**Supplemental Table 1**. Relationship between SARS-CoV-2 variants, spike mutations [(substitutions or deletions (Del)] selected a priori and day-90 mortality by multivariate logistic regression analysis.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | **All patients** |  | **Day-90 survivors** | **Day-90 non-survivors** | **ORaa (CI95%)** |  | **p-value** |
| N=409 |   | N=261 | N=148 |   |
| **Variants** | α | 193 (47.2%) |   | 132 (50.6%) | 61 (41.2%) | 1(ref) |   | 0.321 |
|   | Pre-existing variant | 183 (44.7%) |   | 109 (41.8%) | 74 (50.0%) | 0.82 (0.50;1.34) |   | 0.428 |
|   | Others | 33 (8.1%) |   | 20 (7.7%) | 13 (8.8%) | 1.55 (0.67;3.58) |   | 0.308 |
| **N501Y** |   | 218 (53.3%) |   | 148 (56.7%) | 70 (47.3%) | 1.19 (0.75;1.91) |   | 0.461 |
| **N501Y x α b** | None | 191 (46.7%) |   | 113 (43.3%) | 78 (52.7%) | 1(ref) |   | 0.646 |
|  | N501Y | 25 (6.1%) |   | 16 (6.1%) | 9 (6.1%) | 1.52 (0.58;3.98) |   | 0.390 |
|  | N501Y & α | 193 (47.2%) |   | 132 (50.6%) | 61 (41.2%) | 1.15 (0.71;1.87) |   | 0.563 |
| **Del 69-70** |   | 191 (46.7%) |   | 131 (50.2%) | 60 (40.5%) | 1.10 (0.69;1.76) |   | 0.688 |
| **Del 140-145** |   | 193 (47.2%) |   | 133 (51.0%) | 60 (40.5%) | 1.08 (0.67;1.72) |   | 0.753 |
| **Del 242-244** |   | 20 (4.9%) |   | 14 (5.4%) | 6 (4.1%) | 1.30 (0.45;3.78) |   | 0.628 |
| **L5F** |   | 16 (3.9%) |   | 10 (3.8%) | 6 (4.1%) | 0.96 (0.30;3.02) |   | 0.940 |
| **L18F** |   | 17 (4.2%) |   | 11 (4.2%) | 6 (4.1%) | 1.68 (0.54;5.26) |   | 0.371 |
| **D80A/G** |   | 20 (4.9%) |   | 14 (5.4%) | 6 (4.1%) | 1.17 (0.41;3.37) |   | 0.765 |
| **S98F** |   | 13 (3.2%) |   | 9 (3.4%) | 4 (2.7%) | 0.88 (0.23;3.36) |   | 0.855 |
| **K417N/T** |   | 22 (5.4%) |   | 15 (5.7%) | 7 (4.7%) | 1.26 (0.46;3.43) |   | 0.653 |
| **L452R** |   | 8 (2.0%) |   | 4 (1.5%) | 4 (2.7%) | 1.89 (0.41;8.67) |   | 0.414 |
| **S477N** |   | 76 (18.6%) |   | 41 (15.7%) | 35 (23.6%) | 0.89 (0.49;1.60) |   | 0.693 |
| **E484K** |   | 25 (6.1%) |   | 17 (6.5%) | 8 (5.4%) | 1.22 (0.47;3.18) |   | 0.679 |
| **A570D** |   | 190 (46.5%) |   | 130 (49.8%) | 60 (40.5%) | 1.11 (0.70;1.77) |   | 0.659 |
| **D614G** |   | 398 (97.3%) |   | 255 (97.7%) | 143 (96.6%) | 0.60 (0.15;2.43) |   | 0.477 |
| **H655Y** |   | 6 (1.5%) |   | 3 (1.1%) | 3 (2.0%) | 1.65 (0.28;9.68) |   | 0.581 |
| **P681H** |   | 188 (46.0%) |   | 128 (49.0%) | 60 (40.5%) | 1.11 (0.69;1.77) |   | 0.674 |
| **P681R** |   | 9 (2.2%) |   | 4 (1.5%) | 5 (3.4%) | 3.23 (0.70;14.98) |   | 0.134 |