***Supplementary Material***

**SARS-CoV-2 pre-exposure prophylaxis with tixagevimab/cilgavimab (AZD7442) provides protection in Inborn Errors of Immunity with Antibody Defects: a real-world experience.**

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**Supplementary Tables**

**Supplementary Table 1**. Characteristics of patients recently infected by SARS-CoV-2 within three months before the enrollment.

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| --- | --- | --- | --- |
|  | Recently infectedn= 35  | p value1 | p value2 |
| Age (years), median (IQR) | 54 (41-66) | 0.498 | 0.865 |
| Gender (female), n (%) | 21 (61.8) | 0.199 | 0.397 |
| IgA (mg/dL), median (IQR) | 11 (2-59) | 0.106 | 0.005 |
| Residual IgG (mg/dL), median (IQR) | 621 (605-670) | 0.503 | 0.801 |
| IEI Diagnosis |  |  |  |
| CVID, n (%) | 22 (62.9) | 0.065 | 0.082 |
| XLA, n (%) | 2 (5.7) |  0.801 | 0.590 |
| Good syndrome, n (%) | 1 (2.9) | 0.860 | 0.966 |
| UAD, n (%) | 9 (25.7) | 0.003 | 0.072 |
| Others n (%) | 1 (2.9) |  0.353 | 0.966 |
| Lymphocytes count, median (IQR) | 1620 (1160-2040) | 0.908 | 0.171 |
| CD3+CD4+ (cell/mm3), median (IQR)  | 472 (402-784) | 0.799 | 0.366 |
| CD19+ (cell/mm3), median (IQR) | 83.9 (8.2-250.6) | 0.641 | 0.381 |
| MBC (CD19+CD27, cell/mm3), median (IQR) | 21.2 (2.4-39.9) | 0.774 | 0.952 |
| Complicated phenotype, n (%) | 10 (30) | 0.078 | 0.016 |
| COPD, n (%) | 23 (46.7) | <0.0001 | 0.068 |
| SARS-COV-2 vaccine doses >=3, n (%) | 35 (100) | 0.018 | 0.068 |

Abbreviation:IEI inborn errors of immunity, CVID common variable immunodeficiency, XLA X linked agammaglobulinemia, UAD undefined antibody deficiency, COPD Chronic Pulmonary Disease, COVID-19 coronavirus disease 2019, IQR interquartile range, MBC memory B cells, SARS-CoV-2 severe acute respiratory syndrome coronavirus 2.

1comparison with No-AZD7442 group; 2comparison with AZD7442 group.

**Supplementary Table 2.** Univariate analysis of patient’s characteristics associated with SARS-CoV-2 infection.

|  | Not infectedn= 156 | SARS-Cov-2 infectionn=59 | p value |
| --- | --- | --- | --- |
| Age (years), median (IQR) | 49 (36-59) | 54 (45-64) | 0.047 |
| Gender (female), n (%) | 69 (44.2) | 32 (54.2) | 0.439 |
| Serum IgA (mg/dL), median (IQR) | 2 (1-22) | 5 (2-13) | 0.439 |
| Lymphocytes count, median (IQR) | 1445 (1130-2020) | 1460 (930-1890) | 0.146 |
| CD3+CD4+ (cell/mm3), median (IQR)  | 516 (400-728) | 578 (395-859) | 0.797 |
| CD19+ (cell/mm3), median (IQR)  | 52.5 (21.9-161.1) | 57.6 (11-134.5) | 0.635 |
| CD19+ CD27+ (% of CD19+), median (IQR) | 22.2 (5.9-45) | 22.6 (8-41) | 0.468 |
| Complicated phenotype, n (%) | 59 (47.2) | 23 (47.9) | 0.804 |
| COPD, n (%) | 52 (33.6) | 24 (41.7) | 0.322 |
| Prior episode of COVID-19, n (%) | 56 (36.1) | 3 (5.1) | <0.0001 |
| Vaccinated (>=3 doses), n (%) | 134 (86.3) | 52 (88.1) | 0.668 |
| Last vaccine dose within 6 months | 79 (50.7) | 25 (43.2) | 0.279 |

Abbreviation: IEI inborn errors of immunity, CVID common variable immunodeficiency, XLA X linked agammaglobulinemia, UAD undefined antibody deficiency, COPD Chronic Pulmonary Disease, COVID-19 coronavirus disease 2019, IQR interquartile range, SARS-CoV-2 severe acute respiratory syndrome coronavirus 2.

**Supplementary Table 3.** Univariate analysis of patient’s characteristics associated with symptomatic SARS-CoV-2 infection.

|  |  |  |  |
| --- | --- | --- | --- |
|   | Symptomatic infections n=42 | Asymptomatic infections n=10 | p value |
| Age (years), median (IQR) | 52 (43-58) | 50 (25-55) | 0.179 |
| Gender (female), n (%) | 21 (50) | 3 (30) | 0.254 |
| Serum IgA (mg/dL), median (IQR) |  3 (2-20) |  12 (2-43) | 0.520 |
| Lymphocytes count, median (IQR) |  1745 (1280-2280) |  1070 (990-1380) | 0.034 |
| Complicated phenotype, n (%) | 19 (45.2) | 2 (20) | 0.144 |
| COPD, n (%) | 10 (23.8) | 4 (40) | 0.299 |
| Prior episode of COVID-19, n (%) | 14 (33.3) | 2 (20) | 0.412 |
| Vaccinated (>=3 doses), n (%) | 34 (80.1) | 8 (80) | 0.945 |
| Last vaccine dose within 6 months | 26 (61.9) | 5 (50) | 0.490 |

Abbreviation: COPD Chronic Pulmonary Disease, COVID-19 coronavirus disease 2019, IQR interquartile range, SARS-CoV-2 severe acute respiratory syndrome coronavirus 2.

**Supplementary Figure 1.** Gating strategy. (A) FACS plots depict the gating strategy for the identification of total (CD19+CD24+CD27+), IgM+ and IgM- MBCs, in a representative HCW. Low (S+) and high (S++) affinity spike-specific MBCs are shown. (B) IgM+, IgM- and RBD+ MBCs among S+ and S++. IgM expression on receptor binding domain (RBD+) MBCs is shown.



**Supplementary Figure 2.** Patients infected by SARS-CoV-2 in the AZD7442 group (red line) and in the no-AZD7442 (blue line) stratified for the entry condition of being COVID-19 naive. The difference between the two groups is expressed as Log-rank (the last significant comparison was reported). Red dots and blue squares represent participants infected in the AZD7442 and in the no-AZD744 group, respectively.

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**Supplementary Figure 3.** The proportion of MBC (CD19+CD27+) recorded in patients infected or not by SARS-CoV-2 in the AZD7442 (red histograms) and in the no-AZD7442 group (blue histograms). Histograms indicated median. Non-parametric Mann–Whitney t-test was used to evaluate statistical significance. Two-tailed P value significances are shown as \*p< 0.05. Abbreviations: MBC memory B cells, COVID-19 coronavirus 19 disease.

