Suppl. 2. Summary of Results of Univariate Analysis of irAEs

| Categories | Dermatitis (n = 53) | No dermatitis (n = 191) | P-value | Hepatitis (n = 87) | No hepatitis (n = 157) | P-value | Colitis (n = 61) | No colitis (n = 183) | P-value | Thyroiditis (n) = 88 | No thyroiditis (n = 156) | P-value | Pneumonitis (n = 33) | No pneumonitis (n = 211) | P-value | Anemia (n = 101) | No Anemia (n = 143) | P-value | Neutropenia (n = 69) | No neutropenia (n = 175) | P-value | Thrombocytopenia (n = 39) | No thrombocytopenia (n = 205) | P-value |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sex |  |  | 0.45 |  |  | 0.64 |  |  | 0.15 |  |  | 0.97 |  |  | 0.055 |  |  | 0.87 |  |  | 0.019\* |  |  | 0.6 |
| Male, n (%) | 20 (38%) | 83 (43%) |  | 35 (40%) | 68 (43%) |  | 21 (34%) | 21 (11.5%) |  | 31 (35%) | 72 (46%) |  | 19 (58%) | 84 (40%) |  | 43 (43%) | 59 (41%) |  | 21 (31%) | 68 (43%) |  | 15 (38%) | 88 (43%) |  |
| Female, n (%) | 33 (62%) | 108 (57%) |  | 52 (60%) | 89 (57%) |  | 40 (65.5%) | 162 (88.5%) |  | 57 (65%) | 84 (54%) |  | 14 (42%) | 127 (60%) |  | 58 (57%) | 84 (59%) |  | 48 (69%) | 107 (57%) |  | 24 (62%) | 117 (57%) |  |
| Race |  |  | 0.08 |  |  | 0.04\* |  |  | 0.11 |  |  | 0.4 |  |  | 0.61 |  |  | 0.14 |  |  | 0.04\* |  |  | 0.86 |
| White, n (%) | 49 (92%) | 156 (82%) |  | 73 (84%) | 132 (84%) |  | 57 (94%) | 148 (81%) |  | 72 (82%) | 133 (85%) |  | 28 (85%) | 177 (84%) |  | 92 (90%) | 113 (79%) |  | 58 (84%) | 147 (84%) |  | 32 (82.1%) | 173 (84.4%) |  |
| Hispanic, n (%) | 2 (4%) | 29 (15%) |  | 11 (13%) | 20 (13%) |  | 4 (6%) | 27 (15%) |  | 14 (16%) | 17 (11%) |  | 4 (12%) | 27 (13%) |  | 7 (7%) | 24 (17%) |  | 6 (8.6%) | 25 (14.3%) |  | 5 (12.8%) | 26 (12.7%) |  |
| Asian, n (%) | 0 | 3 (1.5%) |  | 3 (3%) | 0 (0%) |  | 0 (0%) | 3 (1%) |  | 0 (0%) | 3 (2%) |  | 1 (3%) | 2 (1%) |  | 1 (1%) | 2 (1.5%) |  | 1 (1.5%) | 2 (1.1%) |  | 1 (2.6%) | 2 (1%) |  |
| African American, n (%) | 2 (2%) | 3 (1.5%) |  | 0 | 5 (3%) |  | 0 (0%) | 5(3%) |  | 2 (2%) | 3 (2%) |  | 0 (0%) | 5 (2%) |  | 2 (2%) | 3 (2.5%) |  | 4 (5.9%) | 1 (0.6%) |  | 1 (2.5%) | 4 (2%) |  |
| Age |  |  | 0.21 |  |  | 0.97 |  |  | 0.71 |  |  | 0.53 |  |  | 0.36 |  |  | 0.06 |  |  | 0.001\* |  |  | 0.017\* |
| < 65, n (%) | 15 (28%) | 42 (22%) |  | 21 (24%) | 36 (23%) |  | 16 (26%) | 41 (23%) |  | 17 (19%) | 40 (26%) |  | 9 (27%) | 48 (23%) |  | 30 (29.7%) | 27 (19%) |  | 29 (42%) | 28 (16%) |  | 16 (41%) | 41 (20%) |  |
| 65 - 79, n (%) | 23 (44%) | 69 (36%) |  | 33 (38%) | 59 (38%) |  | 24 (39%) | 68 (37%) |  | 35 (40%) | 57 (37%) |  | 15 (45%) | 77 (36%) |  | 39 (38.6%) | 53 (37%) |  | 25 (36%) | 67 (38%) |  | 11 (28%) | 81 (39.5%) |  |
| ≥ 80, n (%) | 15 (28%) | 80 (42%) |  | 33 (38%) | 62 (39%) |  | 21 (35%) | 74 (40%) |  | 36 (41%) | 59 (37%) |  | 9 (27%) | 86 (41%) |  | 32 (32.7%) | 63 (44%) |  | 15 (22%) | 80 (46%) |  | 12 (31%) | 83 (40.5%) |  |
| BMI |  |  | < 0.001\* |  |  | 0.2 |  |  | 0.15 |  |  | 0.18 |  |  | 0.02\* |  |  | 0.06 |  |  | 0.79 |  |  | 0.58 |
| < 18.5, n (%) | 2 (4%) | 15 (8%) |  | 2 (2%) | 15 (10%) |  | 4 (7%) | 13 (7%) |  | 7 (8%) | 10 (6%) |  | 1 (3%) | 16 (8%) |  | 8 (7%) | 9 (6.3%) |  | 5 (7.2%) | 12 (6.9%) |  | 4 (10.3%) | 13 (6.3%) |  |
| 18.5 - 24.9, n (%) | 15 (28%) | 89 (47%) |  | 39 (45%) | 65 (41%) |  | 31 (51%) | 73 (40%) |  | 33 (38%) | 71 (46%) |  | 21 (64%) | 83 (39%) |  | 53 (52%) | 51 (36%) |  | 32 (46.3%) | 72 (41.1%) |  | 19 (48.8%) | 85 (41.5%) |  |
| 25 - 30, n (%) | 13 (25%) | 54 (28%) |  | 25 (29%) | 42 (27%) |  | 10 (16%) | 57 (31%) |  | 31 (35%) | 36 (23%) |  | 9 (27%) | 58 (28%) |  | 22 (22%) | 45 (31.5%) |  | 19 (27.5%) | 48 (27.4%) |  | 9 (23.1%) | 58 (28.3%) |  |
| > 30, n (%) | 23 (43%) | 33 (17%) |  | 21 (24%) | 35 (22%) |  | 16 (26%) | 40 (22%) |  | 17 (19%) | 39 (25%) |  | 2 (6%) | 54 (25%) |  | 19 (19%) | 37 (25.9%) |  | 13 (18.9%) | 43 (24.6%) |  | 7 (18%) | 49 (23.9%) |  |
| Immunotherapy |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pembrolizumab, n (%) | 39 (74%) | 143 (75%) | 0.84 | 62 (71%) | 120 (76%) | 0.37 | 50 (82%) | 132 (72%) | 0.12 | 65 (74%) | 117 (75%) | 0.84 | 28 (85%) | 154 (73%) | 0.14 | 86 (85%) | 96 (67%) | 0.004\* | 57 (83%) | 125 (71%) | 0.07 | 31 (79%) | 151 (74%) | 0.47 |
| Nivolumab, n (%) | 10 (19%) | 35 (18.4%) | 0.99 | 17 (20%) | 28 (18%) | 0.58 | 9 (14.8%) | 36 (20%) | 0.34 | 19 (22%) | 26 (16.7%) | 0.41 | 3 (9%) | 42 (20%) | 0.12 | 11 (11%) | 34 (25%) | 0.01\* | 12 (17%) | 33 (19%) | 0.99 | 7 (18%) | 38 (19%) | 0.77 |
| Ipilimumab + nivolumab, n (%) | 4 (8%) | 13 (7%) | 0.85 | 8 (9%) | 9 (6%) | 0.3 | 2 (3%) | 15 (1%) | 0.19 | 4 (5%) | 13 (8%) | 0.26 | 2 (6%) | 15 (7%) | 0.82 | 5 (5%) | 12 (8%) | 0.29 | 0 (0%) | 17 (10%) | 0.007\* | 1 (3%) | 16 (7%) | 0.23 |

\*Statistically significant results in the analysis. irAEs: immune-related adverse events.