

Supplemental Data Tables and Figures

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Supplemental Table 1: Number of patients and study sites per country

Country	Number of enrolled patients (% of total)	Total Number of Centres
USA	110 (20%)	19
Canada	2 (0·4%)	2
Puerto Rico	2 (0·4%)	1
Ireland	2 (0·4%)	1
Italy	48 (8·6%)	2
Portugal	7 (1·3%)	1
Spain	11 (2%)	1
Turkey	23 (4·1%)	2
Argentina	29 (5·2%)	8
Bolivia	2 (0·4%)	8
Chile	39 (7%)	11
Colombia	137 (25%)	20
Costa Rica	17 (3·1%)	11
Honduras	29 (5·2%)	1
Mexico	16 (2·9%)	1
Peru	83 (15%)	2
Uruguay	0	2
Panama	0	1

Total number of centres includes those that had IRB approval and screened but did not have patients included for this analysis. Countries considered low or middle income countries using the World Bank categories are noted in **bold**.

Supplemental Table 2: Comparison of symptoms at presentation, including symptom category and components of each category, between children who survived and those who died.

Symptoms	All	Survived (n=501)	Died (n=56)
Lower Respiratory	262 (47%)	221 (44%)	41 (73%)
Cough	209 (38%)	176 (35%)	33 (59%)
Wheeze	63 (11%)	50 (10%)	13 (23%)
Retractions	164 (29%)	128 (26%)	36 (64%)
Upper Respiratory	165 (30%)	154 (31%)	11 (20%)
Sore Throat	91 (16%)	87 (17%)	4 (7.1%)
Rhinorrhoea	95 (17%)	86 (17%)	9 (16%)
Ear Pain	6 (1%)	6 (1.2%)	0
Systemic	469 (84%)	423 (84%)	46 (82%)
Fever	428 (77%)	392 (78%)	36 (64%)
Fatigue	310 (56%)	280 (56%)	30 (54%)
Gastrointestinal	327 (59%)	304 (61%)	23 (41%)
Abdominal Pain	241 (43%)	226 (45%)	15 (27%)
Vomiting	238 (43%)	223 (45%)	15 (27%)
Diarrhoea	187 (34%)	174 (35%)	13 (23%)
Neurologic	214 (38%)	190 (38%)	24 (43%)
Headache	114 (20%)	108 (22%)	6 (11%)
Confusion	107 (19%)	87 (17%)	20 (36%)
Seizure	48 (8.6%)	40 (8%)	8 (14%)
Mucocutaneous	208 (37%)	198 (40%)	10 (18%)
Rash	147 (26%)	142 (28%)	5 (8.9%)
Conjunctivitis	118 (21%)	116 (23%)	2 (3.6%)
Skin Ulcers	8 (1.4%)	7 (1.4%)	1 (1.8%)
“Strawberry” Tongue/Oral Lesions	64 (12%)	63 (13%)	1 (1.8%)
Red Hands/Feet	105 (19%)	99 (20%)	6 (11%)
Non-Specific	299 (54%)	263 (52%)	36 (64%)
Chest Pain	44 (7.9%)	41 (8.2%)	3 (5.4%)
Myalgias	131 (24%)	124 (25%)	7 (13%)
Arthralgias	49 (8.8%)	46 (9.2%)	3 (5.4%)
Shortness of Breath	192 (34%)	160 (32%)	32 (57%)
Lymphadenopathy, general	53 (9.5%)	50 (10%)	3 (5.4%)
Lymphadenopathy, cervical	49 (9%)	46 (9.2%)	3 (5.4%)
Bleeding	14 (2.5%)	9 (1.8%)	5 (8.9%)

Data are n (%)

Supplemental Table 3: Association of Comorbidities and Clinical Presentation with Mortality. Odds ratios for mortality calculated using univariate logistic regression

Variable	Mortality with Variable	Mortality without Variable	Odds Ratio	95% CI
Comorbidities				
Cardiac	10/43 (23%)	46/514 (9%)	3·08	1·43, 6·66
Pulmonary (not asthma)	8/32 (25%)	48/525 (9·1%)	3·31	1·41, 7·78
Asthma	5/44 (11%)	51/513 (9·9%)	1·16	0·44, 3·08
Renal	3/22 (14%)	53/535 (9·9%)	1·44	0·41, 5·01
Liver	4/9 (44%)	52/548 (9·5%)	7·63	1·99, 29·3
Neurologic	9/58 (16%)	47/499 (9·4%)	1·77	0·82, 3·82
Malignancy	7/20 (35%)	49/537 (9·1%)	5·36	2·04, 14·1
Hematologic	5/18 (28%)	51/539 (9·5%)	3·68	1·26, 10·7
Obesity	4/74 (5·4%)	52/483 (11%)	0·47	0·17, 1·35
Diabetes	1/11 (9·1%)	55/491 (10%)	0·89	0·11, 7·11
Malnutrition	10/36 (28%)	46/521 (8·8%)	3·97	1·80, 8·75
>1 Comorbidity	26/119 (22%)	30/438 (6·9%)	3·80	2·15, 6·73
No Comorbidities	15/272 (5·5%)	41/285 (14%)	0·35	0·19, 0·64
Clinical Presentation				
Known COVID Exposure	23/240 (9·6%)	33/315 (10%)	0·91	0·52, 1·59
Ward Admission Pre-ICU	29/249 (12%)	23/278 (8·3%)	1·46	0·82, 2·60
Fever (>38·3°C) at Admission	6/112 (5·4%)	49/430 (11%)	0·44	0·18, 1·06
Admission O ₂ Saturation <94%	21/116 (18%)	34/417 (8·2%)	2·49	1·38, 4·49
Dehydration at Admission	10/87 (11%)	46/468 (9·8%)	1·19	0·58, 2·46
Delayed Admission Capillary Refill	25/141 (18%)	18/229 (7·9%)	2·53	1·32, 4·82
Presenting Symptoms				
Lower Respiratory	41/262 (16%)	15/295 (5·1%)	3·46	1·87, 6·42
Upper Respiratory	11/165 (6·7%)	45/392 (11%)	0·55	0·28, 1·09
Systemic	46/469 (9·8%)	10/88 (11%)	0·85	0·41, 1·75
Gastrointestinal	23/327 (7%)	33/230 (14%)	0·45	0·26, 0·79
Neurologic	24/214 (11%)	32/343 (9·3%)	1·23	0·70, 2·15
Mucocutaneous	10/208 (4·8%)	46/349 (13%)	0·33	0·16, 0·67
Non-Specific	36/299 (12%)	20/258 (7·8%)	1·63	0·92, 2·89

Statistically significant results in **bold**.

Supplemental Table 4: Laboratory abnormalities identified on hospital day 1 significantly* associated with mortality. Percentage calculated based on entire cohort.

	All (n=557)	Survived (n=501)	Died (n=56)
pH	7.36 (7.29, 7.40)	7.36 (7.30, 7.41)	7.31 (7.21, 7.39)
BUN (mg/dL)	16 (9, 30)	15 (9, 28)	19.5 (10, 39)
Sodium (mEq/L)	136 (133, 139)	136 (133, 139)	138 (135, 142)
Lactate (mmol/L)	2 (1.3, 3.3)	1.9 (1.2, 3.2)	2.5 (1.7, 4.6)
Procalcitonin > 2 ng/mL	65 (12%)	63 (12.6%)	2 (3.6%)
C-Reactive Protein (4 mg/dL)	10 (2.3, 20.1)	10 (2.4, 20.5)	4.9 (0.9, 10)
Fibrinogen (mg/dL)	450 (274, 639)	465 (279, 645)	248 (168, 446)
BNP >60 pg/mL	129 (23%)	122 (24%)	7 (13%)

Data are median (IQR) or n (%)

* p<0.05 using Wilcoxon rank-sum or chi-square test

Abbreviations: BUN = blood urea nitrogen; BNP = brain natriuretic peptide

SI Conversion Factors: To convert BUN, multiply by 0.357. To convert C-reactive protein, multiply by 10

Supplemental Table 5 Complete list of hospital diagnoses and complications including odds ratio for mortality of each diagnosis in univariate logistic regression analysis.

Diagnosis/Complication	Prevalence	Mortality		Odds Ratio	95% CI
		With Diagnosis	Without Diagnosis		
Viral Pneumonia/Pneumonitis	183 (33%)	27/183 (15%)	29/373 (7.8%)	2.05	1.18, 3.58
Bacterial Pneumonia	113 (20%)	22/113 (19%)	34/443 (7.7%)	2.91	1.62, 5.21
ARDS	157 (28%)	38/157 (24%)	18/400 (4.5%)	6.78	3.73, 12.3
Pneumothorax	15 (2.7%)	10/15 (67%)	46/541 (8.5%)	21.5	7.06, 65.6
Pleural Effusion	79 (14%)	10/79 (13%)	46/478 (9.6%)	1.36	0.66, 2.82
Bronchiolitis	26 (4.7%)	2/26 (7.7%)	54/531 (10%)	0.74	0.17, 3.20
Meningitis	29 (5.2%)	5/29 (17%)	51/528 (9.7%)	1.95	0.72, 5.33
Seizure	53 (9.5%)	12/53 (23%)	44/504 (8.7%)	3.06	1.50, 6.25
Stroke	19 (3.4%)	8/19 (42%)	48/491 (8.9%)	7.42	2.85, 19.3
Heart Failure	86 (15%)	23/86 (27%)	33/471 (7%)	4.85	2.67, 8.78
Myocarditis/Cardiomyopathy	101 (18%)	8/101 (7.9%)	48/456 (11%)	0.73	0.33, 1.60
Arrhythmia	39 (7%)	10/39 (26%)	46/518 (8.9%)	3.54	1.62, 7.72
Cardiac Arrest	56 (10%)	47/56 (84%)	9/501 (1.8%)	285	108, 754
Bacteraemia	68 (12%)	22/68 (32%)	33/488 (6.8%)	6.59	3.55, 12.2
Coagulopathy	98 (18%)	21/98 (21%)	35/459 (7.6%)	3.30	1.83, 5.98
Anaemia	198 (36%)	34/198 (17%)	22/359 (6.1%)	3.18	1.80, 5.60
Rhabdomyolysis	6 (1.1%)	0/6 (0%)	56/550 (10%)	-	-
Acute Kidney Injury	88 (16%)	24/88 (27%)	32/469 (6.8%)	5.12	2.84, 9.24
Gastroenteritis	11 (2%)	4/11 (36%)	52/546 (9.5%)	5.43	1.54, 19.2
Pancreatitis	13 (2.3%)	3/13 (23%)	53/543 (9.8%)	2.77	0.74, 10.4
Acute Hepatic Injury	51 (9.2%)	11/51 (22%)	45/506 (8.9%)	2.82	1.35, 5.87
MIS-C	188 (34%)	6/188 (3.2%)	50/368 (14%)	0.21	0.09, 0.50

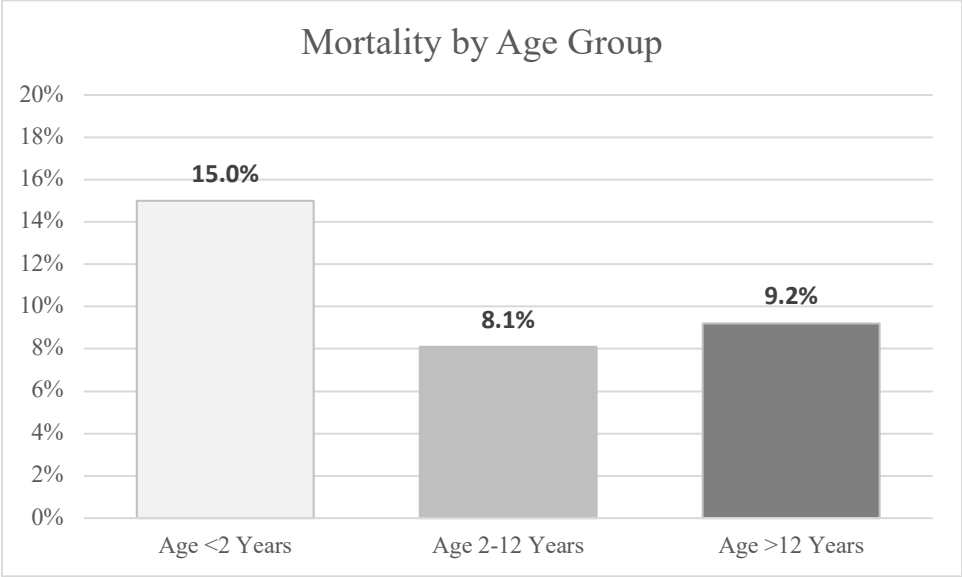
Data are n (%). Statistically significant results in **bold**.

Abbreviations: ARDS = acute respiratory distress syndrome; MIS-C = multisystem inflammatory syndrome in children

Supplemental Table 6. Mortality rates for factors significantly associated with mortality in adjusted logistic regression stratified by age.

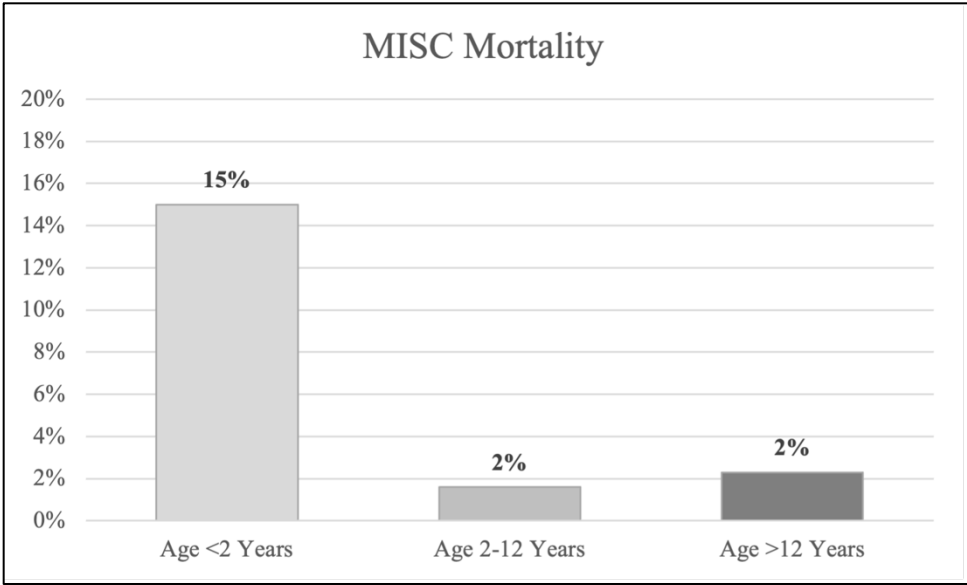
Variable	<2 years old		≥2 years old	
	<u>Mortality</u>		<u>Mortality</u>	
	With Variable	Without Variable	With Variable	Without Variable
Admission O ₂ Saturation <94%	8/32 (25%)	12/97 (12%)	13/84 (15%)	22/320 (6.9%)
Pulmonary Comorbidity	2/9 (22%)	18/125 (14%)	6/23 (26%)	30/400 (7.5%)
Malnutrition	5/15 (33%)	15/119 (13%)	5/21 (24%)	31/402 (7.7%)
Lower Respiratory Symptoms	17/75 (23%)	3/59 (5.1%)	24/187 (13%)	12/236 (5.1%)
Gastrointestinal Symptoms	5/37 (14%)	15/97 (15%)	18/290 (6.2%)	18/133 (14%)
Mucocutaneous Symptoms	2/21 (9.5%)	18/113 (16%)	8/187 (4.3%)	28/236 (12%)
Day 1 Invasive Ventilation	11/40 (28%)	9/89 (10%)	17/94 (18%)	19/323 (5.9%)
Prophylactic Anticoagulation	3/21 (14%)	17/113 (15%)	8/174 (4.6%)	28/249 (11%)
IVIG	6/37 (16%)	14/97 (14%)	7/225 (3.1%)	29/198 (15%)
Dexamethasone	5/35 (14%)	15/99 (15%)	12/122 (9.8%)	24/301 (7.8%)
Methylprednisolone	5/28 (18%)	15/106 (14%)	7/192 (3.7%)	29/231 (13%)
Viral Pneumonia	15/60 (25%)	5/74 (6.8%)	12/123 (9.8%)	24/299 (8%)
ARDS	14/42 (33%)	6/92 (6.5%)	24/115 (21%)	12/308 (3.9%)
Bacteraemia	10/28 (36%)	9/105 (8.6%)	12/40 (30%)	24/383 (6.3%)
Acute Kidney Injury	8/13 (62%)	12/121 (10%)	16/75 (21%)	20/348 (5.8%)
Acute Liver Injury	4/6 (67%)	16/128 (13%)	7/45 (16%)	29/378 (7.7%)
MIS-C	3/20 (15%)	17/114 (15%)	3/168 (1.8%)	33/254 (13%)

Supplemental Figure 1. Hospital mortality rate stratified by age



Supplemental Figure 2: Hospital mortality rate stratified by age and a.) MIS-C or b.) No MIS-C

a.)



b.)

