

## **Supplemental Tables**

**eTable1.** Inverse probability of treatment weighting-adjusted multivariate Cox regression analysis of secondary endpoints.

**eTable2.** Inverse probability of treatment weighting-adjusted univariate Cox regression analysis of overall survival.

**eTable3.** Baseline characteristics of the short and long duration groups before and after weighting in patients receiving induction chemotherapy.

**eTable4.** Multivariate Cox regression analysis of OS before and after weighting in patients receiving induction chemotherapy.

**eTable5.** Baseline characteristics of the short and long duration groups before and after weighting in patients not receiving induction chemotherapy.

**eTable6.** Multivariate Cox regression analysis of OS before and after weighting in patients not receiving induction chemotherapy.

## **Supplemental Figures**

**eFigure1.** Restricted cubic spline modeling of the relationship between adjuvant chemotherapy duration and mortality risk.

**eFigure2.** Kaplan-Meier curves and the inverse probability of treatment weighting-adjusted Kaplan-Meier curves of overall survival for patients receiving induction chemotherapy (A, B) and patients not receiving induction chemotherapy (C, D).

## Supplemental Tables

**eTable1. Inverse probability of treatment weighting-adjusted multivariate Cox regression analysis of secondary endpoints.**

| Characteristic                                   | HR   | 95%CI      | p value |
|--------------------------------------------------|------|------------|---------|
| <b>PFS</b>                                       |      |            |         |
| Sex (Male vs Female)                             | 1.41 | 0.83-2.39  | .21     |
| Age ( $\geq 45$ vs $< 45$ )                      | 1.06 | 0.63-1.77  | .83     |
| Family history of NPC (Yes vs None)              | 1.20 | 0.56-2.57  | .64     |
| T category <sup>a</sup> (T3-4 vs T1-2)           | 1.33 | 0.39-4.56  | .65     |
| N category <sup>a</sup> (N2-3 vs N0-1)           | 1.64 | 0.93-2.90  | .09     |
| Overall stage <sup>a</sup> (IVa vs III)          | 1.27 | 0.75-2.14  | .37     |
| Schemes (IC+CCRT+AC vs CCRT+AC)                  | 1.28 | 0.76-2.16  | .36     |
| Pretreatment EBV DNA ( $> 4000$ vs $\leq 4000$ ) | 1.04 | 0.59-1.84  | .89     |
| Duration Group (Long vs Short duration)          | 0.51 | 0.32-0.83  | .006    |
| <b>LRRFS</b>                                     |      |            |         |
| Sex (Male vs Female)                             | 0.98 | 0.52-1.86  | .96     |
| Age ( $\geq 45$ vs $< 45$ )                      | 0.90 | 0.46-1.75  | .75     |
| Family history of NPC (Yes vs None)              | 1.14 | 0.46-2.84  | .77     |
| T category <sup>a</sup> (T3-4 vs T1-2)           | 0.78 | 0.19-3.15  | .73     |
| N category <sup>a</sup> (N2-3 vs N0-1)           | 1.87 | 0.95-3.71  | .07     |
| Overall stage <sup>a</sup> (IVa vs III)          | 1.14 | 0.63-2.09  | .66     |
| Schemes (IC+CCRT+AC vs CCRT+AC)                  | 1.14 | 0.58-2.23  | .71     |
| Pretreatment EBV DNA ( $> 4000$ vs $\leq 4000$ ) | 0.96 | 0.47-2.00  | .92     |
| Duration Group (Long vs Short duration)          | 0.47 | 0.26-0.86  | .01     |
| <b>DMFS</b>                                      |      |            |         |
| Sex (Male vs Female)                             | 1.43 | 0.79-2.59  | .24     |
| Age ( $\geq 45$ vs $< 45$ )                      | 1.39 | 0.82-2.38  | .22     |
| Family history of NPC (Yes vs None)              | 1.49 | 0.60-3.68  | .39     |
| T category <sup>a</sup> (T3-4 vs T1-2)           | 3.01 | 0.84-10.77 | .09     |
| N category <sup>a</sup> (N2-3 vs N0-1)           | 1.73 | 0.89-3.38  | .11     |
| Overall stage <sup>a</sup> (IVa vs III)          | 1.81 | 0.95-3.46  | .07     |
| Schemes (IC+CCRT+AC vs CCRT+AC)                  | 1.33 | 0.73-2.45  | .36     |
| Pretreatment EBV DNA ( $> 4000$ vs $\leq 4000$ ) | 1.74 | 0.96-3.14  | .07     |
| Duration Group (Long vs Short duration)          | 0.41 | 0.23-0.73  | .002    |

<sup>a</sup>According to the eighth edition of UICC/AJCC staging system.

A Cox proportional hazards regression model was used to perform multivariate analysis. HRs and their 95% CIs were calculated for Sex (Male vs. Female); Age in years ( $\geq 45$  vs.  $< 45$ ); Family history of NPC (Yes vs. No); T category (3–4 vs. 1–2); N category (2–3 vs. 0–1); Overall stage (IVa vs. III); Schemes (IC+CCRT+AC vs. CCRT+AC); Pretreatment EBV DNA (copies/mL) ( $> 4000$  vs.  $\leq 4000$ ); Duration group (Long duration vs. Short duration)

*Abbreviations:* HR = hazard ratio; CI = confidence interval; NPC = nasopharyngeal carcinoma; CCRT = concurrent chemoradiotherapy; AC = adjuvant chemotherapy; IC = induction chemotherapy; EBV = Epstein–Barr virus.

**eTable2. Inverse probability of treatment weighting-adjusted univariate Cox regression analysis of Overall survival.**

| Characteristic                                   | HR   | 95%CI     | p value  |
|--------------------------------------------------|------|-----------|----------|
| Sex (Male vs Female)                             | 0.91 | 0.40-2.11 | .83      |
| Age ( $\geq 45$ vs $< 45$ )                      | 1.03 | 0.46-2.31 | .94      |
| Family history of NPC (Yes vs None)              | 1.38 | 0.32-5.88 | .66      |
| T category <sup>a</sup> (T3-4 vs T1-2)           | 1.58 | 0.38-6.57 | .53      |
| N category <sup>a</sup> (N2-3 vs N0-1)           | 2.57 | 0.98-6.74 | .05      |
| Overall stage <sup>a</sup> (IVa vs III)          | 3.24 | 1.32-7.96 | .01      |
| Schemes (IC+CCRT+AC vs CCRT+AC)                  | 2.08 | 0.91-4.73 | .08      |
| Pretreatment EBV DNA ( $> 4000$ vs $\leq 4000$ ) | 2.57 | 1.10-5.98 | .03      |
| Duration Group (Long vs Short duration)          | 0.23 | 0.10-0.55 | $< .001$ |

<sup>a</sup>According to the eighth edition of UICC/AJCC staging system.

A Cox proportional hazards regression model was used to perform multivariate analysis. HRs and their 95% CIs were calculated for Sex (Male vs. Female); Age in years ( $\geq 45$  vs.  $< 45$ ); Family history of NPC (Yes vs. No); T category (3–4 vs. 1–2); N category (2–3 vs. 0–1); Overall stage (IVa vs. III); Schemes (IC+CCRT+AC vs. CCRT+AC); Pretreatment EBV DNA (copies/mL) ( $> 4000$  vs.  $\leq 4000$ ); Duration group (Long duration vs. Short duration)

*Abbreviations:* HR = hazard ratio; CI = confidence interval; NPC = nasopharyngeal carcinoma; CCRT = concurrent chemoradiotherapy; AC = adjuvant chemotherapy; IC = induction chemotherapy; EBV = Epstein–Barr virus.

**eTable3. Baseline characteristics of the short and long duration groups before and after weighting in patients receiving induction chemotherapy.**

| Characteristic        | Unweighted, N%         |                       |         | Weighted, N%   |               |         |
|-----------------------|------------------------|-----------------------|---------|----------------|---------------|---------|
|                       | Short duration<br>n=61 | Long duration<br>n=94 | p value | Short duration | Long duration | p value |
| Sex                   |                        |                       | .30     |                |               | .79     |
| Female                | 19(31)                 | 37(39)                |         | (34)           | (36)          |         |
| Male                  | 42(69)                 | 57(61)                |         | (66)           | (64)          |         |
| Age                   |                        |                       | .03     |                |               | .97     |
| <45 years             | 26(43)                 | 57(61)                |         | (55)           | (55)          |         |
| ≥45 years             | 35(57)                 | 37(39)                |         | (45)           | (45)          |         |
| Family history of NPC |                        |                       | .14     |                |               | .92     |
| No                    | 59(97)                 | 85(90)                |         | (93)           | (93)          |         |
| Yes                   | 2(3)                   | 9(10)                 |         | (7)            | (7)           |         |
| T category*           |                        |                       | .51     |                |               | .62     |
| T1-2                  | 4(7)                   | 9(10)                 |         | (6)            | (8)           |         |
| T3-4                  | 57(93)                 | 85(90)                |         | (94)           | (92)          |         |
| N category*           |                        |                       | .31     |                |               | .98     |
| N0-1                  | 16(26)                 | 32(34)                |         | (32)           | (32)          |         |
| N2-3                  | 45(74)                 | 62(66)                |         | (68)           | (68)          |         |
| Overall stage*        |                        |                       | .049    |                |               | .94     |
| III                   | 21(34)                 | 19(20)                |         | (24)           | (23)          |         |
| IVa                   | 40(66)                 | 75(80)                |         | (76)           | (77)          |         |
| Pretreatment EBV DNA  |                        |                       | .78     |                |               | .99     |
| ≤4000 copies/mL       | 33(54)                 | 53(56)                |         | (55)           | (55)          |         |
| >4000 copies/mL       | 28(46)                 | 41(44)                |         | (45)           | (45)          |         |

\*According to the eighth edition of UICC/AJCC staging system.

The chi-squared test was used to calculate p value. All variables were transformed into categorical variables. Abbreviations: NPC = nasopharyngeal carcinoma; EBV = Epstein–Barr virus.

**eTable4. Multivariate Cox regression analysis of OS before and after weighting in patients receiving induction chemotherapy.**

| Characteristic                   | Unweighted        |           | Weighted          |         |
|----------------------------------|-------------------|-----------|-------------------|---------|
|                                  | HR (95%CI)        | p value   | HR (95%CI)        | p value |
| Sex                              | 0.86 (0.32-2.31)  | .76       | 0.87 (0.30-2.51)  | .80     |
| Female                           |                   | Reference |                   |         |
| Male                             |                   |           |                   |         |
| Age (years)                      | 2.06 (0.74-5.76)  | .17       | 1.83 (0.66-5.04)  | .24     |
| <45                              |                   | Reference |                   |         |
| ≥45                              |                   |           |                   |         |
| Family history of NPC            | 2.84 (0.31-26.33) | .36       | 4.78 (1.64-13.94) | .004    |
| None                             |                   | Reference |                   |         |
| Yes                              |                   |           |                   |         |
| T category*                      | 2.38 (0.29-19.31) | .42       | 2.73 (0.31-23.65) | .36     |
| T1-2                             |                   | Reference |                   |         |
| T3-4                             |                   |           |                   |         |
| N category*                      | 6.10 (0.77-48.24) | .09       | 6.90 (0.88-54.16) | .07     |
| N0-1                             |                   | Reference |                   |         |
| N2-3                             |                   |           |                   |         |
| Overall stage*                   | 2.07 (0.55-7.77)  | .28       | 2.71 (0.77-9.54)  | .12     |
| III                              |                   | Reference |                   |         |
| IVa                              |                   |           |                   |         |
| Pretreatment EBV DNA (copies/mL) | 2.27 (0.74-7.00)  | .15       | 1.78 (0.63-4.96)  | .27     |
| ≤4000                            |                   | Reference |                   |         |
| >4000                            |                   |           |                   |         |
| Duration group                   | 0.29 (0.10-0.81)  | .02       | 0.27 (0.11-0.67)  | .004    |
| Short duration                   |                   | Reference |                   |         |
| Long duration                    |                   |           |                   |         |

\*According to the eighth edition of UICC/AJCC staging system.

A Cox proportional hazards regression model was used to perform multivariate analysis. HRs and their 95% CIs were calculated for Sex (Male vs. Female); Age in years (≥45 vs. <45); Family history of NPC (Yes vs. No); T category (3–4 vs. 1–2); N category (2–3 vs. 0–1); Overall stage (IVa vs. III); Pretreatment EBV DNA (copies/mL) (>4000 vs. ≤4000); Duration group (Long duration vs. Short duration)

*Abbreviations:* HR = hazard ratio; CI = confidence interval; NPC = nasopharyngeal carcinoma; EBV = Epstein–Barr virus.

**eTable5. Baseline characteristics of the short and long duration groups before and after weighting in patients not receiving induction chemotherapy.**

| Characteristic        | Unweighted, N%         |                       |         | Weighted, N%   |               |         |
|-----------------------|------------------------|-----------------------|---------|----------------|---------------|---------|
|                       | Short duration<br>n=67 | Long duration<br>n=34 | p value | Short duration | Long duration | p value |
| Sex                   |                        |                       | .27     |                |               | .98     |
| Female                | 23(34)                 | 8(24)                 |         | (30)           | (30)          |         |
| Male                  | 44(66)                 | 26(76)                |         | (70)           | (70)          |         |
| Age                   |                        |                       | .44     |                |               | .88     |
| <45 years             | 27(40)                 | 11(32)                |         | (37)           | (35)          |         |
| ≥45 years             | 40(60)                 | 23(68)                |         | (63)           | (65)          |         |
| Family history of NPC |                        |                       | .39     |                |               | .98     |
| No                    | 61(91)                 | 29(85)                |         | (90)           | (90)          |         |
| Yes                   | 6(9)                   | 5(15)                 |         | (10)           | (10)          |         |
| T category*           |                        |                       | .008    |                |               | .96     |
| T1-2                  | 1(1)                   | 5(15)                 |         | (6)            | (6)           |         |
| T3-4                  | 66(99)                 | 29(85)                |         | (94)           | (94)          |         |
| N category*           |                        |                       | .54     |                |               | .99     |
| N0-1                  | 30(45)                 | 13(38)                |         | (43)           | (43)          |         |
| N2-3                  | 37(55)                 | 21(62)                |         | (57)           | (57)          |         |
| Overall stage*        |                        |                       | .53     |                |               | .99     |
| III                   | 39(58)                 | 22(65)                |         | (57)           | (57)          |         |
| IVa                   | 28(42)                 | 12(35)                |         | (43)           | (43)          |         |
| Pretreatment EBV DNA  |                        |                       | .62     |                |               | .77     |
| ≤4000 copies/mL       | 46(69)                 | 25(74)                |         | (69)           | (72)          |         |
| >4000 copies/mL       | 21(31)                 | 9(26)                 |         | (31)           | (28)          |         |

\*According to the eighth edition of UICC/AJCC staging system.

The chi-squared test was used to calculate p value. All variables were transformed into categorical variables. Abbreviations: NPC = nasopharyngeal carcinoma; EBV = Epstein–Barr virus.

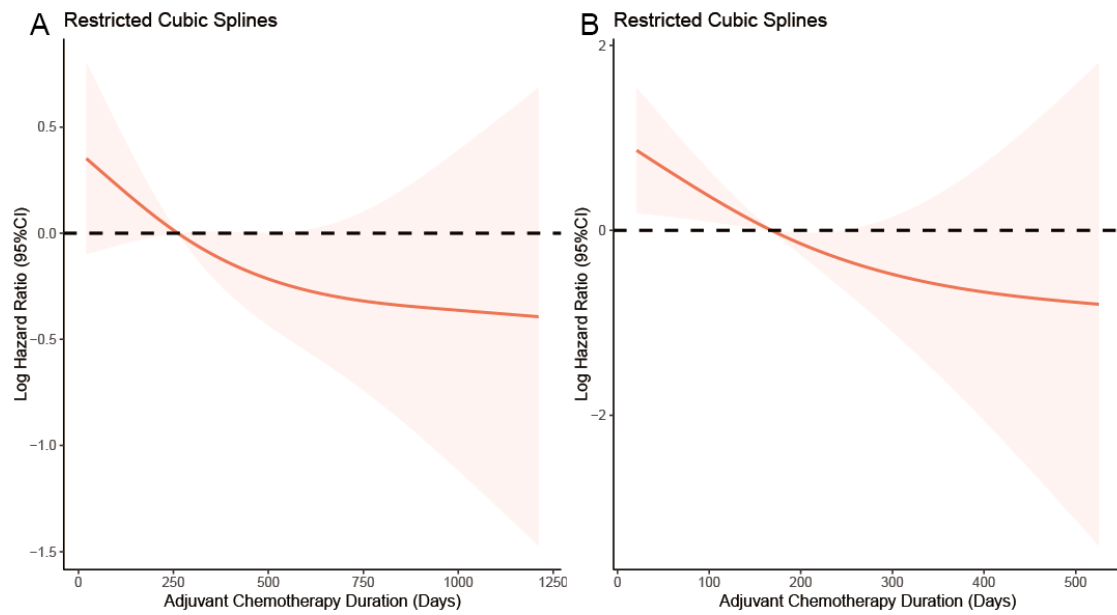
**eTable6. Multivariate Cox regression analysis of OS before and after weighting in patients not receiving induction chemotherapy.**

| Characteristic                   | Unweighted        |           | Weighted          |         |
|----------------------------------|-------------------|-----------|-------------------|---------|
|                                  | HR (95%CI)        | p value   | HR (95%CI)        | p value |
| Sex                              | 2.18 (0.44-10.85) | .34       | 2.19 (0.43-11.06) | .34     |
| Female                           |                   | Reference |                   |         |
| Male                             |                   |           |                   |         |
| Age (years)                      | 1.04 (0.27-4.06)  | .95       | 1.12 (0.29-4.27)  | .87     |
| <45                              |                   | Reference |                   |         |
| ≥45                              |                   |           |                   |         |
| Family history of NPC            | 0.99 (0.12-8.13)  | .99       | 0.99 (0.16-5.96)  | .99     |
| None                             |                   | Reference |                   |         |
| Yes                              |                   |           |                   |         |
| T category*                      | 0.56 (0.05-6.75)  | .65       | 1.91 (0.09-39.15) | .67     |
| T1-2                             |                   | Reference |                   |         |
| T3-4                             |                   |           |                   |         |
| N category*                      | 0.61 (0.15-2.57)  | .51       | 0.67 (0.21-2.16)  | .50     |
| N0-1                             |                   | Reference |                   |         |
| N2-3                             |                   |           |                   |         |
| Overall stage*                   | 2.13 (0.51-8.88)  | .30       | 1.77 (0.54-5.81)  | .35     |
| III                              |                   | Reference |                   |         |
| IVa                              |                   |           |                   |         |
| Pretreatment EBV DNA (copies/mL) | 1.95 (0.50-7.52)  | .33       | 1.97 (0.58-6.68)  | .28     |
| ≤4000                            |                   | Reference |                   |         |
| >4000                            |                   |           |                   |         |
| Duration group                   | 0.15 (0.02-1.29)  | .08       | 0.07 (0.009-0.59) | .01     |
| Short duration                   |                   | Reference |                   |         |
| Long duration                    |                   |           |                   |         |

\*According to the eighth edition of UICC/AJCC staging system.

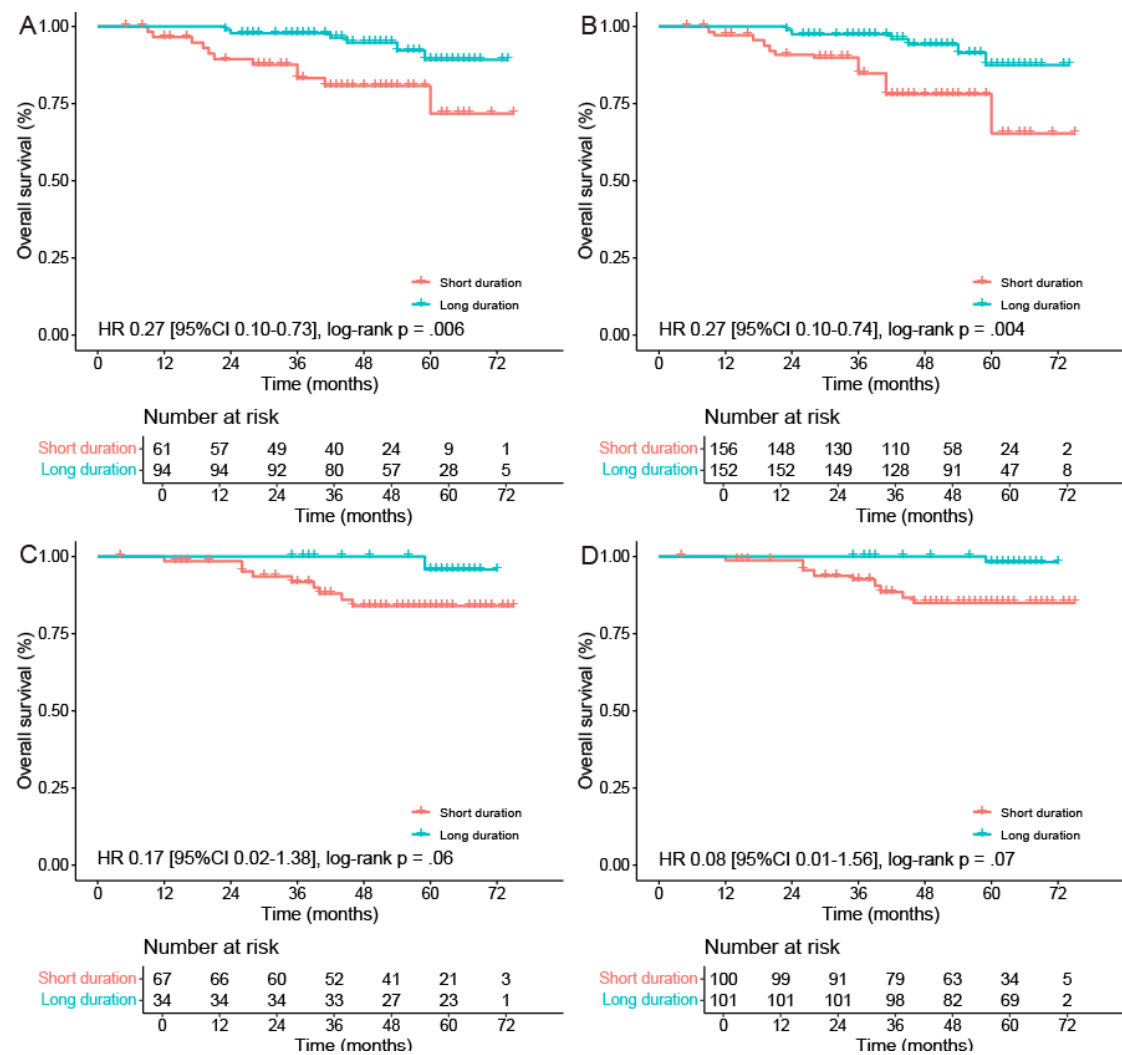
A Cox proportional hazards regression model was used to perform multivariate analysis. HRs and their 95% CIs were calculated for Sex (Male vs. Female); Age in years (≥45 vs. <45); Family history of NPC (Yes vs. No); T category (3–4 vs. 1–2); N category (2–3 vs. 0–1); Overall stage (IVa vs. III); Pretreatment EBV DNA (copies/mL) (>4000 vs. ≤4000); Duration group (Long duration vs. Short duration)

*Abbreviations:* HR = hazard ratio; CI = confidence interval; NPC = nasopharyngeal carcinoma; EBV = Epstein–Barr virus.



**eFigure1. Restricted cubic spline modeling of the relationship between adjuvant chemotherapy duration and mortality risk.**

For patients receiving induction chemotherapy (A) and not receiving induction chemotherapy (B), the hazard ratios (HR) derived from the multivariate Cox model, and the shaded areas represent the 95% confidence intervals (CIs) of the adjusted HRs.



**eFigure2. Kaplan-Meier curves and the inverse probability of treatment weighting-adjusted Kaplan-Meier curves of overall survival for patients receiving induction chemotherapy (A, B) and patients not receiving induction chemotherapy (C, D).**

Univariate Cox proportional hazards model was used to calculate HRs and 95% CIs.