**Table S1. Median TTP and survival analysis**

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| --- | --- | --- | --- | --- | --- |
|  | **TTP (days) (median; range)** | **p-value** | | | **Hazard ratio (95% CI)** |
| **Log-rank test** | **Cox univariate** | **Cox multivariate** |
| Breed  Pure  Mixed | 171; 1-1403  69; 35-588 | 0.971 | 0.971 |  | 0.984 (0.420-2.307)  ref |
| Sex  Female  Spayed female  Male  Neutered male | 95; 35-1403  179; 34-325  202; 1-988  24; 1-37 | **0.005** | **0.025** | 0.088 | 0.546 (0.250-1.195)  0.761 (0.403-1.437)  0.501 (0.268-0.935)  ref |
| Age  <7 years  ≥7 years | 98; 1-1403  171; 24-988 | 0.367 | 0.371 |  | 1.396 (0.672-2.901)  Ref |
| Weight  <10kg  ≥10kg | 63; 1-455  171; 1-1403 | 0.715 | 0.717 |  | Ref  0.920 (0.585-1.447) |
| Stage  III  IV  V | 78; 78-202  60; 24-493  171; 1-1403 | 0.661 | 0.667 |  | 1.384 (0.314-6.094)  1.422 (0.636-3.182)  ref |
| Sustage  a  b | 180; 1-1403  69; 1-250 | 0.090 | 0.099 | **0.004** | 0.703 (0.462-1.069)  ref |
| Bone marrow  Infiltrated  Not infiltrated | 69; 1-588  171; 1-1403 | 0.679 | 0.681 |  | Ref  0.921 (0.622-1.363) |
| Blood infiltration (%) |  |  | 0.823 |  | 0.997 (0.967-1.027) |
| Bone marrow infiltration (%) |  |  | 0.202 | 0.221 | 1.020 (0.989-1.052) |
| CD8+ cells (flow cytometry, %) |  |  | 0.579 |  | 1.028 (0.931-1.135) |
| LDH activity  Normal  Increased | 98; 1-988  179; 1-1403 | 0.939 | 0.939 |  | Ref  1.014 (0.710-1.448) |
| Pretreatment with steroids  Yes  No | 98; 1-325  171; 1-1403 | 0.306 | 0.313 |  | Ref  0.813 (0.543-1.216) |
| Treatment  Chemo  Chemoimmuno | 34; 1-455  202; 35-1403 | **0.001** | **0.002** | **0.001** | 1.848 (1.254-2.723)  Ref |
| Immunosignature  Cold  Hot | 228; 32-988  60; 1-1403 | **0.024** | **0.029** | 0.905 | 0.662 (0.457-0.958)  Ref |
| PD-L1 (RNAseq) |  |  | 0.961 |  | 1.007 (0.749-1.355) |
| PD1 (RNAseq) |  |  | **0.001** | **0.005** | 1.381 (1.138-1.676) |
| CD8a (RNAseq) |  |  | 0.082 | 0.163 | 1.197 (0.977-1.467) |
| PD-L1 (RNAcope)  0  1  2  3  4 | 179  273; 180-988  202; 98-1403  35; 1-95  36; 1-196 | **<0.001** | **<0.001** | **0.002** | 0.389 (0.044-3.418)  0.058 (0.013-0.250)  0.059 (0.011-0.306)  1.879 (0.593-5.952)  Ref |
| PD1 (RNAscope)  0  1  2  3 | 179; 20-493  288; 35-1403  69; 1-455  37; 1-196 | **0.010** | **0.019** | 0.239 | 0.306 (0.097-0.964)  0.165 (0.051-0.534)  0.555 (0.190-1.618)  Ref |
| CD8a (RNAscope)  0  1  2  3  4 | 250; 250-273  98; 1-1403  196; 32-988  35; 1-455  36; 36-60 | 0.182 | 0.227 | 0.138 | 0.223 (0.028-1.761)  0.199 (0.036-1.095)  0.271 (0.054-1.372)  0.496 (0.100-2.464)  Ref |
| Ki67 (%) |  |  | **<0.001** | 0.877 | 1.037 (1.020-1.054) |
| TILs  5  15  25  40  50 | 250; 1-1403  196; 20-493  95; 1-988  36; 24-455  202 | 0.597 | 0.618 |  | 0.721 (0.088-5.930)  1.113 (0.128-9.671)  1.326 (0.166-10.609)  1.608 (0.193-13.415)  Ref |