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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplementary Table 1.** Baseline characteristics of patients with or without mental disorder who received tests for SARS-CoV-2 and those who were diagnosed with COVID-19 before age-, sex-, and Charlson Comorbidity Index-matching. | | | | | | | | | | |
|  | **People who received tests for SARS-CoV-2** | | | | | **Patients who were diagnosed with COVID-19** | | | | |
| **N = 230,565 (%)** | | | | | **N = 7,077 (%)** | | | | |
| **Characteristics** | **With mental disorder** | | **Without mental disorder** | | **aSD** | **With mental disorder** | | **Without mental disorder** | | **aSD** |
| **N = 33,653** | | **N = 196,912** | | **N = 928** | | **N = 6,149** | |
| **Age** (years) (Mean ± SD) | 62.4 | ±21.4 | 44.5 | ±20.6 | 0.852 | 61.2 | ±18.2 | 43.7 | ±18.5 | 0.949 |
| **Male** (%) | 14,481 | (43.0) | 95,149 | (48.3) | 0.106 | 373 | (40.2) | 2,505 | (40.7) | 0.011 |
| **Residential district** |  |  |  |  | 0.080 |  |  |  |  | 0.371 |
| Metropolitan | 8,906 | (26.5) | 54,940 | (27.9) | 44 | (4.7) | 646 | (10.5) |
| Urban | 7,500 | (22.3) | 47,323 | (24.0) | 54 | (5.8) | 841 | (13.7) |
| Rural | 17,247 | (51.2) | 94,649 | (48.1) | 830 | (89.4) | 4,662 | (75.8) |
| **Hospitalization for COVID-19a** | - |  | - |  |  | 908 | (97.8) | 6052 | (98.4) |  |
| **Charlson Comorbidity Index** (Mean ± SD) | 1.55 | ±1.58 | 0.74 | ±1.41 | 0.537 | 1.02 | ±1.2 | 0.45 | ±0.9 | 0.542 |
| 0 | 11,153 | (33.1) | 124,204 | (63.1) |  | 453 | (48.8) | 4,465 | (72.6) |  |
| 1 | 5,701 | (16.9) | 36,264 | (18.4) |  | 129 | (13.9) | 956 | (15.5) |  |
| 2 | 8,508 | (25.3) | 20,282 | (10.3) |  | 240 | (25.9) | 509 | (8.3) |  |
| 3+ | 8,291 | (24.6) | 16,162 | (8.2) |  | 106 | (11.4) | 219 | (3.6) |  |
| **Comorbiditiesb** |  |  |  |  |  |  |  |  |  |  |
| Diabetes mellitus | 7,693 | (22.9) | 22,031 | (11.2) | 0.314 | 190 | (20.5) | 501 | (8.1) | 0.358 |
| Hypertension | 12,645 | (37.6) | 35,775 | (18.2) | 0.443 | 291 | (31.4) | 884 | (14.4) | 0.413 |
| Heart failure | 2,285 | (6.8) | 4,719 | (2.4) | 0.211 | 38 | (4.1) | 77 | (1.3) | 0.177 |
| Stroke | 3,377 | (10.0) | 5,589 | (2.8) | 0.296 | 60 | (6.5) | 111 | (1.8) | 0.236 |
| Myocardial infarction | 517 | (1.5) | 1,466 | (0.7) | 0.075 | 3 | (0.3) | 26 | (0.4) | 0.016 |
| Asthma | 4,050 | (12.0) | 14,028 | (7.1) | 0.167 | 60 | (6.5) | 290 | (4.7) | 0.076 |
| COPD | 8,332 | (24.8) | 30,445 | (15.5) | 0.234 | 152 | (16.4) | 731 | (11.9) | 0.129 |
| Renal disease | 2,003 | (6.0) | 5,887 | (3.0) | 0.144 | 9 | (1.0) | 37 | (0.6) | 0.042 |
| Liver disease | 4,548 | (13.5) | 16,441 | (8.3) | 0.166 | 100 | (10.8) | 408 | (6.6) | 0.147 |
| Cancer | 4,521 | (13.4) | 13,012 | (6.6) | 0.229 | 53 | (5.7) | 200 | (3.3) | 0.119 |
| Pneumonia | 3,557 | (10.6) | 16,199 | (8.2) | 0.080 | 31 | (3.3) | 183 | (3.0) | 0.021 |
| **Concomitant medicationsb** |  |  |  |  |  |  |  |  |  |  |
| ACE inhibitors | 653 | (1.9) | 1,790 | (0.9) | 0.087 | 18 | (1.9) | 37 | (0.6) | 0.120 |
| Angiotensin II receptor blockers | 10,377 | (30.8) | 30,170 | (15.3) | 0.375 | 214 | (23.1) | 723 | (11.8) | 0.301 |
| β-blockers | 10,786 | (32.1) | 17,983 | (9.1) | 0.591 | 250 | (26.9) | 370 | (6.0) | 0.588 |
| Calcium channel blockers | 10,851 | (32.2) | 28,688 | (14.6) | 0.427 | 226 | (24.4) | 582 | (9.5) | 0.405 |
| Thiazide diuretics | 3,995 | (11.9) | 9,839 | (5.0) | 0.249 | 90 | (9.7) | 266 | (4.3) | 0.212 |
| Anticoagulants | 15,652 | (46.5) | 37,763 | (19.2) | 0.608 | 278 | (30.0) | 699 | (11.4) | 0.472 |
| Anticonvulsants | 9,279 | (27.6) | 16,634 | (8.4) | 0.514 | 204 | (22.0) | 282 | (4.6) | 0.530 |
| Digoxin | 725 | (2.2) | 1,434 | (0.7) | 0.120 | 10 | (1.1) | 16 | (0.3) | 0.100 |
| Insulin | 3,337 | (9.9) | 8,836 | (4.5) | 0.211 | 44 | (4.7) | 82 | (1.3) | 0.200 |
| Non-insulin glucose lowering agents | 6,628 | (19.7) | 19,287 | (9.8) | 0.282 | 179 | (19.3) | 448 | (7.3) | 0.359 |
| NSAIDs | 28,644 | (85.1) | 158,794 | (80.6) | 0.119 | 714 | (76.9) | 4,774 | (77.6) | 0.017 |
| Acetaminophen | 25,754 | (76.5) | 128,024 | (65.0) | 0.255 | 638 | (68.8) | 3,652 | (59.4) | 0.196 |
| Narcotic analgesics | 21,658 | (64.4) | 89,516 | (45.5) | 0.387 | 537 | (57.9) | 2,742 | (44.6) | 0.268 |
| **Treatment for COVID-19a** |  |  |  |  |  |  |  |  |  |  |
| Hydroxychloroquine | - |  | - |  |  | 377 | (40.6) | 1643 | (26.7) | 0.297 |
| Lopinavir/ritonavir | - |  | - |  |  | 440 | (47.4) | 2136 | (34.7) | 0.260 |
| Azithromycin | - |  | - |  |  | 0 | (0) | 3 | (0.1) | 0.031 |
| Glucocorticoid | - |  | - |  |  | 84 | (9.1) | 249 | (4.1) | 0.203 |
| Interferon-beta | - |  | - |  |  | 7 | (0.8) | 15 | (0.2) | 0.072 |
| SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; COVID-19, coronavirus disease 2019; ACE, angiotensin converting enzyme inhibitors; aSD, absolute standardized difference; COPD, chronic obstructive pulmonary disease; NSAIDs, non-steroidal anti-inflammatory drugs; SD, standard deviation.  **a** Hospitalization and treatment for COVID-19 were assessed from the cohort entry date to the end of study period.  **b** Comorbidities and concomitant medications were assessed within a year before the cohort entry date. | | | | | | | | | | |

**Supplementary Figure 1.** Forest plot summarizing the results of sensitivity analyses on the risk of SARS-CoV-2 infection and severe outcomes (death and severe events) following COVID-19 using various definitions of patients with mental disorders.



Abbreviations: SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; COVID-19, coronavirus disease 2019; OR, odds ratio; CI, confidence interval

a The risks of positive test for SARS-CoV-2 were adjusted for type of insurance, residential area, comorbidities, and co-medications.

b Defined as intensive care unit (ICU) admission, use of mechanical ventilation, and acute respiratory distress syndrome (ARDS).