

**Supplementary Table 1 Univariate and multivariate analyses of factors potentially related to esophageal squamous cell carcinoma patients' overall survival including the maximal voluntary ventilation and hemoglobin, albumin, lymphocytes and platelets score**

| Variable                 | Univariate analysis |         | Multivariate analysis |         |
|--------------------------|---------------------|---------|-----------------------|---------|
|                          | HR (95%CI)          | P value | HR (95%CI)            | P value |
| Gender                   |                     | 0.924   |                       |         |
| Female                   | 1                   |         |                       |         |
| Male                     | 0.991 (0.831-1.183) |         |                       |         |
| Age at diagnosis (years) |                     | < 0.001 |                       | 0.001   |
| < 60                     | 1                   |         | 1                     |         |
| ≥ 60                     | 1.613 (1.355-1.920) |         | 1.377 (1.150-1.650)   |         |
| Smoking history          |                     | 0.760   |                       |         |
| No                       | 1                   |         |                       |         |
| Yes                      | 0.974 (0.821-1.155) |         |                       |         |
| Drinking history         |                     | 0.293   |                       |         |
| No                       | 1                   |         |                       |         |
| Yes                      | 0.905 (0.752-1.090) |         |                       |         |
| Tumor length (cm)        |                     | < 0.001 |                       | 0.013   |
| < 4                      | 1                   |         | 1                     |         |
| ≥ 4                      | 1.691 (1.419-2.016) |         | 1.269 (1.051-1.532)   |         |
| Tumor location           |                     | 0.064   |                       |         |
| Upper                    | 1                   |         |                       |         |
| Middle                   | 0.782 (0.623-0.982) |         |                       |         |
| Lower                    | 0.733 (0.549-0.979) |         |                       |         |
| Differentiation          |                     | < 0.001 |                       | 0.309   |
| Well                     | 1                   |         | 1                     |         |
| Moderate                 | 1.308 (0.839-2.039) |         | 1.184 (0.756-1.856)   |         |
| Poor                     | 1.829 (1.169-2.862) |         | 1.330 (0.838-2.111)   |         |

|                       |                       |         |                     |
|-----------------------|-----------------------|---------|---------------------|
| Invasion depth        |                       | < 0.001 | 0.001               |
| pT1                   | 1                     |         | 1                   |
| pT2                   | 2.100 (1.491-2.958)   |         | 1.664 (1.168-2.371) |
| pT3                   | 2.769 (2.007-3.819)   |         | 1.925 (1.370-2.706) |
| Lymph node metastasis |                       | < 0.001 | < 0.001             |
| pN0                   | 1                     |         | 1                   |
| pN1                   | 1.803 (1.463-2.222)   |         | 1.693 (1.361-2.107) |
| pN2                   | 2.809 (2.224-3.549)   |         | 2.275 (1.777-2.914) |
| pN3                   | 3.857 (2.571-5.787)   |         | 2.921 (1.906-4.478) |
| Surgical approach     |                       | 0.130   |                     |
| Left                  | 1                     |         |                     |
| Right                 | 1.250 (0.936-1.669)   |         |                     |
| Treatment type        |                       | 0.512   |                     |
| Surgery               | 1                     |         |                     |
| Surgery               | + 1.072 (0.871-1.319) |         |                     |
| adjuvant              |                       |         |                     |
| RT/CT                 |                       |         |                     |
| coMVV-HALP score      |                       | < 0.001 | < 0.001             |
| 2                     | 1                     |         | 1                   |
| 1                     | 1.583 (1.285-1.949)   |         | 1.524 (1.232-1.885) |
| 0                     | 2.166 (1.716-2.734)   |         | 2.235 (1.757-2.844) |
| Overall complications |                       | < 0.001 | < 0.001             |
| No                    | 1                     |         | 1                   |
| Yes                   | 1.456 (1.179-1.799)   |         | 1.515 (1.218-1.885) |

HR: Hazard ratio; CI: Confidence interval; MVV: Maximal voluntary ventilation; HALP: Hemoglobin, albumin, lymphocytes and platelets; RT: Radiotherapy; CT: Chemotherapy; CoMVV-HALP: MVV and HALP.