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| Supplemental Table 1. Primer and probe sequences for the detection of SARS-CoV-2 by RT-PCR. |
| Assay/use | **Oligonucleotide** | **Sequencea** |
| RdRP gene | RdRp\_SARSr-F | GTGARATGGTCATGTGTGGCGG |
| RdRp\_SARSr-P2 | FAM-CAGGTGGAACCTCATCAGGAGATGC-BBQ |
| RdRP\_SARSr-P1 | FAM-CCAGGTGGWACRTCATCMGGTGATGC-BBQ |
| RdRp\_SARSr-R | CARATGTTAAASACACTATTAGCATA |
| E gene | E\_Sarbeco\_F | ACAGGTACGTTAATAGTTAATAGCGT |
| E\_Sarbeco\_P1 | FAM-ACACTAGCCATCCTTACTGCGCTTCG-BBQ |
| E\_Sarbeco\_R | ATATTGCAGCAGTACGCACACA |
| N gene | N\_Sarbeco\_F | CACATTGGCACCCGCAATC |
| N\_Sarbeco\_P | FAM-ACTTCCTCAAGGAACAACATTGCCA-BBQ |
| N\_Sarbeco\_R | GAGGAACGAGAAGAGGCTTG |
| aW is A/T; R is G/A; M is A/C; S is G/C. FAM: 6-carboxyfluorescein; BBQ: blackberry quencher. |

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| Supplemental Table 2. Clinical characteristics and laboratory parameters of COVID-19 and influenza patients according to their disease outcome |
| Characteristic | **Influenza** | **COVID-19** |
| **Survivors****N = 52** | **Deceased****N = 16** | ***p*-value** | **Survivors****N = 14** | **Deceased****N = 10** | ***p*-value** |
| Age (years), median (range) | 48 (20-57) | 49 (37-75) | 0.5397 | 54 (28-71) | 48 (36-73) | 0.9889 |
| Males | 37 (71.1) | 11 (68.7) | >0.9999 | 10 (71.4) | 8 (80) | >0.9999 |
| BMI | 33.4 (30-38.1) | 33.3 (29.7-44.4) | 0.7603 | 28.5 (25.3-30.1) | 29.6 (24.8-31.4) | 0.7961 |
| ComorbiditiesSmokingDiabetesSAHOSACOPD | 19 (36.5)10 (19.2)13 (25)2 (3.8)1 (1.9) | 8 (50)4 (25)5 (31.2)2 (12.5)2 (12.5) | 0.38890.72550.74720.23340.1357 | 2 (14.2)5 (35.7)5 (35.7)0 (0)1 (7.1) | 3 (30)2 (20)0 (0)0 (0)0 (0) | 0.61460.65290.0530>0.9999>0.9999 |
| Symptoms at onsetFeverMyalgia ArthralgiaHeadacheDyspneaNasal congestionRhinorrheaSore throat Thoracic painCoughSputumDry cough FatigueDiarrheaNauseaVomit | 47 (90.3)44 (84.6)41 (80.3)26 (50)49 (94.2)7 (13.4)18 (34.6)22 (43.1)6 (11.5)50 (96.1)29 (55.7)20 (39.2)37 (71.1)4 (7.6)2 (3.8)2 (3.8) | 15 (93.7)12 (75)12 (75)7 (43.7)16 (100)6 (37.5)8 (50)2 (12.5)3 (18.7)16 (100)9 (56.2)7 (43.7)12 (75)1 (6.2)2 (12.5)0 (0) | >0.99990.45640.73950.77760.33620.06300.37830.03720.4299>0.9999>0.99990.7742>0.9999>0.99990.2334>0.9999 | 11 (78.5)10 (71.4)8 (57.1)6 (42.8)6 (42.8)0 (0)2 (14.2)2 (14.2)0 (0)12 (85.7)2 (14.2)10 (71.4)10 (71.4)3 (21.4)3 (21.4)3 (21.4) | 7 (70)8 (80)8 (80)5 (50)10 (100)1 (10)1 (10)2 (20)0 (0)9 (90)0 (0)9 (90)8 (80)2 (20)0 (0)1 (10) | 0.6653>0.99990.3875>0.99990.00640.4167>0.9999>0.9999>0.9999>0.99990.49280.3577>0.9999>0.99990.23910.6146 |
| Illness onset - hospital admission (days) | 7.5 (5-12) | 7.5 (6-11) | 0.9513 | 5.5 (3-11) | 6 (5-11) | 0.4776 |
| Vital signs at admissionBody temperature (oC)Respiratory rate (bpm)Hearth rate (bpm)MAP (mmHg) | 38 (37-38)25 (20-30)96 (85-109)86.1 (75-93.5) | 38 (37-38)24 (20-27)98 (88-104)82.8 (74.1-96.5) | 0.91960.44270.70690.9344 | 37 (36.6-37.6)24 (20-26)88 (81-99)81 (75-87.2) | 37 (37-37)24 (22-26)78 (69-88)71.5 (69.5-88.5) | 0.98830.94350.11850.1331 |
| Glucose (mg/dL) | 140 (111.9-207.6) | 179.7 (135.5-277) | 0.0534 | 202 (150.8-281.8) | 124.3 (98.4-179.8) | 0.7521 |
| Blood countWhite blood cells (109/L)Neutrophils (109/L)Lymphocytes (109/L)NLRHgb (g/dL)Platelets (109/L) | 7.2 (5.9-22.5)5.7 (4.6-7.7)0.8 (0.5-1.1)8.3 (4.9-12.6)14.7 (13.2-17.1)186 (154.3-220.3) | 7.1 (5.1-13.4)5.8 (4.2-11.4)0.8 (0.5-0.9)10.2 (6.9-12.7)16.4 (14-18.7)139 (112.3-211.5) | 0.96290.78830.69510.22010.10340.0342 | 7.7 (4.1-10)4.7 (2.7-8.9)0.8 (0.6-1.0)6.8 (3.2 – 12.5)14.6 (13.4-16.2)202 (150.8-281.8) | 9.8 (6.9-14.5)9.0 (5.9-12.7)0.8 (0.5-1.2)12.6 (4.8-17.5)13.2 (12.2-15.4)200 (137.8-246.3) | 0.09260.06430.74090.13750.05760.7961 |
| Renal functionCr (mg/dL)BUN (mg/dL)Na (mmol/L)K (mmol/L) | 0.9 (0.7-1.3)20.3 (13.7-33.1)137.4(133.3-140.5)4 (3.8-4.3) | 1.1 (0.9-2.3)29.9 (26.5-54.6)137.4(134.9-142.2)4.5 (4-4.7) | 0.10340.00140.64410.0242 | 1.0 (0.8-1.3)17.5 (13.3-25.9)137 (135-139.2)4.1 (3.9-4.3) | 0.9 (0.6-1.5)20.4 (14.3-32.8)141.1(138.8-142.4)4.1 (3.9-4.4) | 0.39480.46220.01110.8744 |
| Liver functionTotal bilirubin (mg/dL)AST (U/L)ALT (U/L) | 0.5 (0.4-0.8)60.9 (43-81.8)37.7 (25.1-51.4) | 0.6 (0.5-0.8)71.8 (53.4-113.3)44 (29.9-63.4) | 0.52830.07560.2042 | 0.4 (0.3-0.7)32.4 (21.5-46)29.6 (19.9-41.4) | 0.5 (0.4-0.8)58.5 (25.5-106.8)41 (27.3-63) | 0.65590.24080.1674 |
| Other biomarkers LDH (U/L) ALP (U/L)CPK (U/L) Procalcitonin (ng/mL) | 616 (461.8-811.1)118 (98.2-161.1)274.4 (108-738.6)0.3 (0.1-1.4) | 800.8 (555.9-1151)125.1 (97.4-171.1)248.1 (109.1-506.6)1.3 (0.4-4.7) | 0.07330.56260.64440.0442 | 289.5(189.5-439.2)77.9 (69.2-86.8)83.5 (47.4-429.6)0.1 (0.05-0.1) | 373 (314.6-504.5)80.1 (61.3-92.9)601.3 (69.5-2136)0.1 (0.08-0.1) | 0.10830.84080.17210.8727 |
| PaO2/FiO2 | 92.5 (59.9-149) | 76.2 (57.9-129) | 0.4665 | 129.2 (73.9-314) | 113.2 (97.3-172.1) | 0.5233 |
| Severity of illness scoresSOFAAPACHE II | 7 (5-8)9 (7-15) | 8 (7-12)14 (9-20) | 0.03690.1008 | 3 (2-6)6 (4-8) | 6 (3-8)7 (5-12) | 0.03230.5932 |
| Respiratory support High flow nasal cannulaMVProne positionECMO | 0 (0)52 (100)30 (57.6)4 (7.6) | 0 (0)16 (100)10 (62.5)3 (18.7) | >0.9999>0.99990.77970.3423 | 7 (50)7 (50)3 (21.4)0 (0) | 0 (0)10 (100)5 (50)0 (0) | 0.01880.01880.2038>0.9999 |
| Renal replacement therapy | 5 (9.6) | 11 (68.7) | <0.0001 | 2 (14.2) | 0 (0) | 0.4928 |
| Data are displayed as n (%) or median (IQR). N is the total number of patients with available data. ALP, alkaline phosphatase; APACHE-II, Acute Physiology And Chronic Health Evaluation II; AST, aspartate aminotransferase; ALT, alanine aminotransferase; BMI, body mass index; bpm, breaths/beats per minute; BUN, blood ureic nitrogen; COPD, chronic obstructive pulmonary disease; CPK, creatine phosphokinase; Cr, creatinine; ECMO, extra-corporeal membrane oxygenation; FiO2, fraction of inspired oxygen; HCO3, bicarbonate; Hgb, hemoglobin; IQR, interquartile range; ICU, intensive care unit; LDH, lactate dehydrogenase; MAP, mean arterial pressure; MV, mechanical ventilation; ND, not determined; NLR, neutrophil/lymphocyte ration; OSA, obstructive sleep apnea syndrome; PaO2, partial pressure of oxygen in arterial blood; PCO2, partial pressure of carbon dioxide in blood; SAH, systemic arterial hypertension; SD, standard deviation; SOFA, Sequential Organ Failure Assessment. Differences in continuous variables were estimated using the Mann Whitney U test. Differences in categorical variables were calculated using the Fisher’s exact or the Chi square test as appropriate. |

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**Supplemental Figure 1. Histological characteristics of the lungs of patients with pandemic influenza A(H1N1) and COVID-19.** Lung tissue autopsy specimens were obtained from patients that succumbed to influenza and COVID-19. **Left panel:** Inflammatory infiltrates occupying the alveolar space and composed of macrophages, polymorphonuclear cells, fibrin deposits, as well as hemorrhages were observed in influenza patients. **Right panel:** Morphological changes of COVID-19 consisted of extensive inflammation, thickening of the alveolar walls, and partial loss of the histological architecture. H&E staining, X100.

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**Supplemental Figure 2. Diagnostic value of clinical factors and serum CXCL17 levels to distinguish between influenza and COVID-19.** Bivariate logistic regression analysis of the factors predicting the causative pathogen in patients with severe acute respiratory illness. The forest plots show the odds ratio (OR) and 95% CI interval values that were significant for influenza (green squares) and COVID-19 (blue triangles).