**Supplementary Table 1. Comparison of characteristic between discharged COVID-19 patients in this study and the COVID-19 cases in Wuhan.**

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristics | Discharged COVID-19 patients | COVID-19 cases in Wuhan\* | *P* |
| Age group, years |  |  |  |
| 0-19 | 15 (1.41) | 536 (1.65) | 0.079 |
| 20-39 | 188 (17.65) | 5960 (18.29) |  |
| 40-59 | 442 (41.5) | 12269 (37.65) |  |
| ≥60 | 420 (39.44) | 13818 (42.41) |  |
| Gender |  |  |  |
| Male | 518 (48.64) | 15766 (48.39) | 0.872 |
| Female | 547 (51.36) | 16817 (51.61) |  |
| Severity |  |  |  |
| Mild | 582 (54.65) | 15531 (48.05) | <0.001 |
| Moderate | 299 (28.08) | 9655 (29.87) |  |
| Severe or critical | 168 (15.77) | 6169 (19.08) |  |

$ Data from the published study3.

**Supplementary Table 2. Self-report symptoms at the survey time in 1065 discharged COVID-19 patients by RT-PCR results for SARS-CoV-2.**

|  |  |  |  |
| --- | --- | --- | --- |
| Self-report symptoms at the survey | All discharged patients (n=1065) | Non-re-positive discharged patients (n=1002) | Re-positive discharged patients (n=63) |
| None | 836 (78.50) | 787 (78.54) | 49 (77.78) |
| 1 | 167 (15.68) | 157 (15.67) | 10 (15.87) |
| 2 | 41 (3.85) | 38 (3.79) | 3 (4.76) |
| 3 | 14 (1.31) | 13 (1.30) | 1 (1.59) |
| 4 | 3 (0.28) | 3 (0.30) | 0 (0.00) |
| 5 | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| 6 | 3 (0.28) | 3 (0.30) | 0 (0.00) |
| Chest stuffiness | 96 (9.01) | 91 (9.08) | 5 (7.94) |
| Cough | 73 (6.85) | 68 (6.79) | 5 (7.94) |
| Dyspnea | 28 (2.63) | 26 (2.59) | 2 (3.17) |
| Sputum production | 22 (2.07) | 22 (2.20) | 0 (0.00) |
| Pharyngalgia | 22 (2.07) | 20 (2.00) | 2 (3.17) |
| Chest pain | 10 (0.94) | 9 (0.90) | 1 (1.59) |
| Rapid heart rate | 10 (0.94) | 10 (1.00) | 0 (0.00) |
| Fatigue | 9 (0.85) | 9 (0.90) | 0 (0.00) |
| Shortness of breath | 9 (0.85) | 8 (0.80) | 1 (1.59) |
| Diarrhea | 9 (0.85) | 9 (0.90) | 0 (0.00) |
| Insomnia | 6 (0.56) | 6 (0.60) | 0 (0.00) |
| Upset stomach | 6 (0.56) | 4 (0.40) | 2 (3.17) |
| Night sweats | 4 (0.38) | 4 (0.40) | 0 (0.00) |
| Dorsalgia | 3 (0.28) | 3 (0.30) | 0 (0.00) |
| Conjunctival suffusion | 3 (0.28) | 3 (0.30) | 0 (0.00) |
| Ventosity | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Headache | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Pharyngitis | 2 (0.19) | 1 (0.10) | 1 (1.59) |
| Osphyalgia | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Astriction | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Enteritis | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Vertigo | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Lethargic | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Trachitis | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Anosmia | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Lower extremity weakness | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Chills | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Runny nose | 1 (0.09) | 1 (0.10) | 0 (0.00) |

**Supplementary Table 3. Comorbidities of 1065 discharged COVID-19 patients.**

|  |  |  |  |
| --- | --- | --- | --- |
| Comorbidities | All discharged patients (n=1065) | Non-re-positive discharged patients (n=1002) | Re-positive discharged patients (n=63) |
| None | 699 (65.63) | 656 (65.47) | 43 (68.25) |
| 1 | 292 (27.42) | 274 (27.35) | 18 (28.57) |
| 2 | 72 (6.76) | 70 (6.99) | 2 (3.17) |
| 3 | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Cardiovascular disease | 257 (24.13) | 241 (24.05) | 16 (25.4) |
| Diabetes | 124 (11.64) | 119 (11.88) | 5 (7.94) |
| COPD | 15 (1.41) | 15 (1.50) | 0 (0.00) |
| Cancer | 14 (1.31) | 13 (1.30) | 1 (1.59) |
| Thyroid disease | 6 (0.56) | 6 (0.60) | 0 (0.00) |
| Kidney disease | 4 (0.38) | 4 (0.40) | 0 (0.00) |
| Stomach | 3 (0.28) | 3 (0.30) | 0 (0.00) |
| Rhinitis | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Tuberculosis | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Asthma | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Systemic lupus erythematosus | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Gout | 2 (0.19) | 2 (0.20) | 0 (0.00) |
| Gallstone | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Epilepsy | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Hyperlipemia | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Hypoglycemia | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Colitis | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Dermatosis | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Anemia | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Pharyngitis | 1 (0.09) | 1 (0.10) | 0 (0.00) |
| Fatty liver disease | 1 (0.09) | 1 (0.10) | 0 (0.00) |

**Supplementary Table 4. Combination of virological and IgM/IgG serological tests in 1065 discharged COVID-19 patients in Wuhan.**

|  |  |  |  |
| --- | --- | --- | --- |
| SARS-CoV-2 | IgG | IgM | n (%) |
| - | + | + | 615 (57.75) |
| - | + | - | 229 (21.5) |
| - | - | - | 108 (10.14) |
| - | - | + | 45 (4.23) |
| + | + | + | 41 (3.85) |
| + | + | - | 13 (1.22) |
| **+** | **-** | **-** | 5 (0.47) |
| **+** | **-** | **+** | 4 (0.38) |
| + | NA | NA | 5 (0.47) |

+: positive; -: negative; NA: not available.

**Supplementary Table 5. Self-report symptoms at the survey time in 1060 discharged COVID-19 patients by SARS-CoV-2-specific IgG/IgM results.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Self-report symptoms at the survey | All discharged patients (n=1060) | IgG | | IgM | |
| Negative (n=162) | Positive (n=898) | Negative (n=284) | Positive (n=705) |
| None | 832 (78.49) | 127 (78.4) | 705 (78.51) | 284 (34.13) | 548 (65.87) |
| 1 | 166 (15.66) | 26 (16.05) | 140 (15.59) | 50 (30.12) | 116 (69.88) |
| 2 | 41 (3.87) | 5 (3.09) | 36 (4.01) | 13 (3.66) | 28 (3.97) |
| 3 | 14 (1.32) | 1 (0.62) | 13 (1.45) | 4 (1.13) | 10 (1.42) |
| 4 | 3 (0.28) | 3 (1.85) | 0 (0.00) | 3 (0.85) | 0 (0.00) |
| 5 | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| 6 | 3 (0.28) | 0 (0.00) | 3 (0.33) | 1 (0.28) | 2 (0.28) |
| Chest stuffiness | 95 (8.96) | 16 (9.88) | 79 (8.8) | 28 (7.89) | 67 (9.5) |
| Cough | 73 (6.89) | 12 (7.41) | 61 (6.79) | 23 (6.48) | 50 (7.09) |
| Dyspnea | 28 (2.64) | 3 (1.85) | 25 (2.78) | 9 (2.54) | 19 (2.70) |
| Sputum production | 22 (2.08) | 3 (1.85) | 19 (2.12) | 8 (2.25) | 14 (1.99) |
| Pharyngalgia | 22 (2.08) | 3 (1.85) | 19 (2.12) | 7 (1.97) | 15 (2.13) |
| Chest pain | 10 (0.94) | 3 (1.85) | 7 (0.78) | 4 (1.13) | 6 (0.85) |
| Rapid heart rate | 10 (0.94) | 0 (0.00) | 10 (1.11) | 3 (0.85) | 7 (0.99) |
| Fatigue | 9 (0.85) | 1 (0.62) | 8 (0.89) | 4 (1.13) | 5 (0.71) |
| Shortness of breath | 9 (0.85) | 1 (0.62) | 8 (0.89) | 2 (0.56) | 7 (0.99) |
| Diarrhea | 9 (0.85) | 2 (1.23) | 7 (0.78) | 3 (0.85) | 6 (0.85) |
| Insomnia | 6 (0.57) | 2 (1.23) | 4 (0.45) | 3 (0.85) | 3 (0.43) |
| Upset stomach | 6 (0.57) | 0 (0.00) | 6 (0.67) | 4 (1.13) | 2 (0.28) |
| Night sweats | 4 (0.38) | 1 (0.62) | 3 (0.33) | 1 (0.28) | 3 (0.43) |
| Dorsalgia | 3 (0.28) | 0 (0.00) | 3 (0.33) | 1 (0.28) | 2 (0.28) |
| Conjunctival suffusion | 3 (0.28) | 0 (0.00) | 3 (0.33) | 0 (0.00) | 3 (0.43) |
| Ventosity | 2 (0.19) | 1 (0.62) | 1 (0.11) | 1 (0.28) | 1 (0.14) |
| Headache | 2 (0.19) | 0 (0.00) | 2 (0.22) | 1 (0.28) | 1 (0.14) |
| Pharyngitis | 2 (0.19) | 0 (0.00) | 2 (0.22) | 0 (0.00) | 2 (0.28) |
| Osphyalgia | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| Astriction | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| Enteritis | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| Vertigo | 1 (0.09) | 1 (0.62) | 0 (0.00) | 0 (0.00) | 1 (0.14) |
| Lethargic | 1 (0.09) | 1 (0.62) | 0 (0.00) | 1 (0.28) | 0 (0.00) |
| Trachitis | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| Anosmia | 1 (0.09) | 0 (0.00) | 1 (0.11) | 0 (0.00) | 1 (0.14) |
| Lower extremity weakness | 1 (0.09) | 0 (0.00) | 1 (0.11) | 1 (0.28) | 0 (0.00) |
| Chills | 1 (0.09) | 1 (0.62) | 0 (0.00) | 1 (0.28) | 0 (0.00) |
| Runny nose | 1 (0.09) | 0 (0.00) | 1 (0.11) | 1 (0.28) | 0 (0.00) |

**Supplementary Table 6. Factors associated with positive SARS-CoV-2-specific IgM or IgG in discharged COVID-19 patients.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Characteristics | IgG | | | IgM | | |
| n (%) | Adjusted OR (95%CI) | *P* | n (%) | Adjusted OR (95%CI) | *P* |
| Age group, years |  |  |  |  |  |  |
| ≥60 | 380 (90.69) | 1.00 |  | 285 (68.02) | 1.00 |  |
| 40-59 | 371 (83.94) | 0.53 (0.33, 0.83) | 0.006 | 294 (66.52) | 0.95 (0.69, 1.31) | 0.743 |
| 0-39 | 147 (73.87) | 0.30 (0.17, 0.51) | <0.001 | 126 (63.32) | 0.94 (0.62, 1.43) | 0.779 |
| Gender |  |  |  |  |  |  |
| Male | 430 (83.66) | 1.00 |  | 352 (68.48) | 1.00 |  |
| Female | 468 (85.71) | 1.24 (0.85, 1.8) | 0.258 | 353 (64.65) | 0.74 (0.56, 0.98) | 0.038 |
| Days from onset to retest |  |  |  |  |  |  |
| <70 | 253 (75.30) | 1.00 |  | 193 (57.44) | 1.00 |  |
| 70-77 | 329 (89.65) | 2.29 (1.45, 3.6) | <0.001 | 264 (71.93) | 1.47 (1.04, 2.06) | 0.027 |
| ≥78 | 316 (88.52) | 2.10 (1.34, 3.30) | 0.001 | 248 (69.47) | 1.26 (0.89, 1.78) | 0.189 |
| Days from discharge to retest |  |  |  |  |  |  |
| <28 | 135 (84.91) | 1.00 |  | 96 (60.38) | 1.00 |  |
| 28-41 | 351 (81.44) | 0.82 (0.47, 1.43) | 0.486 | 271 (62.88) | 1.21 (0.81, 1.82) | 0.350 |
| ≥42 | 412 (87.66) | 1.05 (0.59, 1.88) | 0.868 | 338 (71.91) | 1.63 (1.08, 2.46) | 0.020 |
| Severity |  |  |  |  |  |  |
| Mild | 492 (84.83) | 1.00 |  | 382 (65.86) | 1.00 |  |
| Moderate | 239 (80.74) | 0.81 (0.54, 1.23) | 0.323 | 193 (65.20) | 1.10 (0.8, 1.52) | 0.560 |
| Severe or critical | 167 (90.76) | 1.40 (0.77, 2.54) | 0.267 | 130 (70.65) | 1.24 (0.84, 1.83) | 0.278 |
| Symptoms after discharge |  |  |  |  |  |  |
| None | 705 (84.74) | 1.00 |  | 548 (65.87) | 1.00 |  |
| 1 | 140 (84.34) | 0.86 (0.52, 1.43) | 0.566 | 116 (69.88) | 1.25 (0.84, 1.84) | 0.271 |
| ≥2 | 53 (85.48) | 0.90 (0.40, 2.00) | 0.788 | 41 (66.13) | 1.01 (0.57, 1.81) | 0.970 |
| Comorbidities |  |  |  |  |  |  |
| None | 581 (83.60) | 1.00 |  | 472 (67.91) | 1.00 |  |
| ≥1 | 317 (86.85) | 0.98 (0.64, 1.51) | 0.942 | 233 (63.84) | 0.74 (0.54, 1.00) | 0.052 |
| IgG |  |  |  |  |  |  |
| Negative | - | - |  | 49 (30.25) | 1.00 |  |
| Positive | - | - |  | 656 (73.05) | 5.96 (4.07, 8.72) | <0.001 |
| IgM |  |  |  |  |  |  |
| Negative | 242 (68.17) | 1.00 |  | - | - |  |
| Positive | 656 (93.05) | 5.84 (3.99, 8.55) | <0.001 | - | - |  |
| RT-PCR retest for SARS-CoV-2 |  |  |  |  |  |  |
| Negative | 844 (84.65) | 1.00 |  | 660 (66.20) | 1.00 |  |
| Positive | 54 (85.71) | 1.33 (0.57, 3.06) | 0.510 | 45 (71.43) | 1.40 (0.76, 2.58) | 0.278 |

**Supplementary Table 7. Characteristics of the 138 discharged COVID-19 patients in the follow-up investigation.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | All participants in the follow-up investigation (n=138) | Non-re-positive patients in the cross-sectional survey (n=90) | Re-positive patients in the cross-sectional survey (n=48) | *P* |
| Age group, years |  |  |  |  |
| 0-39 | 26 (18.84) | 15 (16.67) | 11 (22.92) | 0.516 |
| 40-59 | 60 (43.48) | 42 (46.67) | 18 (37.50) |  |
| ≥60 | 52 (37.68) | 33 (36.67) | 19 (39.58) |  |
| Gender |  |  |  |  |
| Male | 36 (26.09) | 24 (26.67) | 12 (25.00) | 0.832 |
| Female | 102 (73.91) | 66 (73.33) | 36 (75.00) |  |
| Severity |  |  |  |  |
| Mild | 84 (60.87) | 56 (62.22) | 28 (58.33) | 0.581 |
| Moderate | 20 (14.49) | 11 (12.22) | 9 (18.75) |  |
| Severe | 34 (24.64) | 23 (25.56) | 11 (22.92) |  |
| Comorbidities |  |  |  |  |
| None | 89 (64.49) | 58 (64.44) | 31 (64.58) | 0.967 |
| 1 | 44 (31.88) | 29 (32.22) | 15 (31.25) |  |
| 2 | 5 (3.62) | 3 (3.33) | 2 (4.17) |  |
| Cardiovascular disease | 37 (26.81) | 23 (25.56) | 14 (29.17) | 0.648 |
| Diabetes | 13 (9.42) | 9 (10.00) | 4 (8.33) | 0.747 |
| Cancer | 2 (1.45) | 1 (1.11) | 1 (2.08) | 1.000 |
| Rhinitis | 1 (0.72) | 1 (1.11) | 0 (0.00) | 1.000 |
| Systemic lupus erythematosus | 1 (0.72) | 1 (1.11) | 0 (0.00) | 1.000 |
| Self-report symptoms at the investigation |  |  |  |  |
| None | 118 (85.51) | 77 (85.56) | 41 (85.42) | 0.982 |
| ≥1 | 20 (14.49) | 13 (14.44) | 7 (14.58) |  |
| Sputum production | 10 (7.25) | 7 (7.78) | 3 (6.25) | 0.739 |
| Cough | 6 (4.35) | 4 (4.44) | 2 (4.17) | 0.939 |
| Dyspnea | 4 (2.90) | 4 (4.44) | 0 (0.00) | 0.062 |
| Pharyngalgia | 3 (2.17) | 2 (2.22) | 1 (2.08) | 0.957 |
| Diarrhea | 2 (1.45) | 1 (1.11) | 1 (2.08) | 1.000 |
| Conjunctival suffusion | 1 (0.72) | 1 (1.11) | 0 (0.00) | 1.000 |