M	Fever	Cough, Polypnea	Diarrhea, Nausea, Vomiting	-		High CRP	High procalcitonin, high LDH, low AST, high ALT, high Cr kinase, low Cr	Bilateral pneumonia, Multiple patch-like	Pharyngitis	Yes	Antibiotic treatment, Antiviral treatment	Discharged	Alive
15 Y/ F	Fever	Cough, Polypnea	Diarrhea	-	Mildly High leukocytes, mildly high neutrophils, mildly high lymphocytes, high thrombocyte		High LDH, low AST, low ALT, high Cr	Bilateral pneumonia, Multiple patch-like shadows, GGO	Yes	Antibiotic treatment, Antiviral treatment, Glucocorticoids, Intravenous immunoglobulin therapy, (Traditional Chinese medicine)	Discharged	Alive	
13 Y 11 M / M	Fever	Cough, Polypnea	-	-	Mildly high Hb	High CRP	High procalcitonin, low AST	Bilateral pneumonia, GGO	Yes	Oxygen therapy, Antiviral treatment, Glucocorticoids, Intravenous immunoglobulin therapy, (Traditional Chinese medicine)	Discharged	Alive	

	13		Fever	Expectoration, Polypnea	-	-			Low AST, low ALT, high Cr	Unilateral pneumonia, Multiple mottling, GGO		Yes	Oxygen therapy, Antiviral treatment, (Traditional Chinese medicine)	Remained in ICU	Alive	
4. Ji et al. (2020)[27]	15	China	Fever (37.9 °C)	Pharyngeal congestion	-	-	WBC 11.82*10 ⁹ /L (67.3% neutrophils, 25.7% lymphocytes)	34.6 4 mg/ L		Normal	-	-	-	Symptomatic treatment was given	Symptoms disappeared after treatment for two days	Alive
	9	China	-	Small amount of sputum	Mild diarrhea	-	WBC 6.6*10 ⁹ /L (34.1% neutrophils, 52% lymphocytes)	3.49 mg/ L		Normal	-	-	-	Oral probiotic	Symptoms disappeared after treatment for two days	Alive
5. Park et al. (2020)[28]	10	Korea	Fever	Sputum	-	-	WBC 4,080/μL (37.3% lymphocytes), Hb 13.5g/dl, platelet count 251,000/μL	<0.4 mg/ dl		CT: Patchy or nodular consolidations with peripheral ground glass opacities in subpleural areas of the right lower lobe	-	-	-	-	-	-
6. Cao et al. (2020)[31]	3	China	Fever	-	-	-	WBC 9690/mm ³ (45% neutrophils, 44% lymphocytes)			CT: mildly increased infiltrates at bilateral lung				Supportive treatment	Discharged	Alive

	7 Y/ M	China	Fever	-	-	-	-			-	-	-	-	-	-
	-	China	-	Runny nose	Vomiting	-	WBC 7660/mm ³ (15% neutrophils, 73% lymphocytes)		CT: mildly increased bilateral linear opacities					-	-
	30 h/ -	China	-	Respiratory distress without fever	-	-	-			-	-	-	-	-	-
	1 Y/ M	China	Fever	Respiratory distress	Diarrhea, Vomiting	-	-		CT: showed pneumonia	-	Yes	-	Assisted ventilation, continuous venovenous hemofiltration	Recovered gradually	Alive
7. Cui et al. (2020)[29]	55 D /F	China	-	Dry cough, Rhinorrhea	-	-	Elevated lymphocyte, platelet	Elevated AST/ALT, CK	CT: Patchy shadows and GGO in Rt. lung	-	No	No	Inhaled interferon α -1b, amoxicillin potassium clavulanate, reduced glutathione, ursodeoxycholic acid, traditional Chinese medicine lotus qingwen	Improved	Alive
8. Spiteri et al. (2020)[30]	4 ca se s ≤ 17	Europe	-	-	-	-									

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9. Xu et al. (2020)[4]	6	China	Fever	Cough	Diarrhea	-	Elevated neutrophils, decreased lymphocytes, elevated ESR	Elevated procalcitonin		A-interferon oral spray, azithromycin, IVIG	Alive
	12	China	Fever	Sore throat, Rhinorrhea	-	-	Decreased leukocytes, Decreased lymphocytes	Increased procalcitonin		A-interferon oral spray	Alive
	7	China	Fever	Cough, Sore throat	Diarrhea	-	Decreased lymphocytes	Increase CRP	Increased procalcitonin	A-interferon oral spray	Alive
	1	China	Fever	-	-	-	Decreased neutrophils, increased lymphocytes, increased ESR	Increased AST		A-interferon oral spray	Alive
	3	China	-	Rhinorrhea	-	-	None			A-interferon oral spray	Alive
	15	China	Fever	-	-	-	Decreased leukocytes, decreased neutrophils,	Increase CRP		A-interferon oral spray	Alive

							increased ESR								
	13 Y/ M	China	Feve r	Cough, Sore throat	-	-		Incr ease d CRP	Increased procalcito nin				A-interferon oral spray		Alive
	2 M /F	China	-	Cough, Sore throat	-	-	Decreased neutrophil, increased lymphocyt es		Increased AST/ALT, increased procalcito nin				A-interferon oral spray		Alive
	1 Y/ M	China	Feve r	Cough	Diarr hea	-	Not available						A-interferon oral spray		Alive
10. Liu et al. (2020)[3 1]	5 Y/ F	China	Feve r	Cough	-	Fatig ue	Decreased leukocyte count, decreased neutrophil ratio, increased lymphocyt e count, increased lymphocyt e ratio		Normal		No	N o	-	Stable	Alive
	11 M / M	China	Feve r	Cough	-	-	Decreased neutrophil ratio, increased lymphocyt e count, increased lymphocyt e ratio		Single consolidation		No	N o	-		Alive
	9 Y/ F	China	Feve r	-	-	-	Decreased lymphocyt e ratio		GGO		No	N o	-		Alive

	2 M / M	China	-	Cough	-	Fatigue	Increase d CRP		Multiple consolidations	No	No	-	Alive
11. Zhang et al. (2020)[32]	9 Y/ M		Fever	Nasal congestion, Sore throat, Runny nose	Gastric appetite, Nausea	Muscle pain, Headache	Mild high WBC		High CRP, low CK		High IL-6	Interferon, Chinese medicine, vitamin C, antibiotic application	
	6 Y/ M		-	Cough	-	-	High Hb		Low CK			Interferon, Chinese medicine, vitamin C	
	8 Y/ M		Low grade fever	Nasal congestion, Rhinorrhea	-	-	High Hb, low neutrophil ratio, high lymphocyte ratio		Low ALT, low CK			Interferon, Chinese medicine, vitamin C	
12. Le et al. (2020)[33]	3 M /F	Vietnam	Fever	Rhinorrhea	-	Myalgia	Mild high WBC		High CK	Yes		Azithromycin,	Discharged
13. Ma et al. (2020)[51]	8 Y/ F	China	Fever	-	-	-							Improved Alive
	3 Y/ F	China	Fever	-	-	-							Improved Alive
14. Lou et al. (2020)[34][†]	6 Y/ F	China	Fever	Cough	-	-						Interferon- α 2b	
	8 Y/ F	China	Fever	-	-	-						Interferon- α 2b	

	6 M / M	China	Feve r	-	-	-										
15. Li et al. (2020)[35]	10 M / M	China	Feve r	-	-	-	Increased lymphocytes	Increase d CRP			CT: diffuse GGO					
16. Dong et al. (2020)[36]	3 Y/ M	China	-	Cough with phlegm	-	-	Normal	Normal	Normal	Normal serum IgE	CT: signs of pneumonia in the left upper lobe	Allergic rhinitis Community-acquired pneumonia (CAP)	Inhalation of interferon- α Supportive care	Discharged	Alive	
	2 Y 4 M / M	China	Feve r (39.2 °C)	-	-	-	Normal	Normal	Normal	Serum IgE level: 173 IU/ml	CT: bilateral pneumonia	Atopic dermatitis	Inhalation of interferon- α Supportive care	Discharged	Alive	
17. Zeng et al. (2020)[61]	2 d/ M	China	Feve r	-	-	Lethargy	Normal				CT: pneumonia	Yes		Negative	Alive	
	2 d/ M	China	Feve r	-	Vomiting	Lethargy	Leukocytosis, lymphocytopenia		Elevated CK-MB fraction		CT: pneumonia			Negative	Alive	
18. Su et al. (2020)[22]	3 Y 7 M /F	China	Feve r	-	-	-	WBC 7.55*10 ⁹ /L (20.4% neutrophils, 73.6% lymphocytes)	0.35 mg/L			Bronchitis			Discharged	Alive	
	8 Y	China	Feve r	-	-	-	WBC 3.78*10 ⁹ /L	0.19 mg/			Negative			Discharged	Alive	

	Y/ F		r	ea			neutrophil			Treatment, Antibiotic
	3 M /F	China	Feve r	-	-	-	Increased lymphocyt e, Increased PLATELET	Increased AST		Symptomatic Treatment, Antibiotic
	4 Y/ F	China	-	Cough	-	-	Decreased neutrophil	Increased CK-MB	X-ray: Opacities in Rt. Lung	Symptomatic Treatment, Antibiotic
	8 Y/ M	China	Feve r	Sore throat	-	-	Increased WBC, Increased PLATELET	Increased CK-MB		Symptomatic Treatment, Antibiotic
	5 Y/ M	China	Feve r	Cough	-	-	Increased WBC			Symptomatic Treatment, Antibiotic
20. Wei et al. (2020)[7 1]	9 M /F	China	Feve r	-	-	-				No
	11 M /F	China	Feve r	-	-	-				No
	10 M / M	China	-	-	-	-				No
	7 M /F	China	Feve r	-	-	-				No
	1 M /F	China	-	Cough, Rhinorrh ea	-	-				No
	3 M /F	China	-	Cough, Sputum	-	-				No
	3	China	Feve	-	-	-				No

	M																
	/F																
	6	China	-	-	-	-											No
	M																
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	M																
21. Odievre et al. (2020)[38]	16 Y/F	France	Isolated fever	Respiratory distress syndrome, Superficial tachypnea 80/min	-	Acute chest pain, Tachycardia 140/min	355 mg/L	LDH 446 U/L, D-dimer 23,611 ng/ml	Spo2 85%, high IL-6 629 pg/ml, high TNF- α 32.5pg/ml, normal IL-1 β normal	CTPA: bilateral pulmonary embolism complicating the ACS, bilateral consolidations with a halo sign on the right side	Homozygous SCD with bilateral ischemic retinopathy, exchange transfusions from 5 to 11yrs old, switched, thereafter for hydroxyurea	Yes	Yes	Non-invasive ventilation, red blood cell exchange transfusion followed by simple transfusion (hemoglobin nadir 6.4 g/dl), anticoagulation, 1 pulse of intravenous Tocilizumab (TCZ, 8 mg/kg),	Recover	Alive	
22. Wu et al. (2020)[39]	2 Y/M	China	-	-	-	Conjunctivitis, Eyelid dermatitis	High lymphocyte (4.48*10 ⁹ /L)	High myoglobin	CT: normal			No	No	National protocol in China	Recover	Alive	
23. Dugue et al. (2020)[40]	6 wks / M	USA	Fever (38.4 °C)	Cough	-	Mild hypertension (114/57), seizure	WBC 5.07 *10 ³ / μ L, normal differentiation	Procalcitonin(0.21ng/ml), e' normal	Rhinovirus/enterovirus PCR positive, abnormal	Brain MRI: normal	MRI: None	No	No		Discharged	Alive	

														EEG	
24. See et al. (2020)[8]	18	Malaysia (from china)	Mild fever	-	Diarrhea	-			Renal and liver profile normal		None	No	No	Paracetamol and Oral Rehydration Salts	Alive
	4	Malaysia (from china)	Intermittent fever	Cough (2-4 weeks), Rhinorrhea	-	-			No blood Cx		None	No	No	Paracetamol, oral penicillin V, loratadine	Alive
	11	Malaysia (from china)	-	Mild cough (later diagnosed as asthma)	-	-			X-ray: perihilar opacities		None	No	No	MDI salbutamol prn	Alive
25. Yang et al. (2020)[10]	37	China	-	Vomiting	Hypoglycemia	-	Normal CBC	Normal	High myoglobin, high CK-MB, high D-dimer (2591)			Yes		Discharged	Alive
	36	China	-	-	-	Moan, spit	Normal CBC	Normal	High procalcitonin (48hrs), high myoglobin, high CK-MB, high D-dimer (611)	X-ray: (premature) bilateral GO, granular high-density shadows		Yes	NCPAP	Discharged	Alive
	36	China	-	-	-	Moan	Normal CBC	Normal	High AST (74)>48hr			Yes	NCPAP	Discharged	Alive

									normal (46), high myocardia l globin, high CK- MB						
26. Tan et al. (2020)[1 1]	9 Y 5 M /F	China	-	Cough	Abdo minal pain	-	Normal CBC	Nor mal	High AST		CT: GGO	None	No oxygen, no antiviral	Discharged	Alive
	11 Y 8 M /F	China	-	Cough	-	-	Normal CBC	Nor mal	Normal			None	No oxygen, no antiviral	Discharged	Alive
	2 Y/ F	China	Feve r	Vomiting	-	Conv ulsio n	Normal CBC	Nor mal	High AST, high CK	Myco plasm a 1:160	CT: GGO	None	No oxygen, no antiviral	Discharged	Alive
	8 Y 9 M / M	China	Feve r	-	Const ipatio n	-	Normal CBC	Nor mal	Normal	Myco plasm a 1:160		None	No oxygen, no antiviral	Discharged	Alive
	12 Y 1 M / M	China	Feve r	-	-	-	Normal CBC	Nor mal	Normal			None	No oxygen, no antiviral	Discharged	Alive
	9 Y 3 M /F	China	-	Cough	-	-	Normal CBC	Nor mal	Normal	Myco plasm a 1:80	CT: GGO, multiple nodule shadows	None	No oxygen, no antiviral	Discharged	Alive
	3	China	Feve r	-	-	-	Normal CBC	Nor mal	Normal		CT: GGO	None	No oxygen, no antiviral	Discharged	Alive

	Y 7 M /F		r				CBC	mal						antiviral		
27.	10 M /F	China	Fever	Dry cough	-	Malaise	High WBC, high lymphocyte, low Hb,		High AST, low Cr, high LDH		None	No	No	Oseltamivir	Recover	Alive
28.	4 M /F	Italy	Fever	Cough, rhinorrhea, respiratory distress						CXR: normal	None			Low-flow oxygen		
	11 M /M	Italy		Respiratory distress	Vomiting					CXR: normal	None			Low-flow oxygen		
	9 d/ F	Italy	Fever			Drowsiness, feeding difficulty		Not performed			None			High-flow oxygen		
	15 Y 5 M /F	Italy	Fever	Cough, rhinorrhea, respiratory distress			Thrombocytopenia		frequent respiratory tract infection	CXR: patchy and ground-glass-like opacity and interstitial changes in the lungs	None			Low-flow oxygen		
	12 Y 6 M /	Italy		Cough, respiratory distress	Nausea, vomiting					CXR: pneumonia	Autism			High-flow oxygen		

	M													
	8 d/ M	Italy	Fever							None			Low-flow oxygen	
	6 Y 5 M /F	Italy	Fever										High-flow oxygen	
	2 M / M	Italy	Fever	Cough									Non-invasive ventilation	
	14 Y 5 M / M	Italy		Cough, respiratory distress									Mechanical ventilation	
29. Lee et al. (2020)[42]	15 Y/ F	USA	Fever	Cough	Abdominal pain	Decreased oral intake, fatigue	WBC 1460/uL, ANC 800cells/uL	Elevated ferritin, CRP, D-dimer, pro-BNP	Unremarkable	Familial dilated cardiomyopathy status post 3 rd heart transplantation & 1 st kidney		2L nasal cannula O2	Discharged	Alive

								transplan 5 mo prior, on cyclospori ne, mycophen olate sodium, and low- dose prednisone , recent total lymphoid irradiation			
13 M / M	USA		Non- producti ve cough, sneezing		Normal	Nor mal	Normal	Hypoplasti c left heart syndrome, post- positive cross- match heart transplant 6 mo prior, tacrolimus, on mycophen olate mofetil, and low- dose prednisone	No change in medications (immunosuppre ssion)	Discharged	Alive
30. Musoli no, et al. (2020)[4	13 Y/ M	Italy	Fever Cough					Not performed			

3]								
1	Italy	Fever	Cough		High WBC	33.6 mg/L		Not performed
Y/ F								
15	Italy	Fever	Cough	Chest pain				CXR: interstitial
Y/ F								
1	Italy	Fever	Cough					Not performed
Y/ F								
15	Italy			Seizure (not related)				Consolidation
Y/ M								
6	Italy							Not performed
Y/ M								
16	Italy	Fever	Cough	Chest pain, anosmia	Low WBC			Ground glass opacities
Y/ F								
10	Italy	Fever		Diarrhea	Arthralgia, headache			Not performed
Y/ M								
12	Italy	Fever		Diarrhea	Arthralgia, headache			Not performed
Y/ M								
7	Italy	Fever			Arthralgia			Not performed
Y/ M								

*Sun et al. (2020). Treatment in () means other treatments.

†Lou et al. did state that two of the three patients presented nasal congestion and rhinitis, but did not specify which.

Abbreviation: ALT(alanine transferase), ANC(absolute neutrophil count), ARDS(acute respiratory distress syndrome), AST(aspartate transferase), CBC(complete blood count), CK(creatine kinase), CK-MB(creatine kinase-myocardial band), Cr(creatinine), CRP(C-reactive protein), Cx(complication), EEG(electroencephalography), ESR(Erythrocyte sedimentation ratio), GI(gastrointestinal), Hb(hemoglobin), ICU(intensive care unit),

mo(month), IL(interleukin), LDH(lactate dehydrogenase), NA(not available), NCPAP(nasal continuous positive airway pressure) PCR(polymerase chain reaction), TNF(tumor necrotizing factor), WBC(white blood cell).

References

- [1] Li W, Cui H, Li K, Fang Y, Li S. Chest computed tomography in children with COVID-19 respiratory infection. *Pediatr Radiol.* 2020;50:796-9.
- [2] Wang S, Guo L, Chen L, Liu W, Cao Y, Zhang J, et al. A case report of neonatal COVID-19 infection in China. *Clin Infect Dis.* 2020.
- [3] Cao Q, Chen YC, Chen CL, Chiu CH. SARS-CoV-2 infection in children: Transmission dynamics and clinical characteristics. *J Formos Med Assoc.* 2020;119:670-3.
- [4] Xu Y, Li X, Zhu B, Liang H, Fang C, Gong Y, et al. Characteristics of pediatric SARS-CoV-2 infection and potential evidence for persistent fecal viral shedding. *Nat Med.* 2020;26:502-5.
- [5] Ma X, Su L, Zhang Y, Zhang X, Gai Z, Zhang Z. Do children need a longer time to shed SARS-CoV-2 in stool than adults? *Journal of Microbiology, Immunology and Infection.* 2020;53:373-6.
- [6] Zeng L, Xia S, Yuan W, Yan K, Xiao F, Shao J, et al. Neonatal Early-Onset Infection With SARS-CoV-2 in 33 Neonates Born to Mothers With COVID-19 in Wuhan, China. *JAMA Pediatr.* 2020.
- [7] Wei M, Yuan J, Liu Y, Fu T, Yu X, Zhang ZJ. Novel Coronavirus Infection in Hospitalized Infants Under 1 Year of Age in China. *Jama.* 2020;323:1313-4.
- [8] See KC, Liew SM, Ng DCE, Chew EL, Khoo EM, Sam CH, et al. COVID-19: Four Paediatric Cases in Malaysia. *Int J Infect Dis.* 2020;94:125-7.
- [9] Poli P, Timpano S, Goffredo M, Padoan R, Badolato R. Asymptomatic case of Covid-19 in an infant with cystic fibrosis. *J Cyst Fibros.* 2020.
- [10] Yang P, Wang X, Liu P, Wei C, He B, Zheng J, et al. Clinical characteristics and risk assessment of newborns born to mothers with COVID-19. *J Clin Virol.* 2020;127:104356.
- [11] Tan YP, Tan BY, Pan J, Wu J, Zeng SZ, Wei HY. Epidemiologic and clinical characteristics of 10 children with coronavirus disease 2019 in Changsha, China. *J Clin Virol.* 2020;127:104353.
- [12] Zhang B, Liu S, Dong Y, Zhang L, Zhong Q, Zou Y, et al. Positive rectal swabs in young patients recovered from coronavirus disease 2019 (COVID-19). *J Infect.* 2020.
- [13] Hu Z, Song C, Xu C, Jin G, Chen Y, Xu X, et al. Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China. *Sci China Life Sci.* 2020;63:706-11.
- [14] Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet.* 2020;395:514-23.
- [15] Kam KQ, Yung CF, Cui L, Lin Tzer Pin R, Mak TM, Maiwald M, et al. A Well Infant with Coronavirus Disease 2019 (COVID-19) with High Viral Load. *Clin Infect Dis.* 2020.
- [16] Tang A, Tong ZD, Wang HL, Dai YX, Li KF, Liu JN, et al. Detection of Novel Coronavirus by RT-PCR in Stool Specimen from Asymptomatic Child, China. *Emerg Infect Dis.* 2020;26:1337-9.
- [17] Qian G, Yang N, Ma AHY, Wang L, Li G, Chen X, et al. A COVID-19 Transmission within a family cluster by presymptomatic infectors in China. *Clin Infect Dis.* 2020.
- [18] Lu S, Lin J, Zhang Z, Xiao L, Jiang Z, Chen J, et al. Alert for non-respiratory symptoms of Coronavirus Disease 2019 (COVID-19) patients in epidemic period: A case report of familial cluster with three asymptomatic COVID-19 patients. *J Med Virol.* 2020.
- [19] Pan X, Chen D, Xia Y, Wu X, Li T, Ou X, et al. Asymptomatic cases in a family cluster with SARS-CoV-2 infection. *Lancet Infect Dis.* 2020;20:410-1.
- [20] Tong ZD, Tang A, Li KF, Li P, Wang HL, Yi JP, et al. Potential Presymptomatic Transmission of SARS-CoV-2, Zhejiang Province, China, 2020. *Emerg Infect Dis.* 2020;26:1052-4.
- [21] Gautret P, Lagier JC, Parola P, Hoang VT, Meddeb L, Mailhe M, et al. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *Int J Antimicrob Agents.* 2020:105949.
- [22] Su L, Ma X, Yu H, Zhang Z, Bian P, Han Y, et al. The different clinical characteristics of corona virus disease cases between children and their families in China - the character of children with COVID-19. *Emerg Microbes Infect.* 2020;9:707-13.
- [23] Yao P, Tang P, Jiang H, Gu B, Xu P, Wang X, et al. Clusters of Human Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Cov-2) infection in a non-epidemic area, China. 2020.
- [24] Lan L, Xu D, Xia C, Wang S, Yu M, Xu H. Early CT Findings of Coronavirus Disease 2019 (COVID-19) in Asymptomatic Children: A Single-Center Experience. *Korean J Radiol.* 2020;21:919-24.
- [25] Liu W, Zhang Q, Chen J, Xiang R, Song H, Shu S, et al. Detection of Covid-19 in Children in Early January 2020 in Wuhan, China. *N Engl J Med.* 2020;382:1370-1.
- [26] Sun D, Li H, Lu XX, Xiao H, Ren J, Zhang FR, et al. Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study. *World J Pediatr.* 2020.
- [27] Ji LN, Chao S, Wang YJ, Li XJ, Mu XD, Lin MG, et al. Clinical features of pediatric patients with COVID-19: a report of two family cluster cases. *World J Pediatr.* 2020.
- [28] Park JY, Han MS, Park KU, Kim JY, Choi EH. First Pediatric Case of Coronavirus Disease 2019 in Korea. *J Korean Med Sci.* 2020;35:e124.

- [29] Cui Y, Tian M, Huang D, Wang X, Huang Y, Fan L, et al. A 55-Day-Old Female Infant Infected With 2019 Novel Coronavirus Disease: Presenting With Pneumonia, Liver Injury, and Heart Damage. *J Infect Dis.* 2020;221:1775-81.
- [30] Spiteri G, Fielding J, Diercke M, Campese C, Enouf V, Gaymard A, et al. First cases of coronavirus disease 2019 (COVID-19) in the WHO European Region, 24 January to 21 February 2020. *Euro Surveill.* 2020;25.
- [31] Liu H, Liu F, Li J, Zhang T, Wang D, Lan W. Clinical and CT imaging features of the COVID-19 pneumonia: Focus on pregnant women and children. *J Infect.* 2020;80:e7-e13.
- [32] Zhang T, Cui X, Zhao X, Wang J, Zheng J, Zheng G, et al. Detectable SARS-CoV-2 viral RNA in feces of three children during recovery period of COVID-19 pneumonia. *J Med Virol.* 2020;92:909-14.
- [33] Le HT, Nguyen LV, Tran DM, Do HT, Tran HT, Le YT, et al. The first infant case of COVID-19 acquired from a secondary transmission in Vietnam. *Lancet Child Adolesc Health.* 2020;4:405-6.
- [34] Lou XX, Shi CX, Zhou CC, Tian YS. Three children who recovered from novel coronavirus 2019 pneumonia. *J Paediatr Child Health.* 2020;56:650-1.
- [35] Li D, Wang D, Dong J, Wang N, Huang H, Xu H, et al. False-Negative Results of Real-Time Reverse-Transcriptase Polymerase Chain Reaction for Severe Acute Respiratory Syndrome Coronavirus 2: Role of Deep-Learning-Based CT Diagnosis and Insights from Two Cases. *Korean J Radiol: Copyright © 2020 The Korean Society of Radiology;* 2020. p. 505-8.
- [36] Dong X, Cao YY, Lu XX, Zhang JJ, Du H, Yan YQ, et al. Eleven faces of coronavirus disease 2019. *Allergy.* 2020;75:1699-709.
- [37] Cai J, Xu J, Lin D, Yang Z, Xu L, Qu Z, et al. A Case Series of children with 2019 novel coronavirus infection: clinical and epidemiological features. *Clin Infect Dis.* 2020.
- [38] Odievre MH, de Marcellus C, Ducou Le Pointe H, Allali S, Romain AS, Youn J, et al. Dramatic improvement after tocilizumab of severe COVID-19 in a child with sickle cell disease and acute chest syndrome. *Am J Hematol.* 2020.
- [39] Wu P, Liang L, Chen C, Nie S. A child confirmed COVID-19 with only symptoms of conjunctivitis and eyelid dermatitis. *Graefes Arch Clin Exp Ophthalmol.* 2020.
- [40] Dugue R, Cay-Martinez KC, Thakur KT, Garcia JA, Chauhan LV, Williams SH, et al. Neurologic manifestations in an infant with COVID-19. *Neurology.* 2020;94:1100-2.
- [41] Parri N, Lenge M, Buonsenso D, Coronavirus Infection in Pediatric Emergency Departments Research G. Children with Covid-19 in Pediatric Emergency Departments in Italy. *The New England journal of medicine.* 2020;383:187-90.
- [42] Lee H, Mantell BS, Richmond ME, Law SP, Zuckerman WA, Addonizio LJ, et al. Varying presentations of COVID-19 in young heart transplant recipients: A case series. *Pediatr Transplant.* 2020;n/a:e13780.
- [43] Musolino AM, Supino MC, Buonsenso D, Ferro V, Valentini P, Magistrelli A, et al. Lung Ultrasound in Children with COVID-19: Preliminary Findings. *Ultrasound Med Biol.* 2020;46:2094-8.