

RESEARCH ARTICLE

# The Impact of Reduced-Volume, Intensity-Modulated Radiation Therapy on Disease Control in Nasopharyngeal Carcinoma

Yu-Wei Lin<sup>1,2,3\*</sup>, Chia-Chun Chen<sup>4</sup>, Li-Ching Lin<sup>1,5</sup>, Steve P. Lee<sup>6,7\*</sup>

**1** Department of Radiation Oncology, Chi Mei Medical Center, Tainan, Taiwan, **2** Institute of Biomedical Sciences, National Sun Yat-sen University, Kaohsiung, Taiwan, **3** The School of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan, **4** Department of Radiation Oncology, Liouying campus, Chi Mei Medical Center, Tainan, Taiwan, **5** School of Medicine, Taipei Medical University, Taipei, Taiwan, **6** Department of Radiation Oncology, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, United States of America, **7** Department of Radiation Oncology, VA Greater Los Angeles Healthcare System, Los Angeles, CA, United States of America

\* [marklin1108@gmail.com](mailto:marklin1108@gmail.com) (YWL); [splee@mednet.ucla.edu](mailto:splee@mednet.ucla.edu) (SPL)



## Abstract

### Objective

To investigate the feasibility of using intensity-modulated radiotherapy (IMRT) with reduced, high-dose target volumes for nasopharyngeal carcinoma (NPC).

### Methods

The first 57 patients (admitted from October 2005 to May 2008) were treated with large-target-volume IMRT (LV-IMRT). For the LV-IMRT group, the CTV at 70 Gy (CTV70) was delineated as the gross target volume (GTV) plus 7mm, with or without the first-echelon lymph-node region. The next 56 patients (admitted from June 2008 to November 2011) were treated with reduced-target-volume IMRT (RV-IMRT). For the RV-IMRT group, the CTV70 was delineated as the GTV alone.

### Results

The 4-year local recurrence-free, regional recurrence-free, distant metastasis-free, progression-free, and overall survival rates were 77.2%, 80.1%, 83.2%, 61.2%, and 74.4% for the LV-IMRT group and 83.5%, 92.6%, 89.1%, 78.5, and 91.0% for the RV-IMRT group, respectively. Late toxicity scoring of xerostomia was lesser in the RV-IMRT group than the LV-IMRT group ( $P < 0.001$ ).

### Conclusions

The use of RV-IMRT for the treatment of NPC did not negatively affect survival rates but did reduce the late xerostomia events compared to LV-IMRT.

## OPEN ACCESS

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