

## Impact of Radiotherapy Combined With Chemotherapy on Long-term Outcomes of Patients With Recurrent Nasopharyngeal Carcinoma

**Open Access****Abstract**

Published 04/02/2023

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Li Y, Huang Z, Cai S, et al. (April 02, 2023) Impact of Radiotherapy Combined With Chemotherapy on Long-term Outcomes of Patients With Recurrent Nasopharyngeal Carcinoma. *Cureus* 15(4): a913

### Abstract

**Objectives:**

It remains controversial that the application of chemotherapy has an impact on recurrent nasopharyngeal carcinoma (rNPC) patients with salvage radiotherapy. Here, we aimed to evaluate treatment outcomes of rNPC patients and derive a prognostic model to assess the benefit of chemotherapy in patients with re-radiotherapy.

**Methods:**

Totally 340 rNPC patients treated with salvage intensity-modulated radiotherapy (IMRT) or chemoradiotherapy (CRT) from October 2006 to September 2019 were included in this study. Overall survival (OS) was the primary outcome. Kaplan-Meier method was employed to detect the prognostic difference with Log-rank tests. The Cox regression analysis was performed to explore the potential prognostic factors while the multivariate Cox analysis was used to identify candidate variables for the prognostic model of OS.

**Results:**

The 5-year actuarial rates of OS, progression-free survival, loco-regional progression-free survival, and distant metastases-free survival didn't show significant difference between the IMRT and CRT groups ( $p > 0.05$ ). Age at recurrence was found to be the only independent prognostic factor for OS (HR=2.076, 95% CI 1.490-2.894,  $p < 0.001$ ). Three factors (age at recurrence, rStage, and initial treatment) were identified for the prognostic model. We found that rNPC patients suffered poor OS in the high-risk group ( $p < 0.001$ ). In the low-risk group, CRT failed to induce survival benefits when compared to RT alone ( $p = 0.036$ ).

**Conclusion(s):**

Salvage RT combined with chemotherapy cannot improve survival outcomes for rNPC. More novel clinical trials should be explored to develop individualized strategies to improve survival and minimize toxicities.