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**Supplemental information**

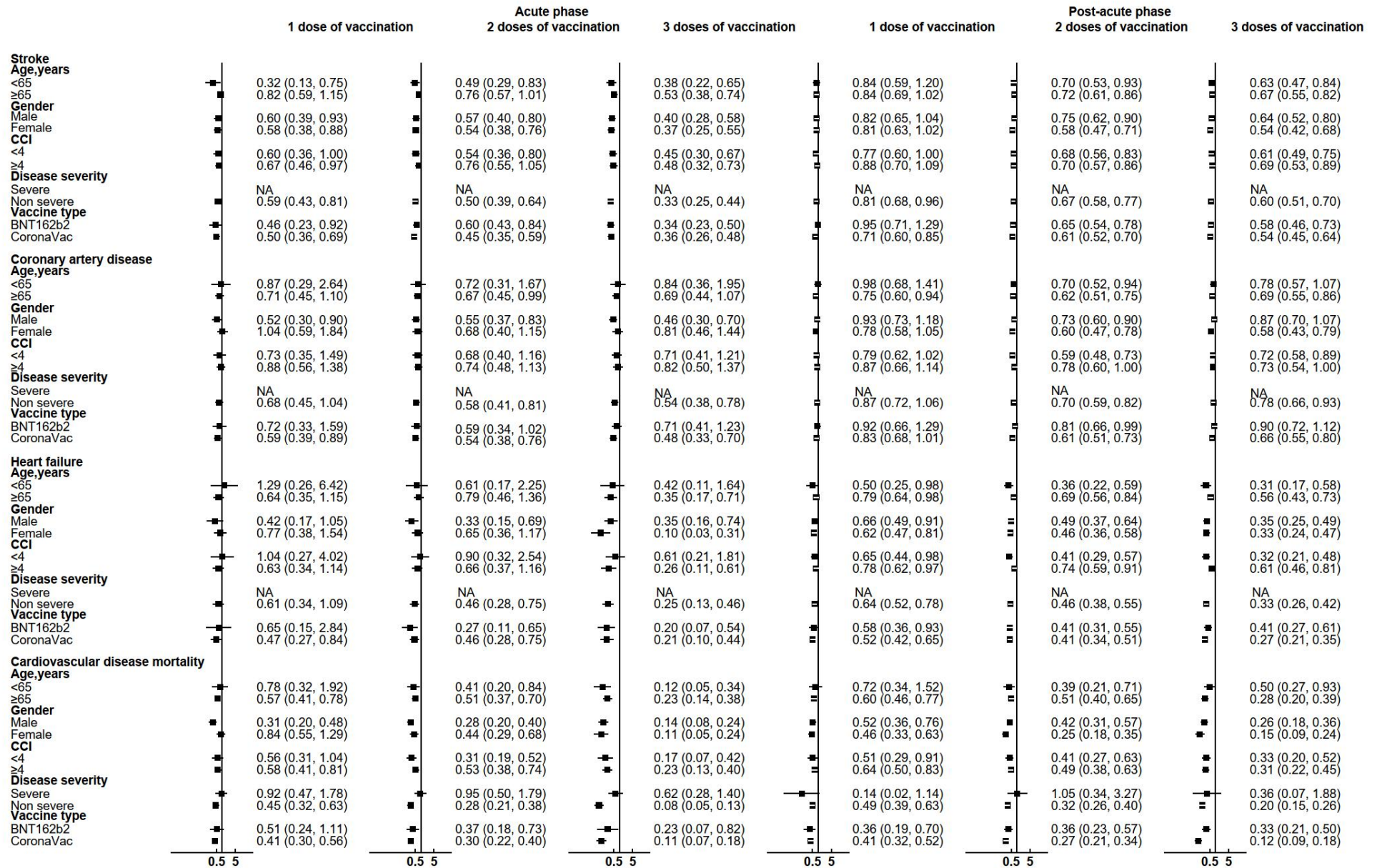
**Association between BNT162b2 and CoronaVac**

**vaccination and risk of CVD and mortality after**

**COVID-19 infection: A population-based cohort study**

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Supplementary figure 1, related to Figure 2. Hazard ratio of cardiovascular outcomes and mortality among individuals with different vaccination status at acute and post-acute phases by age, gender, Charlson index, disease severity, and vaccine type.



Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. NA: Not available due to insufficient number of events.

Supplementary table 1, related to Figure 1. Risk of cardiovascular outcomes and mortality among individuals with different vaccination status among patients with positive PCR results only.

|   | Within 28 days since COVID-19 infection |                          |                       | After 28 days since COVID-19 infection |                         |                       |
|---|---|--------------------------|-----------------------|--|-------------------------|-----------------------|
|   | Events                                  | Incidence rate (95% CI)  | Hazard ratio (95% CI) | Events                                 | Incidence rate (95% CI) | Hazard ratio (95% CI) |
| <b>Cardiovascular disease</b>           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 1378                                    | 30.43 (28.85 - 32.06)    | REF                   | 4144                                   | 9.16 (8.89 - 9.44)      | REF                   |
| 1 dose of vaccination                   | 938                                     | 20.74 (19.44 - 22.09)    | 0.69 (0.55 - 0.86)    | 3612                                   | 7.71 (7.46 - 7.97)      | 0.83 (0.73 - 0.94)    |
| 2 doses of vaccination                  | 811                                     | 18.03 (16.82 - 19.30)    | 0.60 (0.50 - 0.72)    | 2717                                   | 5.93 (5.71 - 6.16)      | 0.63 (0.57 - 0.71)    |
| 3 doses of vaccination                  | 687                                     | 15.25 (14.15 - 16.43)    | 0.51 (0.41 - 0.62)    | 1894                                   | 5.63 (5.38 - 5.89)      | 0.59 (0.52 - 0.66)    |
| <b>Stroke</b>                           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 773                                     | 17.06 (15.89 - 18.30)    | REF                   | 1770                                   | 3.90 (3.72 - 4.09)      | REF                   |
| 1 dose of vaccination                   | 504                                     | 11.14 (10.21 - 12.16)    | 0.66 (0.48 - 0.90)    | 1580                                   | 3.37 (3.21 - 3.54)      | 0.85 (0.70 - 1.04)    |
| 2 doses of vaccination                  | 455                                     | 10.12 (9.23 - 11.09)     | 0.60 (0.47 - 0.77)    | 1220                                   | 2.66 (2.51 - 2.81)      | 0.67 (0.57 - 0.79)    |
| 3 doses of vaccination                  | 365                                     | 8.09 (7.29 - 8.95)       | 0.48 (0.36 - 0.63)    | 841                                    | 2.50 (2.33 - 2.67)      | 0.61 (0.50 - 0.74)    |
| <b>Coronary artery disease</b>          |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 396                                     | 8.72 (7.89 - 9.61)       | REF                   | 1290                                   | 2.84 (2.69 - 3.00)      | REF                   |
| 1 dose of vaccination                   | 299                                     | 6.60 (5.88 - 7.38)       | 0.76 (0.51 - 1.14)    | 1249                                   | 2.66 (2.52 - 2.81)      | 0.91 (0.73 - 1.14)    |
| 2 doses of vaccination                  | 256                                     | 5.69 (5.04 - 6.43)       | 0.66 (0.47 - 0.92)    | 950                                    | 2.07 (1.94 - 2.20)      | 0.71 (0.59 - 0.85)    |
| 3 doses of vaccination                  | 259                                     | 5.74 (5.07 - 6.46)       | 0.66 (0.46 - 0.95)    | 823                                    | 2.44 (2.28 - 2.61)      | 0.83 (0.68 - 1.01)    |
| <b>Heart failure</b>                    |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 221                                     | 4.87 (4.25 - 5.53)       | REF                   | 1219                                   | 2.69 (2.54 - 2.84)      | REF                   |
| 1 dose of vaccination                   | 135                                     | 2.99 (2.52 - 3.53)       | 0.62 (0.35 - 1.08)    | 909                                    | 1.93 (1.81 - 2.06)      | 0.70 (0.56 - 0.88)    |
| 2 doses of vaccination                  | 108                                     | 2.40 (1.97 - 2.87)       | 0.49 (0.30 - 0.81)    | 600                                    | 1.31 (1.21 - 1.41)      | 0.48 (0.39 - 0.59)    |
| 3 doses of vaccination                  | 67                                      | 1.49 (1.17 - 1.89)       | 0.31 (0.16 - 0.58)    | 275                                    | 0.82 (0.72 - 0.92)      | 0.29 (0.22 - 0.38)    |
| <b>Cardiovascular disease mortality</b> |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 755                                     | 16.65 (15.49 - 17.87)    | REF                   | 1079                                   | 2.37 (2.24 - 2.52)      | REF                   |
| 1 dose of vaccination                   | 416                                     | 9.19 (8.33 - 10.10)      | 0.55 (0.40 - 0.76)    | 538                                    | 1.15 (1.05 - 1.25)      | 0.48 (0.36 - 0.63)    |
| 2 doses of vaccination                  | 302                                     | 6.71 (6.00 - 7.51)       | 0.40 (0.30 - 0.54)    | 360                                    | 0.78 (0.70 - 0.87)      | 0.33 (0.26 - 0.42)    |
| 3 doses of vaccination                  | 129                                     | 2.86 (2.39 - 3.37)       | 0.17 (0.11 - 0.28)    | 200                                    | 0.59 (0.51 - 0.68)      | 0.22 (0.16 - 0.30)    |
| <b>All-cause mortality</b>              |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 15032                                   | 331.29 (326.01 - 336.61) | REF                   | 15398                                  | 33.88 (33.35 - 34.42)   | REF                   |
| 1 dose of vaccination                   | 7080                                    | 156.43 (152.83 - 160.12) | 0.47 (0.44 - 0.51)    | 7342                                   | 15.61 (15.26 - 15.98)   | 0.46 (0.42 - 0.49)    |
| 2 doses of vaccination                  | 3356                                    | 74.56 (72.07 - 77.11)    | 0.23 (0.21 - 0.24)    | 4414                                   | 9.60 (9.32 - 9.89)      | 0.28 (0.26 - 0.30)    |
| 3 doses of vaccination                  | 1421                                    | 31.51 (29.89 - 33.17)    | 0.10 (0.08 - 0.11)    | 2289                                   | 6.78 (6.51 - 7.07)      | 0.18 (0.16 - 0.20)    |

Incidence rate (cases/1000 person-years) with 95% confidence interval based on Poisson distribution. Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. CI = confidence interval; REF = reference level.

Supplementary table 2, related to Figure 1. Risk of cardiovascular outcomes and mortality among individuals with different vaccination status excluding individuals with COVID-19 onset after 180 days since last dose of vaccination.

|   | Within 28 days since COVID-19 infection |                          |                       | After 28 days since COVID-19 infection |                         |                       |
|---|---|--------------------------|-----------------------|--|-------------------------|-----------------------|
|   | Events                                  | Incidence rate (95% CI)  | Hazard ratio (95% CI) | Events                                 | Incidence rate (95% CI) | Hazard ratio (95% CI) |
| <b>Cardiovascular disease</b>           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 1354                                    | 25.27 (23.96 - 26.65)    | REF                   | 1939                                   | 11.07 (10.58 - 11.57)   | REF                   |
| 1 dose of vaccination                   | 838                                     | 15.54 (14.51 - 16.62)    | 0.62 (0.50 - 0.77)    | 1439                                   | 8.49 (8.06 - 8.93)      | 0.74 (0.64 - 0.86)    |
| 2 doses of vaccination                  | 764                                     | 14.16 (13.18 - 15.18)    | 0.56 (0.47 - 0.68)    | 1096                                   | 6.47 (6.10 - 6.86)      | 0.57 (0.49 - 0.66)    |
| 3 doses of vaccination                  | 589                                     | 10.88 (10.02 - 11.78)    | 0.43 (0.35 - 0.53)    | 1009                                   | 5.98 (5.62 - 6.36)      | 0.52 (0.42 - 0.64)    |
| <b>Stroke</b>                           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 757                                     | 14.13 (13.15 - 15.16)    | REF                   | 817                                    | 4.66 (4.34 - 4.98)      | REF                   |
| 1 dose of vaccination                   | 447                                     | 8.29 (7.55 - 9.09)       | 0.59 (0.44 - 0.79)    | 695                                    | 4.09 (3.80 - 4.41)      | 0.85 (0.67 - 1.06)    |
| 2 doses of vaccination                  | 418                                     | 7.74 (7.02 - 8.51)       | 0.55 (0.43 - 0.71)    | 543                                    | 3.21 (2.95 - 3.49)      | 0.67 (0.53 - 0.83)    |
| 3 doses of vaccination                  | 295                                     | 5.46 (4.86 - 6.11)       | 0.39 (0.29 - 0.52)    | 360                                    | 2.13 (1.92 - 2.36)      | 0.44 (0.34 - 0.57)    |
| <b>Coronary artery disease</b>          |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 389                                     | 7.26 (6.57 - 8.01)       | REF                   | 628                                    | 3.58 (3.31 - 3.87)      | REF                   |
| 1 dose of vaccination                   | 266                                     | 4.93 (4.37 - 5.56)       | 0.68 (0.46 - 1.00)    | 479                                    | 2.82 (2.58 - 3.08)      | 0.77 (0.59 - 0.99)    |
| 2 doses of vaccination                  | 249                                     | 4.62 (4.08 - 5.22)       | 0.64 (0.46 - 0.90)    | 299                                    | 1.76 (1.58 - 1.98)      | 0.48 (0.36 - 0.63)    |
| 3 doses of vaccination                  | 244                                     | 4.50 (3.96 - 5.09)       | 0.62 (0.44 - 0.89)    | 528                                    | 3.13 (2.87 - 3.41)      | 0.85 (0.62 - 1.15)    |
| <b>Heart failure</b>                    |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 219                                     | 4.09 (3.58 - 4.66)       | REF                   | 511                                    | 2.91 (2.67 - 3.18)      | REF                   |
| 1 dose of vaccination                   | 125                                     | 2.32 (1.94 - 2.76)       | 0.57 (0.33 - 0.98)    | 297                                    | 1.75 (1.56 - 1.95)      | 0.57 (0.42 - 0.78)    |
| 2 doses of vaccination                  | 101                                     | 1.87 (1.52 - 2.25)       | 0.46 (0.28 - 0.75)    | 264                                    | 1.56 (1.38 - 1.75)      | 0.51 (0.38 - 0.69)    |
| 3 doses of vaccination                  | 52                                      | 0.97 (0.73 - 1.26)       | 0.24 (0.12 - 0.46)    | 173                                    | 1.03 (0.88 - 1.19)      | 0.33 (0.16 - 0.71)    |
| <b>Cardiovascular disease mortality</b> |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 796                                     | 14.83 (13.82 - 15.89)    | REF                   | 421                                    | 2.40 (2.18 - 2.64)      | REF                   |
| 1 dose of vaccination                   | 381                                     | 7.06 (6.38 - 7.80)       | 0.48 (0.35 - 0.64)    | 178                                    | 1.05 (0.90 - 1.21)      | 0.42 (0.29 - 0.61)    |
| 2 doses of vaccination                  | 273                                     | 5.05 (4.47 - 5.67)       | 0.34 (0.26 - 0.46)    | 164                                    | 0.97 (0.83 - 1.13)      | 0.39 (0.27 - 0.56)    |
| 3 doses of vaccination                  | 115                                     | 2.13 (1.77 - 2.55)       | 0.14 (0.08 - 0.25)    | 94                                     | 0.55 (0.45 - 0.67)      | 0.22 (0.13 - 0.37)    |
| <b>All-cause mortality</b>              |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 15531                                   | 289.51 (284.98 - 294.09) | REF                   | 9480                                   | 54.01 (52.93 - 55.10)   | REF                   |
| 1 dose of vaccination                   | 6468                                    | 119.79 (116.90 - 122.74) | 0.41 (0.39 - 0.44)    | 4353                                   | 25.64 (24.89 - 26.41)   | 0.46 (0.43 - 0.49)    |
| 2 doses of vaccination                  | 3054                                    | 56.58 (54.60 - 58.62)    | 0.20 (0.18 - 0.21)    | 2194                                   | 12.95 (12.41 - 13.50)   | 0.23 (0.21 - 0.25)    |
| 3 doses of vaccination                  | 1385                                    | 25.58 (24.25 - 26.94)    | 0.09 (0.07 - 0.11)    | 1648                                   | 9.76 (9.30 - 10.24)     | 0.17 (0.13 - 0.24)    |

Incidence rate (cases/1000 person-years) with 95% confidence interval based on Poisson distribution. Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. CI = confidence interval; REF = reference level.

Supplementary table 3, related to Figure 1. Risk of cardiovascular outcomes and mortality among individuals with different vaccination status excluding individuals who received additional vaccine doses within 28 days after COVID-19 infection.

|   | Within 28 days since COVID-19 infection |                          |                       | After 28 days since COVID-19 infection |                         |                       |
|---|---|--------------------------|-----------------------|--|-------------------------|-----------------------|
|   | Events                                  | Incidence rate (95% CI)  | Hazard ratio (95% CI) | Events                                 | Incidence rate (95% CI) | Hazard ratio (95% CI) |
| <b>Cardiovascular disease</b>           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 1575                                    | 21.14 (20.12 - 22.21)    | REF                   | 5848                                   | 8.23 (8.02 - 8.45)      | REF                   |
| 1 dose of vaccination                   | 970                                     | 13.20 (12.39 - 14.05)    | 0.63 (0.50 - 0.79)    | 4779                                   | 6.33 (6.16 - 6.52)      | 0.76 (0.68 - 0.85)    |
| 2 doses of vaccination                  | 868                                     | 11.62 (10.87 - 12.41)    | 0.55 (0.46 - 0.66)    | 3848                                   | 5.20 (5.04 - 5.37)      | 0.62 (0.57 - 0.68)    |
| 3 doses of vaccination                  | 667                                     | 8.74 (8.09 - 9.42)       | 0.42 (0.34 - 0.51)    | 2483                                   | 5.07 (4.88 - 5.27)      | 0.59 (0.53 - 0.66)    |
| <b>Stroke</b>                           |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 898                                     | 12.04 (11.27 - 12.85)    | REF                   | 2565                                   | 3.60 (3.47 - 3.74)      | REF                   |
| 1 dose of vaccination                   | 518                                     | 7.06 (6.47 - 7.69)       | 0.59 (0.43 - 0.80)    | 2143                                   | 2.84 (2.72 - 2.96)      | 0.78 (0.66 - 0.93)    |
| 2 doses of vaccination                  | 496                                     | 6.64 (6.06 - 7.23)       | 0.55 (0.43 - 0.71)    | 1782                                   | 2.40 (2.29 - 2.52)      | 0.66 (0.57 - 0.76)    |
| 3 doses of vaccination                  | 348                                     | 4.56 (4.10 - 5.05)       | 0.38 (0.29 - 0.50)    | 1102                                   | 2.25 (2.12 - 2.39)      | 0.60 (0.51 - 0.71)    |
| <b>Coronary artery disease</b>          |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 450                                     | 6.04 (5.50 - 6.62)       | REF                   | 1867                                   | 2.62 (2.50 - 2.74)      | REF                   |
| 1 dose of vaccination                   | 315                                     | 4.29 (3.84 - 4.79)       | 0.71 (0.48 - 1.06)    | 1751                                   | 2.32 (2.21 - 2.43)      | 0.87 (0.72 - 1.06)    |
| 2 doses of vaccination                  | 260                                     | 3.47 (3.07 - 3.91)       | 0.58 (0.42 - 0.80)    | 1359                                   | 1.83 (1.74 - 1.93)      | 0.69 (0.59 - 0.81)    |
| 3 doses of vaccination                  | 264                                     | 3.46 (3.07 - 3.90)       | 0.58 (0.41 - 0.81)    | 1048                                   | 2.14 (2.01 - 2.27)      | 0.79 (0.66 - 0.93)    |
| <b>Heart failure</b>                    |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 241                                     | 3.23 (2.84 - 3.65)       | REF                   | 1588                                   | 2.23 (2.12 - 2.34)      | REF                   |
| 1 dose of vaccination                   | 136                                     | 1.85 (1.57 - 2.19)       | 0.58 (0.32 - 1.03)    | 1025                                   | 1.36 (1.27 - 1.44)      | 0.60 (0.48 - 0.74)    |
| 2 doses of vaccination                  | 121                                     | 1.61 (1.34 - 1.92)       | 0.50 (0.31 - 0.80)    | 788                                    | 1.06 (0.99 - 1.14)      | 0.47 (0.39 - 0.57)    |
| 3 doses of vaccination                  | 58                                      | 0.76 (0.58 - 0.97)       | 0.23 (0.13 - 0.43)    | 384                                    | 0.78 (0.71 - 0.87)      | 0.34 (0.27 - 0.43)    |
| <b>Cardiovascular disease mortality</b> |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 933                                     | 12.51 (11.72 - 13.33)    | REF                   | 1355                                   | 1.90 (1.80 - 2.00)      | REF                   |
| 1 dose of vaccination                   | 457                                     | 6.22 (5.68 - 6.82)       | 0.50 (0.37 - 0.67)    | 700                                    | 0.93 (0.86 - 1.00)      | 0.49 (0.38 - 0.63)    |
| 2 doses of vaccination                  | 315                                     | 4.21 (3.76 - 4.69)       | 0.34 (0.26 - 0.45)    | 472                                    | 0.64 (0.58 - 0.69)      | 0.33 (0.27 - 0.42)    |
| 3 doses of vaccination                  | 125                                     | 1.64 (1.36 - 1.94)       | 0.13 (0.08 - 0.21)    | 223                                    | 0.46 (0.40 - 0.52)      | 0.20 (0.15 - 0.27)    |
| <b>All-cause mortality</b>              |   |                          |                       |  |                         |                       |
| Unvaccinated                            | 17728                                   | 237.72 (234.23 - 241.23) | REF                   | 18728                                  | 26.26 (25.89 - 26.64)   | REF                   |
| 1 dose of vaccination                   | 7489                                    | 101.92 (99.63 - 104.25)  | 0.43 (0.40 - 0.46)    | 8860                                   | 11.71 (11.47 - 11.96)   | 0.45 (0.42 - 0.48)    |
| 2 doses of vaccination                  | 3444                                    | 46.06 (44.55 - 47.62)    | 0.19 (0.18 - 0.21)    | 5342                                   | 7.20 (7.01 - 7.39)      | 0.27 (0.26 - 0.29)    |
| 3 doses of vaccination                  | 1370                                    | 17.95 (17.02 - 18.92)    | 0.08 (0.06 - 0.09)    | 2483                                   | 5.06 (4.87 - 5.27)      | 0.17 (0.16 - 0.19)    |

Incidence rate (cases/1000 person-years) with 95% confidence interval based on Poisson distribution. Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. CI = confidence interval; REF = reference level.

Supplementary table 4, related to Figure 1. Risk of cardiovascular outcomes and mortality among individuals with different vaccination status using competing risk method.

|   | Within 28 days since COVID-19 infection |                         |                       | After 28 days since COVID-19 infection |                         |                       |
|---|---|-------------------------|-----------------------|--|-------------------------|-----------------------|
|   | Events                                  | Incidence rate (95% CI) | Hazard ratio (95% CI) | Events                                 | Incidence rate (95% CI) | Hazard ratio (95% CI) |
| <b>Cardiovascular disease</b>           |   |                         |                       |  |                         |                       |
| Unvaccinated                            | 1597                                    | 20.86 (19.85 - 21.90)   | REF                   | 6007                                   | 8.20 (7.99 - 8.40)      | REF                   |
| 1 dose of vaccination                   | 1001                                    | 13.05 (12.26 - 13.87)   | 0.63 (0.58 - 0.68)    | 5153                                   | 6.53 (6.36 - 6.71)      | 0.79 (0.76 - 0.82)    |
| 2 doses of vaccination                  | 883                                     | 11.58 (10.84 - 12.37)   | 0.56 (0.52 - 0.61)    | 3951                                   | 5.23 (5.07 - 5.39)      | 0.63 (0.61 - 0.66)    |
| 3 doses of vaccination                  | 667                                     | 8.74 (8.09 - 9.42)      | 0.42 (0.39 - 0.46)    | 2483                                   | 5.07 (4.87 - 5.27)      | 0.59 (0.57 - 0.62)    |
| <b>Stroke</b>                           |   |                         |                       |  |                         |                       |
| Unvaccinated                            | 906                                     | 11.83 (11.08 - 12.62)   | REF                   | 2647                                   | 3.60 (3.47 - 3.74)      | REF                   |
| 1 dose of vaccination                   | 534                                     | 6.96 (6.38 - 7.56)      | 0.59 (0.53 - 0.66)    | 2328                                   | 2.95 (2.83 - 3.07)      | 0.81 (0.77 - 0.86)    |
| 2 doses of vaccination                  | 499                                     | 6.54 (5.99 - 7.13)      | 0.56 (0.50 - 0.62)    | 1836                                   | 2.43 (2.32 - 2.54)      | 0.67 (0.63 - 0.71)    |
| 3 doses of vaccination                  | 348                                     | 4.56 (4.09 - 5.05)      | 0.39 (0.34 - 0.44)    | 1102                                   | 2.25 (2.12 - 2.39)      | 0.60 (0.56 - 0.64)    |
| <b>Coronary artery disease</b>          |   |                         |                       |  |                         |                       |
| Unvaccinated                            | 453                                     | 5.91 (5.38 - 6.47)      | REF                   | 1906                                   | 2.59 (2.48 - 2.71)      | REF                   |
| 1 dose of vaccination                   | 319                                     | 4.16 (3.73 - 4.64)      | 0.71 (0.61 - 0.82)    | 1831                                   | 2.32 (2.21 - 2.42)      | 0.88 (0.82 - 0.94)    |
| 2 doses of vaccination                  | 271                                     | 3.56 (3.16 - 4.00)      | 0.61 (0.52 - 0.71)    | 1391                                   | 1.84 (1.74 - 1.94)      | 0.70 (0.65 - 0.75)    |
| 3 doses of vaccination                  | 264                                     | 3.46 (3.07 - 3.90)      | 0.59 (0.51 - 0.69)    | 1048                                   | 2.14 (2.01 - 2.27)      | 0.80 (0.74 - 0.86)    |
| <b>Heart failure</b>                    |   |                         |                       |  |                         |                       |
| Unvaccinated                            | 252                                     | 3.28 (2.89 - 3.71)      | REF                   | 1635                                   | 2.22 (2.12 - 2.33)      | REF                   |
| 1 dose of vaccination                   | 147                                     | 1.92 (1.63 - 2.25)      | 0.59 (0.48 - 0.72)    | 1140                                   | 1.44 (1.36 - 1.53)      | 0.64 (0.59 - 0.69)    |
| 2 doses of vaccination                  | 121                                     | 1.58 (1.32 - 1.88)      | 0.49 (0.39 - 0.61)    | 809                                    | 1.07 (1.00 - 1.14)      | 0.47 (0.44 - 0.51)    |
| 3 doses of vaccination                  | 58                                      | 0.75 (0.58 - 0.97)      | 0.23 (0.17 - 0.31)    | 384                                    | 0.78 (0.71 - 0.87)      | 0.34 (0.30 - 0.38)    |
| <b>Cardiovascular disease mortality</b> |   |                         |                       |  |                         |                       |
| Unvaccinated                            | 933                                     | 12.17 (11.40 - 12.96)   | REF                   | 1421                                   | 1.93 (1.83 - 2.03)      | REF                   |
| 1 dose of vaccination                   | 457                                     | 5.96 (5.43 - 6.53)      | 0.49 (0.44 - 0.55)    | 741                                    | 0.94 (0.87 - 1.01)      | 0.49 (0.45 - 0.53)    |
| 2 doses of vaccination                  | 315                                     | 4.13 (3.69 - 4.60)      | 0.34 (0.30 - 0.39)    | 487                                    | 0.64 (0.59 - 0.70)      | 0.33 (0.30 - 0.37)    |
| 3 doses of vaccination                  | 125                                     | 1.64 (1.36 - 1.94)      | 0.14 (0.11 - 0.16)    | 223                                    | 0.45 (0.40 - 0.52)      | 0.20 (0.17 - 0.23)    |

Incidence rate (cases/1000 person-years) with 95% confidence interval based on Poisson distribution. Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. CI = confidence interval; REF = reference level.

Supplementary table 5, related to Figure 1. Risk of cardiovascular outcomes and mortality among individuals with different vaccination status within 28-90 Days and beyond 90 Days since COVID-19 Infection.

|   | Within 28-90 Days since COVID-19 infection |                         |                       | After 90 days since COVID-19 infection |                         |                       |
|---|--|-------------------------|-----------------------|--|-------------------------|-----------------------|
|   | Events                                     | Incidence rate (95% CI) | Hazard ratio (95% CI) | Events                                 | Incidence rate (95% CI) | Hazard ratio (95% CI) |
| <b>Cardiovascular disease</b>           |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 1668                                       | 9.89 (9.42 - 10.37)     | REF                   | 4426                                   | 7.82 (7.59 - 8.05)      | REF                   |
| 1 dose of vaccination                   | 1175                                       | 6.95 (6.56 - 7.35)      | 0.70 (0.57 - 0.87)    | 3984                                   | 6.43 (6.23 - 6.63)      | 0.81 (0.71 - 0.92)    |
| 2 doses of vaccination                  | 872  | 5.20 (4.86 - 5.55)      | 0.53 (0.44 - 0.63)    | 3068                                   | 5.22 (5.04 - 5.41)      | 0.66 (0.59 - 0.73)    |
| 3 doses of vaccination                  | 934  | 5.57 (5.22 - 5.94)      | 0.56 (0.47 - 0.68)    | 1541                                   | 4.79 (4.56 - 5.04)      | 0.59 (0.52 - 0.67)    |
| <b>Stroke</b>                           |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 717  | 4.25 (3.95 - 4.57)      | REF                   | 1969                                   | 3.47 (3.32 - 3.63)      | REF                   |
| 1 dose of vaccination                   | 569  | 3.36 (3.10 - 3.65)      | 0.79 (0.57 - 1.10)    | 1762                                   | 2.84 (2.71 - 2.97)      | 0.81 (0.66 - 0.98)    |
| 2 doses of vaccination                  | 384  | 2.29 (2.06 - 2.52)      | 0.54 (0.41 - 0.71)    | 1447                                   | 2.46 (2.34 - 2.59)      | 0.70 (0.60 - 0.82)    |
| 3 doses of vaccination                  | 379  | 2.26 (2.04 - 2.49)      | 0.53 (0.40 - 0.71)    | 719                                    | 2.24 (2.08 - 2.40)      | 0.62 (0.51 - 0.75)    |
| <b>Coronary artery disease</b>          |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 519  | 3.07 (2.81 - 3.34)      | REF                   | 1409                                   | 2.48 (2.36 - 2.61)      | REF                   |
| 1 dose of vaccination                   | 369  | 2.18 (1.97 - 2.41)      | 0.71 (0.48 - 1.04)    | 1463                                   | 2.35 (2.24 - 2.48)      | 0.93 (0.75 - 1.15)    |
| 2 doses of vaccination                  | 295  | 1.75 (1.56 - 1.96)      | 0.57 (0.42 - 0.78)    | 1094                                   | 1.86 (1.75 - 1.97)      | 0.73 (0.61 - 0.88)    |
| 3 doses of vaccination                  | 393  | 2.34 (2.12 - 2.59)      | 0.76 (0.57 - 1.03)    | 652                                    | 2.03 (1.88 - 2.19)      | 0.78 (0.64 - 0.96)    |
| <b>Heart failure</b>                    |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 463  | 2.74 (2.50 - 3.00)      | REF                   | 1200                                   | 2.11 (1.99 - 2.23)      | REF                   |
| 1 dose of vaccination                   | 236  | 1.40 (1.23 - 1.58)      | 0.51 (0.34 - 0.75)    | 904                                    | 1.45 (1.36 - 1.55)      | 0.67 (0.53 - 0.85)    |
| 2 doses of vaccination                  | 202  | 1.20 (1.05 - 1.38)      | 0.44 (0.31 - 0.62)    | 602                                    | 1.02 (0.94 - 1.11)      | 0.47 (0.38 - 0.59)    |
| 3 doses of vaccination                  | 168  | 1.00 (0.86 - 1.16)      | 0.36 (0.25 - 0.54)    | 215                                    | 0.67 (0.58 - 0.76)      | 0.31 (0.23 - 0.42)    |
| <b>Cardiovascular disease mortality</b> |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 514  | 3.04 (2.79 - 3.32)      | REF                   | 933                                    | 1.64 (1.54 - 1.75)      | REF                   |
| 1 dose of vaccination                   | 229  | 1.35 (1.19 - 1.54)      | 0.45 (0.29 - 0.68)    | 512                                    | 0.82 (0.75 - 0.90)      | 0.50 (0.37 - 0.67)    |
| 2 doses of vaccination                  | 182  | 1.09 (0.94 - 1.25)      | 0.36 (0.25 - 0.51)    | 302                                    | 0.51 (0.46 - 0.57)      | 0.31 (0.24 - 0.40)    |
| 3 doses of vaccination                  | 124  | 0.74 (0.62 - 0.88)      | 0.24 (0.16 - 0.36)    | 98                                     | 0.31 (0.25 - 0.37)      | 0.16 (0.11 - 0.24)    |
| <b>All-cause mortality</b>              |  |                         |                       |  |                         |                       |
| Unvaccinated                            | 7231                                       | 42.79 (41.81 - 43.78)   | REF                   | 12535                                  | 22.04 (21.66 - 22.43)   | REF                   |
| 1 dose of vaccination                   | 2972                                       | 17.55 (16.93 - 18.19)   | 0.41 (0.37 - 0.46)    | 6271                                   | 10.08 (9.83 - 10.33)    | 0.45 (0.41 - 0.49)    |
| 2 doses of vaccination                  | 1686                                       | 10.03 (9.56 - 10.52)    | 0.23 (0.21 - 0.26)    | 3718                                   | 6.31 (6.11 - 6.52)      | 0.28 (0.26 - 0.30)    |
| 3 doses of vaccination                  | 1110                                       | 6.61 (6.23 - 7.01)      | 0.15 (0.13 - 0.18)    | 1353                                   | 4.20 (3.98 - 4.43)      | 0.18 (0.16 - 0.21)    |

Incidence rate (cases/1000 person-years) with 95% confidence interval based on Poisson distribution. Hazard ratio with 95% confidence interval was obtained by Cox regression adjusted with weighting. CI = confidence interval; REF = reference level.