**Supplemental Data**

**Supplemental Table 1: Adverse Events Stratified by Treatment Regimen Across BMI and BSA Categories**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **BMI** |  | **BSA** |  |
|  | **<18.5** | **18.5-24.99** | **25-29.99** | **>30** | **P-value\*** | **< average** | **≥ average** | **P-value\*** |
| **Total (n, %)** | 22 (4.1%) | 230 (42.8%) | 220 (41.0%) | 65 (12.1%) |  | 262 (48.9%) | 275 (51.2%) |  |
| **Grade 3-4 Renal Failure** | 2 (9.1%) | 9 (3.9%) | 10 (4.6%) | 5 (7.7%) | 0.48 | 8 (3.1%) | 18 (6.6%) | 0.06 |
| GC-based | 1 (20%) | 4 (3.6%) | 8 (6%) | 23.53 (9%) | 0.17 | 6 (5.2%) | 11 (6.2%) | 0.74 |
| MVAC | 1 (14.3%) | 2 (3.5%) | 1 (2.3%) | 0 | 0.39 | 2 (2.8%) | 2 (4.1%) | 0.70 |
| +VEGF-targeted drugb | 0 | 0 | 3 (8.8%) | 1 (6.7%) | 0.40 | 0 | 4 | 0.26 |
| **Grade 3-4 Neutropenia** | 5 (22.7%) | 49 (21.3%) | 65 (29.6%) | 15 (23.1%) | 0.23 | 67 (25.6%) | 67 (24.4%) | 0.75 |
| GC-based | 2 (40%) | 21 (18.8%) | 44 (33.8%) | 10 (22.7%) | 0.05 | 30 (26.1%) | 47 (26.2%) | 0.97 |
| MVAC | 3 (42.9%) | 22 (53.7%) | 12 (27.3%) | 4 (9.8%) | 0.66 | 26 (36.1%) | 15 (30.6%) | 0.53 |
| +VEGF-targeted drugb | 0 | 9 (45.0%) | 22 (64.7%) | 5 (33.3%) | 0.10 | 7 (43.8%) | 29 (54.7%) | 0.44 |
| **Febrile Neutropenia** | 2 (9.1%) | 10 (4.4%) | 15 (6.4%) | 7 (10.8%) | 0.26 | 16 (6.1%) | 17 (6.2%) | 0.97 |
| GC-based | 1 (20.0%) | 4 (3.6%) | 9 (6.8%) | 3 (17.7%) | 0.26 | 10 (8.7%) | 7 (3.9%) | 0.09 |
| MVAC | 1 (14.3%) | 6 (10.3%) | 4 (9.1%) | 4 (33.3%) | 0.14 | 6 (8.3%) | 9 (18.3%) | 0.10 |
| +VEGF-targeted drugb | 0 | 0 | 1 (2.9%) | 1 (6.7%) | 0.51 | 0 | 2 (3.8%) | 0.43 |
| **Grade 3-4 Thrombocytopenia** | 4 (18.2%) | 22 (9.6%) | 30 (13.6%) | 6 (9.2%) | 0.37 | 34 (11.5%) | 28 (11.6%) | 0.95 |
| GC-based | 2 (40.0%) | 14 (12.5%) | 23 (17.3%) | 4 (9.1%) | 0.17 | 19 (16.5%) | 24 (13.4%) | 0.46 |
| MVAC | 2 (28.6%) | 8 (13.8%) | 3 (6.8%) | 2 (16.7%) | 0.23 | 10 (13.9%) | 5 (10.2%) | 0.55 |
| +VEGF-targeted drugb | 0 | 5 (25.0%) | 15 (44.1%) | 3 (20.0%) | 0.17 | 6 (37.5%) | 17 (32.1%) | 0.69 |
| **Embolic Events** | 0 | 8 (3.5%) | 10 (4.6%) | 5 (7.9%) | 0.34 | 7 (2.7%) | 16 (5.9%) | 0.07 |
| GC-based | 0 | 5 (4.6%) | 9 (6.8%) | 3 (7.1%) | 0.81 | 4 (3.6%) | 13 (7.4 %) | 0.18 |
| MVAC | 0 | 3 (5.2%) | 1 (2.3%) | 0 | 0.82 | 3 (4.2%) | 1 (2.0%) | 0.52 |
|  +VEGF-targeted drugb | 0 | 4 (23.5%) | 3 (9.1%) | 3 (23.1%) | 0.30 | 2 (15.4%) | 8 (16.0%) | 0.96 |

\*Kruskal-Wallace for continuous variables, Fisher’s exact test for categorical variables; bEither bevacizumab or sutinib;MVAC- methotrexate, vinblastine, doxorubicin, and cisplatin; GC- Gemcitabine-cisplatin

**Supplemental Table 2: Weight category as a predictor of disease characteristics in adjusted modela**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **BMI****Odds Ratio (95% CI)** | **BSA****Odds Ratio (95% CI)** |
|  |  | **<18.5** | **18.5-24.99** | **25-29.99** | **>30** | **P-value\*** | **< average** | **≥ average** | **P-value\*** |
| **Disease sites** |  |  |  |  |  |  |  |  |
| Lymph nodes | Non-Adj | Ref | 2.01 (0.82-4.94) | 2.60 (1.05-6.47) | 4.85 (1.57-15.0) | 0.03 | Ref | 1.29 (0.80-1.80) | 0.38  |
|  | Adjusted | Ref | 1.97 (0.76-5.11) | 2.52 (0.91-6.93) | 4.83 (1.42-16.4) | 0.06 | Ref | 1.23 (0.79-1.93) | 0.36 |
| Bone | Non-Adj | Ref | 0.69 (0.27-1.78) | 0.48 (0.18-1.25) | 0.26 (0.08-0.87) | 0.05 | Ref | 0.63 (0.41-0.96) | 0.03 |
|  | Adjusted | Ref | 1.01 (0.37-2.77) | 0.84 (0.27-2.44) | 0.46 (0.13-1.68) | 0.36 | Ref | 0.78 (0.49-1.26) | 0.31 |
| Lung | Non-Adj | Ref | 0.62 (0.25-1.55) | 0.68 (0.27-1.69) | 0.40 (0.14-1.18) | 0.36 | Ref | 0.96 (0.66-1.42) | 0.85 |
|  | Adjusted | Ref | 0.56 (0.21-1.46) | 0.57 (0.21-1.58) | 0.32 (0.45-1.53) | 0.22 | Ref | 0.84 (0.55-1.28) | 0.42 |
| Liver | Non-Adj | Ref | 0.53 (0.19-1.44) | 0.79 (0.23-2.12) | 0.38 (0.12-1.26) | 0.13 | Ref | 0.86 (0.56-1.33) | 0.50 |
|  | Adjusted | Ref | 0.46 (0.16-1.33) | 0.66 (0.22-1.98) | 0.32 (0.09-1.16) | 0.11 | Ref | 0.77 (0.48-1.23) | 0.27 |
| Visceral | Non-Adj | Ref | 0.80 (0.33-1.94) | 0.78 (0.32-1.90) | 0.47 (0.18-1.27) | 0.26 | Ref | 0.84 (0.60-1.18) | 0.31 |
|  | Adjusted | Ref | 0.88 (0.35-2.22) | 0.88 (0.33-2.32) | 0.50 (0.17-1.46) | 0.26 | Ref | 0.80 (0.55-1.16) | 0.24 |
| **Upper Tract Disease** | Non-Adj | Ref | 0.49 (0.20-1.20) | 0.30 (0.12-0.73) | 0.40 (0.14-1.12) | 0.03 | Ref | 0.79 (0.52-1.19) | 0.26 |
| **(n, %)** | Adjusted | Ref | 0.77 (0.29-2.00) | 0.65 (0.23-1.81) | 0.97 (0.31-3.04) | 0.64 | Ref | 1.12 (0.70-1.80) | 0.63 |
| **Prior Perioperative**  | Non-Adj | Ref | 1.16 (0.14-9.33) | 1.21 (0.15-9.78) | 5.35 (0.66-43.6) | 0.01 | Ref | 2.18 (1.08-4.43) | 0.03 |
| **Chemotherapy** | Adjusted | Ref  | 1.05 (0.13-8.7) | 1.03 (0.12-8.66) | 4.61 (0.54-39.3) | <0.01 | Ref | 1.96 (0.95-4.04) | 0.06 |
| **Surgical Intervention** | Non-Adj | Ref | 1.17 (0.49-2.82) | 1.14 (0.48-2.75) | 1.68 (0.61-4.63) | 0.63 | Ref | 1.18 (0.82-1.68) | 0.36 |
|  | Adjusted | Ref | 0.93 (0.37-2.36) | 0.92 (0.35-2.43) | 1.26 (0.42-3.77) | 0.81 | Ref | 1.03 (0.70-1.54) | 0.85 |

**a**Adjusted for geography and chemotherapy regimen

**\***Chi-square of effect of weight category on model; CI, confidence interval; BMI, body mass index; BSA, body surface area.; Adj, adusted model; Non-adj, non-adjusted model; Ref, reference category

**Supplemental Table 3: Survival Stratified by Treatment Regimen across BSA Categories**

|  |  |  |
| --- | --- | --- |
|  | **BSA** |  |
|  | **< average** | **≥ average** | **P-value\*** |
| **Median survival, years (95% CI**) |  |  |  |
| GC | 11.2 (8.2-13.7) | 13.1 (11.3-15.7) | 0.15 |
| MVAC | 16.0 (10.8-25.2) | 23.9 (12.3-39.6) | 0. |

\*Fisher’s exact test for categorical variables;MVAC- methotrexate, vinblastine, doxorubicin, and cisplatin; GC- Gemcitabine-cisplatin

**Supplemental Table 4: Urothelial tumor location stratified by country**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  | **Germany** | **Greece** | **United States** | **Taiwan** |  |  |  |  |  |
| **Upper tract disease (n (%))** |  | 30 (29.4%) | 48 (16.7%) | 7 (10.1%) | 33 (41.8%) | p<0.01\* |  | **P<0.01** |  | **p < 0.01** |

\*Fisher’s exact test for categorical variables