**Supplemental table 2 Multivariate cox regression analysis for overall survival, stratified by disease stage after propensity score matching**

|  |  |  |  |
| --- | --- | --- | --- |
| **Covariate, level** | **Stage I-II** | **Stage III** | **Stage IV** |
| **Adjusted HR** | **P value** | **Adjusted HR** | **P value** | **Adjusted HR** | **P value** |
| **Histology** |  |  |  |  |  |  |
| squamous cell carcinoma | **1** |  | **1** |  | **1** |  |
| Small cell carcinoma | 1.68 (1.05, 2.68) | **0.031** | 2.11 (1.52, 2.94) | **<0.001** | 1.33 (1.03, 1.72) | **0.030** |
| **Age(years)** |  |  |  |  |  |  |
| 18-39 | **1** |  | **1** |  | **1** |  |
| 40-59 | 0.93 (0.55, 1.56) | 0.781 | 1.54 (1.08, 2.18) | **0.016** | (0.58, 1.07) | 0.127 |
| ≥60 | 2.28 (1.35, 3.87) | **0.002** | 2.19 (1.45, 3.31) | **<0.001** | 0.97 (0.70, 1.34) | 0.848 |
| **Marital status** |  |  |  |  |  |  |
| Married | **1** |  | **1** |  | **1** |  |
| Single | 0.87 (0.56, 1.35) | 0.534 | 0.65 (0.47, 0.89) | **0.008** | 1.04 (0.83, 1.31) | 0.701 |
| Unknown | 0.83 (0.32, 2.15) | 0.696 | 0.83 (0.42, 1.64) | 0.597 | 0.77 (0.41, 1.46) | 0.426 |
| **Race** |  |  |  |  |  |  |
| Black | **1** |  | **1** |  | **1** |  |
| White | 1.01 (0.59, 1.74) | 0.975 | 0.80 (0.54, 1.18) | 0.260 | 0.78 (0.59, 1.02) | 0.065 |
| Other | 0.71 (0.28, 1.81) | 0.467 | 0.58 (0.34, 0.99) | **0.045** | 0.65 (0.43, 0.99) | **0.044** |
| **Grade** |  |  |  |  |  |  |
| Grade I-II  | **1** |  | **1** |  | **1** |  |
| Grade III-IV | 2.13 (0.29, 15.81) | 0.460 | 0.88 (0.12, 6.49) | 0.902 | 1.72 (0.55, 5.41) | 0.353 |
| Unknown | 1.43 (0.19, 10.69) | 0.727 | 0.88 (0.12, 6.53) | 0.904 | 1.50 (0.47, 4.77) | 0.489 |
| **Surgery** |  |  |  |  |  |  |
| None/unknown | **1** |  | **1** |  | **1** |  |
| Performed | 0.68 (0.38, 1.20) | 0.179 | 0.64 (0.41, 1.00) | **0.048** | 0.75 (0.55, 1.03) | 0.078 |
| **Pelvic lymphadenectomy** |  |  |  |  |  |  |
| Not performed | **1** |  | **1** |  | **1** |  |
| Performed | 0.91 (0.50, 1.68) | 0.771 | 0.83 (0.53, 1.29) | 0.404 | 0.64 (0.45, 0.91) | **0.014** |
| Unknown | 1.02 (0.13, 7.67) | 0.987 | 1.42 (0.32, 6.24) | 0.641 | 1.79 (0.78, 4.11) | 0.171 |
| **Radiotherapy** |  |  |  |  |  |  |
| None/unknown | **1** |  | **1** |  | **1** |  |
| Performed | 1.01 (0.50, 2.05) | 0.980 | 0.45 (0.28, 0.71) | **0.001** | 0.67 (0.53, 0.84) | **0.001** |
| **Chemotherapy** |  |  |  |  |  |  |
| None/unknown | **1** |  | **1** |  | **1** |  |
| Performed | 2.31 (1.05, 5.07) | **0.037** | 0.78 (0.46, 1.34) | 0.375 | 0.39 (0.28, 0.53) | **<0.001** |

HR：hazard ratio； 95% CI：95% confidence interval