**Supplemental Table 3A: Anti-SARS-CoV-2 spike IgG titers by different cutoffs**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Anti-SARS-CoV-2 spike IgG** | | | | | | | | | | | | | | |
| **Variable** | **Group** | **N** | **< 50** | **> 50** | **P-value** | **< 100** | **>100** | **P-value** | **< 1000** | **>1000** | **P-value** | **< 5000** | **>5000** | **P-value** | **< 10000** | **>10000** | **P-value** |
| Age | <60 | 61 | 6 (10%) | 55 (90%) | 0.651 | 7 (11%) | 54 (89%) | 0.593 | 18 (30%) | 43 (70%) | 0.42 | 33 (54%) | 28 (46%) | 0.882 | 40 (66%) | 21 (34%) | 0.809 |
|  | 60-70 | 91 | 13 (14%) | 78 (86%) |  | 16 (18%) | 75 (82%) |  | 29 (32%) | 62 (68%) |  | 50 (55%) | 41 (45%) |  | 61 (67%) | 30 (33%) |  |
|  | >70 | 65 | 10 (15%) | 55 (85%) |  | 11 (17%) | 54 (83%) |  | 26 (40%) | 39 (60%) |  | 38 (58%) | 27 (42%) |  | 46 (71%) | 19 (29%) |  |
| Cell Therapy | Allo | 149 | 16 (11%) | 133 (89%) | 0.001 | 20 (13%) | 129 (87%) | 0.002 | 45 (30%) | 104 (70%) | 0.058 | 74 (50%) | 75 (50%) | 0.015 | 97 (65%) | 52 (35%) | 0.433 |
|  | Auto | 61 | 8 (13%) | 53 (87%) |  | 9 (15%) | 52 (85%) |  | 23 (38%) | 38 (62%) |  | 41 (67%) | 20 (33%) |  | 44 (72%) | 17 (28%) |  |
|  | CAR T | 7 | 5 (71%) | 2 (29%) |  | 5 (71%) | 2 (29%) |  | 5 (71%) | 2 (29%) |  | 6 (86%) | 1 (14%) |  | 6 (86%) | 1 (14%) |  |
| Time groups per type of cellular treatment | Early Allo | 19 | 4 (21%) | 15 (79%) | 0.282 | 5 (26%) | 14 (74%) | 0.228 | 10 (53%) | 9 (47%) | 0.037 | 13 (68%) | 6 (32%) | 0.042 | 16 (84%) | 3 (16%) | 0.105 |
|  | Mid Allo | 55 | 6 (11%) | 49 (89%) |  | 7 (13%) | 48 (87%) |  | 18 (33%) | 37 (67%) |  | 31 (56%) | 24 (44%) |  | 37 (67%) | 18 (33%) |  |
|  | Late Allo | 75 | 6 (8%) | 69 (92%) |  | 8 (11%) | 67 (89%) |  | 17 (23%) | 58 (77%) |  | 30 (40%) | 45 (60%) |  | 44 (59%) | 31 (41%) |  |
|  | Early Auto | 20 | 7 (35%) | 13 (65%) | 0.001 | 7 (35%) | 13 (65%) | 0.004 | 10 (50%) | 10 (50%) | 0.26 | 15 (75%) | 5 (25%) | 0.402 | 15 (75%) | 5 (25%) | >0.99 |
|  | Late Auto | 41 | 1 (2%) | 40 (98%) |  | 2 (5%) | 39 (95%) |  | 13 (32%) | 28 (68%) |  | 26 (63%) | 15 (37%) |  | 29 (71%) | 12 (29%) |  |
| Prior COVID Infection | No | 202 | 28 (14%) | 174 (86%) | 0.699 | 32 (16%) | 170 (84%) | >0.99 | 71 (35%) | 131 (65%) | 0.097 | 119 (59%) | 83 (41%) | 0.001 | 144 (71%) | 58 (29%) | <0.001 |
|  | Yes | 15 | 1 (7%) | 14 (93%) |  | 2 (13%) | 13 (87%) |  | 2 (13%) | 13 (87%) |  | 2 (13%) | 13 (87%) |  | 3 (20%) | 12 (80%) |  |
| Immune suppression with Tacrolimus/cyclosporine or Ruxolitinib (among Allo only) | No | 103 | 11 (11%) | 92 (89%) | >0.99 | 13 (13%) | 90 (87%) | 0.795 | 28 (27%) | 75 (73%) | 0.251 | 51 (50%) | 52 (50%) | >0.99 | 66 (64%) | 37 (36%) | 0.853 |
|  | Yes | 46 | 5 (11%) | 41 (89%) |  | 7 (15%) | 39 (85%) |  | 17 (37%) | 29 (63%) |  | 23 (50%) | 23 (50%) |  | 31 (67%) | 15 (33%) |  |
| Steroids treatment (among Allo only) | No | 128 | 9 (7%) | 119 (93%) | 0.002 | 13 (10%) | 115 (90%) | 0.01 | 33 (26%) | 95 (74%) | 0.009 | 59 (46%) | 69 (54%) | 0.036 | 80 (62%) | 48 (38%) | 0.138 |
|  | Yes | 21 | 7 (33%) | 14 (67%) |  | 7 (33%) | 14 (67%) |  | 12 (57%) | 9 (43%) |  | 15 (71%) | 6 (29%) |  | 17 (81%) | 4 (19%) |  |
| Dara (among Auto only) | No | 49 | 7 (14%) | 42 (86%) | >0.99 | 7 (14%) | 42 (86%) | >0.99 | 15 (31%) | 34 (69%) | 0.043 | 30 (61%) | 19 (39%) | 0.083 | 33 (67%) | 16 (33%) | 0.151 |
|  | Yes | 12 | 1 (8%) | 11 (92%) |  | 2 (17%) | 10 (83%) |  | 8 (67%) | 4 (33%) |  | 11 (92%) | 1 (8%) |  | 11 (92%) | 1 (8%) |  |
| IMiDs (among Auto only) | No | 41 | 6 (15%) | 35 (85%) | >0.99 | 6 (15%) | 35 (85%) | >0.99 | 14 (34%) | 27 (66%) | 0.574 | 24 (59%) | 17 (41%) | 0.046 | 27 (66%) | 14 (34%) | 0.141 |
|  | Yes | 20 | 2 (10%) | 18 (90%) |  | 3 (15%) | 17 (85%) |  | 9 (45%) | 11 (55%) |  | 17 (85%) | 3 (15%) |  | 17 (85%) | 3 (15%) |  |
| mRNA-127(Moderna) | 0 | 65 | 6 (9%) | 59 (91%) | 0.283 | 7 (11%) | 58 (89%) | 0.226 | 13 (20%) | 52 (80%) | 0.007 | 27 (42%) | 38 (58%) | 0.007 | 34 (52%) | 31 (48%) | 0.002 |
| BNT162b2 (Pfizer-BioNTech) | 1 | 152 | 23 (15%) | 129 (85%) |  | 27 (18%) | 125 (82%) |  | 60 (39%) | 92 (61%) |  | 94 (62%) | 58 (38%) |  | 113 (74%) | 39 (26%) |  |
| CD4 Count | <200 | 29 | 10 (34%) | 19 (66%) | **0.012** | 12 (41%) | 17 (59%) | **0.002** | 20 (69%) | 9 (31%) | **<0.001** | 24 (83%) | 5 (17%) | **0.001** | 26 (90%) | 3 (10%) | **0.011** |
|  | >200 | 108 | 14 (13%) | 94 (87%) |  | 14 (13%) | 94 (87%) |  | 28 (26%) | 80 (74%) |  | 54 (50%) | 54 (50%) |  | 71 (66%) | 37 (34%) |  |
| CD19 Count | >50 | 27 | 18 (67%) | 9 (33%) | **<0.001** | 20 (74%) | 7 (26%) | **<0.001** | 22 (81%) | 5 (19%) | **<0.001** | 25 (93%) | 2 (7%) | **<0.001** | 25 (93%) | 2 (7%) | **0.004** |
|  | >50 | 110 | 6 (5%) | 104 (95%) |  | 6 (5%) | 104 (95%) |  | 26 (24%) | 84 (76%) |  | 53 (48%) | 57 (52%) |  | 72 (65%) | 38 (35%) |  |
| Mitogen level | <40 | 12 | 7 (58%) | 5 (42%) | **<0.001** | 7 (58%) | 5 (42%) | **0.001** | 9 (75%) | 3 (25%) | **0.003** | 11 (92%) | 1 (8%) | **0.012** | 11 (92%) | 1 (8%) | 0.104 |
|  | >40 | 110 | 12 (11%) | 98 (89%) |  | 14 (13%) | 96 (87%) |  | 32 (29%) | 78 (71%) |  | 58 (53%) | 52 (47%) |  | 74 (67%) | 36 (33%) |  |
| IgG level | <500 | 34 | 10 (29%) | 24 (71%) | 0.003 | 11 (32%) | 23 (68%) | 0.005 | 20 (59%) | 14 (41%) | 0.001 | 25 (74%) | 9 (26%) | 0.048 | 25 (74%) | 9 (26%) | 0.533 |
|  | >500 | 117 | 10 (9%) | 107 (91%) |  | 12 (10%) | 105 (90%) |  | 31 (26%) | 86 (74%) |  | 62 (53%) | 55 (47%) |  | 78 (67%) | 39 (33%) |  |
| All immune criteria met prior to COVID vaccine | No | 52 | 15 (29%) | 37 (71%) | **<0.001** | 17 (33%) | 35 (67%) | **<0.001** | 29 (56%) | 23 (44%) | **<0.001** | 39 (75%) | 13 (25%) | **<0.001** | 40 (77%) | 12 (23%) | 0.101 |
|  | Yes | 59 | 1 (2%) | 58 (98%) |  | 1 (2%) | 58 (98%) |  | 8 (14%) | 51 (86%) |  | 23 (39%) | 36 (61%) |  | 36 (61%) | 23 (39%) |  |

**Supplemental Table 3B: Proportion of patients who will meet the threshold of >30% neutralization Ab when using different cutoffs of anti-SARS-CoV-2 spike IgG response**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **100 AU/mL** | **1000 AU/mL** | **5000 AU/mL** |
| All Patients (N=217) | 183 (84%) | 144 (66%) | 96 (44%) |
| Allo -HCT(N=149) | 129 (86%) | 104 (69%) | 75 (50%) |
| Auto-HCT (N=61) | 52 (85.2%) | 38 (62.2%) | 20 (32.7%) |
| CAR T (N=7) | 2 (28.5%) | 2 (28.5%) | 1 (14.2%) |