

**Supplementary Table 3. Summary of factors adjusted for multivariable Cox proportional hazards regression analysis.**

| Characteristics                  |                             | irAEs |        | Non-irAEs |        |
|----------------------------------|-----------------------------|-------|--------|-----------|--------|
| Total                            |                             | 118   |        | 97        |        |
| Age (%)                          | <75                         | 77    | (65.3) | 64        | (66.0) |
|                                  | ≥75                         | 41    | (34.7) | 33        | (34.0) |
| Sex (%)                          | Male                        | 91    | (77.1) | 71        | (73.2) |
|                                  | Female                      | 27    | (22.9) | 26        | (26.8) |
| ECOG PS (%)                      | 0–1                         | 105   | (89.0) | 73        | (75.3) |
|                                  | ≥2                          | 13    | (11.0) | 24        | (24.7) |
| Histology (%)                    | Non-squamous cell carcinoma | 70    | (59.3) | 71        | (73.2) |
|                                  | Squamous cell carcinoma     | 48    | (40.7) | 26        | (26.8) |
| PD-L1 TPS (%)                    | <1%                         | 23    | (19.5) | 23        | (23.7) |
|                                  | 1–49%                       | 22    | (18.6) | 24        | (24.7) |
|                                  | ≥50%                        | 41    | (34.7) | 31        | (32.0) |
|                                  | Unknown                     | 32    | (27.1) | 19        | (19.6) |
| Brain metastasis (%)             | No                          | 104   | (88.1) | 78        | (80.4) |
|                                  | Yes                         | 14    | (11.9) | 19        | (19.6) |
| Liver metastasis (%)             | No                          | 108   | (91.5) | 84        | (86.6) |
|                                  | Yes                         | 10    | (8.5)  | 13        | (13.4) |
| AEC (%)                          | <175/ $\mu$ L               | 47    | (39.8) | 57        | (58.8) |
|                                  | ≥175/ $\mu$ L               | 71    | (60.2) | 40        | (41.2) |
| NLR (%)                          | <5                          | 92    | (78.0) | 61        | (62.9) |
|                                  | ≥5                          | 26    | (22.0) | 36        | (37.1) |
| BZRAs (%)                        | No                          | 94    | (79.7) | 65        | (67.0) |
|                                  | Yes                         | 24    | (20.3) | 32        | (33.0) |
| Corticosteroids <sup>†</sup> (%) | <10 mg                      | 112   | (94.9) | 84        | (86.6) |
|                                  | ≥10 mg                      | 6     | (5.1)  | 13        | (13.4) |

Abbreviations: AEC, absolute eosinophil count; BZRAs, benzodiazepine receptor agonists; ECOG PS, Eastern Cooperative Oncology Group Performance Status; irAEs, immune-related adverse events; NLR, neutrophil-to-lymphocyte ratio; PD-L1, programmed death-1 ligand 1; TPS, tumor proportion score.

<sup>†</sup> Prednisone equivalent