

**Title of the article:** Establishment of a risk stratification model based on the combination of post-treatment serum squamous cell carcinoma antigen levels and FIGO stage of cervical cancer for treatment and surveillance decision-making

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**Table S1** Univariate and multivariate analyses of the prognostic factors for overall survival (n = 664).

| Factors                                                             | Univariate analysis |         | Multivariate analysis |         |
|---------------------------------------------------------------------|---------------------|---------|-----------------------|---------|
|                                                                     | HR (95% CI)         | P value | HR (95% CI)           | P value |
| <b>Age</b>                                                          | 1.006 (0.991–1.022) | 0.42    | -                     | -       |
| <b>FIGO Overall stage</b> (II, III, IVAB)                           | 3.656 (2.805–4.765) | <0.0001 | 2.582 (1.947–3.426)   | <0.0001 |
| <b>Regional lymph node metastasis</b> (Yes, No)                     | 2.162 (1.577–2.965) | <0.0001 | 1.237(0.872–1.754)    | 0.2336  |
| <b>Tumor size</b> (<4.05cm, >4.05cm)                                | 2.122 (1.485–3.033) | <0.0001 | 1.336(0.918–1.944)    | 0.131   |
| <b>Pre-treatment SCC-Ag</b><br>(<19.25ng/mL, >19.25ng/mL)           | 2.294 (1.716–3.066) | <0.0001 | 1.273(0.928–1.748)    | 0.135   |
| <b>Post-treatment SCC-Ag</b><br>(<1.35 ng/mL, >1.35 ng/mL)          | 5.185(3.865–6.957)  | <0.0001 | 4.000(2.911–5.496)    | <0.0001 |
| <b>Treatment modality</b><br>(RT, RT+NACT/ACT, CCRT, CCRT+NACT/ACT) | 1.013(0.8967–1.143) | 0.841   | -                     | -       |

Abbreviations: CI: confidence interval, FIGO: International Federation of Gynecology and Obstetrics, SCC-Ag: squamous cell carcinoma antigen, RT: radiotherapy, NACT: neoadjuvant therapy, ACT: adjuvant therapy, CCRT: concurrent chemoradiotherapy

**Table S2** Overall survival and progression-free survival of the prognostic groups stratified based on FIGO stage, post-treatment SCC-Ag, and RPA risk groups

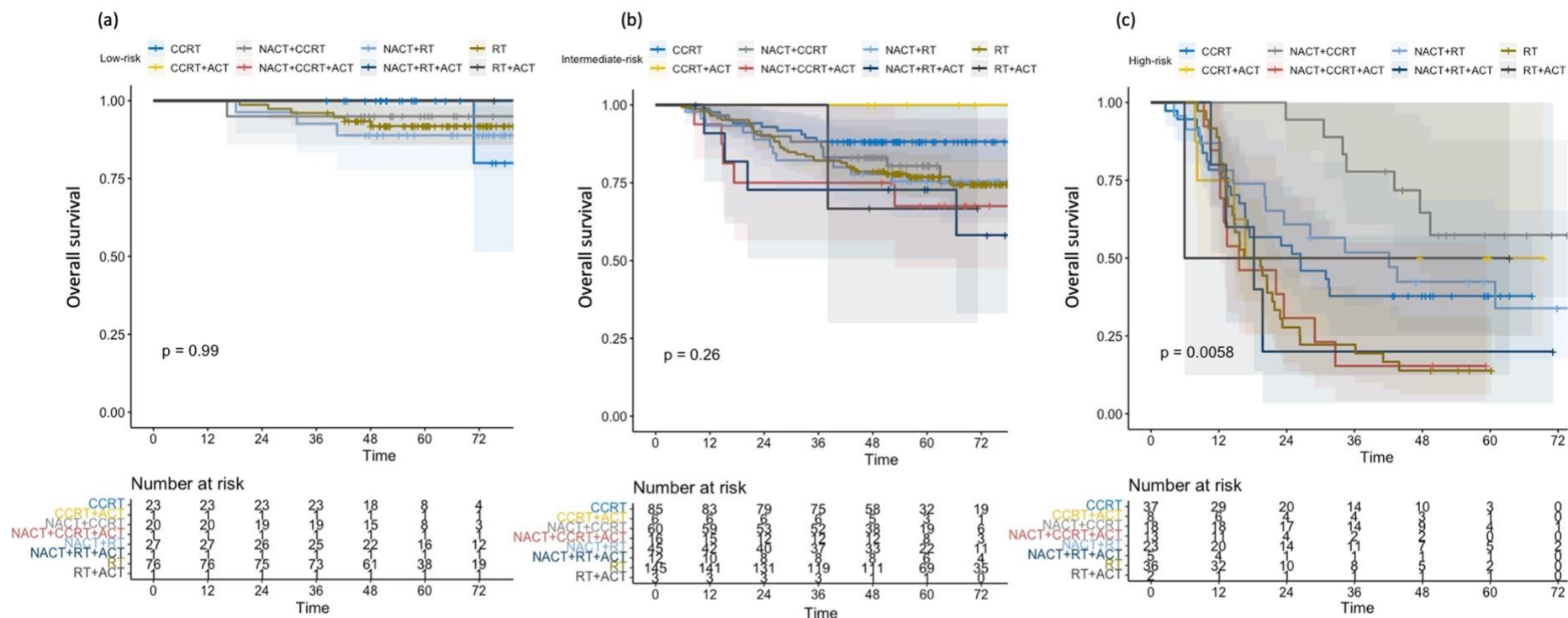
| prognostic groups            | Patient cohort(n = 664) |                        |                          |         |                        |                         |         |
|------------------------------|-------------------------|------------------------|--------------------------|---------|------------------------|-------------------------|---------|
|                              | no. (%)                 | 5-year OS (95%CI)      | HR (95%CI)               | P value | 5-year PFS (95%CI)     | HR (95%CI)              | P value |
| <b>FIGO Overall stage</b>    |                         |                        |                          |         |                        |                         |         |
| stage II                     | 177<br>(26.7)           | 88.5%<br>(83.2%-93.8%) | Reference                |         | 83.4%<br>(77.7%-89.1%) |                         |         |
| stage III                    | 424<br>(63.9)           | 69.5%<br>(64.8%-74.2%) | 3.125<br>(1.904–5.128)   | <0.0001 | 69.2%<br>(64.5%-73.9%) | 2.085<br>(1.384–3.142)  | 0.0004  |
| stage IV                     | 63<br>( 9.5)            | 22.4%<br>(9.5%-35.3%)  | 12.393<br>(7.168–21.426) | <0.0001 | 34.1%<br>(20.8%-47.4%) | 6.229<br>(3.799–10.211) | <0.0001 |
| <b>Post-treatment SCC-Ag</b> |                         |                        |                          |         |                        |                         |         |
| <1.35ng/mL                   | 528<br>(79.5)           | 78.7%<br>(74.8%-82.6%) | Reference                |         | 74.2%<br>(70.3%-78.1%) | Reference               |         |
| >1.35ng/mL                   | 136<br>(20.5)           | 37.7%<br>(29.5%-45.9%) | 5.185<br>(3.865–6.957)   | <0.0001 | 53.4%<br>(44.4%-62.4%) | 2.575<br>(1.884–3.519)  | <0.0001 |
| <b>RPA risk group</b>        |                         |                        |                          |         |                        |                         |         |
| low risk                     | 150<br>(22.6)           | 91.3%<br>(86.0%-96.6%) | Reference                |         | 84.0%<br>(77.9%-90.1%) | Reference               |         |
| intermediate risk            | 372<br>(56.0)           | 76.7%<br>(71.8%-81.6%) | 3.107<br>(1.652–5.841)   | 0.0004  | 72.7%<br>(67.8%-77.6%) | 1.875<br>(1.191–2.952)  | 0.0067  |
| high risk                    | 142<br>(21.4)           | 29.5%<br>(20.3%-38.7%) | 16.064<br>(8.585–30.057) | <0.0001 | 46.4%<br>(37.2%-55.6%) | 5.282<br>(3.281–8.503)  | <0.0001 |

Abbreviations: FIGO: International Federation of Gynecology and Obstetrics, SCC-Ag: squamous cell carcinoma antigen, HR: Hazard Ratio, CI: confidence interval

Table S3: Proportion of patients receiving different treatment modalities in the RPA groups.

| <b>Treatment modality</b>  | <b>Low-risk group</b> | <b>Intermediate-risk group</b> | <b>High-risk group</b> |
|----------------------------|-----------------------|--------------------------------|------------------------|
| <b>No. of patients (%)</b> | <b>(n = 150)</b>      | <b>(n = 372)</b>               | <b>(n = 142)</b>       |
| <b>RT</b>                  | <b>76(50.7)</b>       | <b>145(39.0)</b>               | <b>36(25.4)</b>        |
| <b>RT+NACT/ACT</b>         | <b>29(19.3)</b>       | <b>60(16.1)</b>                | <b>30(21.1)</b>        |
| NACT+RT                    | 27(18.0)              | 45(12.1)                       | 23(16.2)               |
| NACT+RT+ACT                | 1(0.7)                | 12(3.2)                        | 5(3.5)                 |
| RT+ACT                     | 1(0.7)                | 3(0.8)                         | 2(1.4)                 |
| <b>CCRT</b>                | <b>23(15.3)</b>       | <b>85(22.8)</b>                | <b>37(26.1)</b>        |
| <b>CCRT+NACT/ACT</b>       | <b>22(14.7)</b>       | <b>82(22.0)</b>                | <b>39(27.5)</b>        |
| NACT+CCRT                  | 20(13.3)              | 60(16.1)                       | 18(12.7)               |
| NACT+CCRT+ACT              | 1(0.7)                | 16(4.3)                        | 13(9.2)                |
| CCRT+ACT                   | 1(0.7)                | 6(1.6)                         | 8(5.6)                 |

Abbreviations: RPA: recursive partitioning analysis, RT: radiotherapy, NACT: neoadjuvant therapy, ACT: adjuvant therapy, CCRT: concurrent chemoradiotherapy



**Figure S1:** The Kaplan-Meier curves of all treatment modalities in RPA low-risk (a), intermediate-risk (b), and high-risk (c) group.

**Abbreviations:** RPA: recursive partitioning analysis, RT: Radiotherapy, NACT: Neoadjuvant therapy, ACT: adjuvant therapy, CCRT: Concurrent chemoradiotherapy