Comparison between the 7th and the proposed 8th editions of the UICC staging system for nasopharyngeal carcinoma patients without cervical lymph node metastasis: A retrospective analysis

C. Hu
Department of Radiation Oncology, Fudan University Shanghai Cancer Center, Shanghai, China

Background: To evaluate the prognostic value of the proposed 8th Edition of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC) staging system for nasopharyngeal carcinoma (NPC) patients without cervical lymph node metastasis in comparison with the AJCC/ UICC 7th edition.

Methods: This is a retrospective study of 382 newly diagnosed non-metastatic NPC patients without cervical lymph node metastasis who were treated with intensity-modulated radiotherapy (IMRT). All received elective neck irradiation to levels I, II, III, VA. Univariate and multivariate analyses were applied to evaluate the prognostic values between adjacent stage categories of the AJCC/ UICC 7th edition and the proposed 8th edition, including overall survival (OS), local relapse-free survival (LRFS), regional relapse-free survival (RRFS), distant metastasis-free survival (DMFS), and disease-free survival (DFS). The Akaike information criterion (AIC) and Harrell’s concordance index (c-index) were applied to compare the two prognostic systems with different numbers of stages.

Results: The median follow-up time was 61.1 months, with a range from 1 month to 91 months. The 5-year OS, LRFS, RRFS, DMFS and DFS were 86.9%, 96.7%, 99.1%, 93.3% and 82.6%, respectively. For LRFS and DMFS, the proposed eighth editions had superior prognostic value to the AJCC/ UICC 7th edition (P = 0.032 vs. P = 0.086 and P = 0.013 vs. P = 0.112). The 5-year OS and DFS were found to be significant both by the seventh and the proposed 8th editions. The difference between T1 and T3, T1 and T4, T2 and T3 and T2 and T4 by the proposed eighth edition were found to be significant (P = 0.042, P = 0.041, P = 0.000, and P = 0.000), however, there was no significant difference between T1 and T3, T2 and T3 by the seventh edition (P = 0.204, and P = 0.215). In addition, the difference between T1, T2, T3 with T4 were found to be significant in DFS (P = 0.000, P = 0.000, P = 0.037) and there was no significant difference between T1 and T3 (P = 0.162) by the seventh edition and there was significantly different between T2 and T4 (P = 0.026) by the proposed 8th editions. Multivariate analysis demonstrated that age, T stage of the proposed 8th editions and chemotherapy were independent prognostic factors for OS, LRFS, RRFS and DFS. The AIC value was smaller for the 8th edition compared to the 7th edition staging system. The C-index value was larger for the 8th edition compared to the 7th edition staging system.

Conclusions: IMRT with elective neck irradiation provides excellent local-regional control for NPC patients without cervical lymph node metastasis. The proposed eighth editions had superior prognostic value to the AJCC/ UICC 7th edition for LRFS and DMFS and lead a better distinction between adjacent T stages of nasopharyngeal carcinoma patients for OS and DFS. Overall, the proposed 8th UICC T classification seems to be superior to the 7th UICC T classification for nasopharyngeal carcinoma patients without cervical lymph node metastasis.

Legal entity responsible for the study: Fudan University Shanghai Cancer Center.

Funding: Has not received any funding.

Disclosure: The author has declared no conflicts of interest.