

High Dose 3-Dimensional Re-irradiation for Locally Recurrent Nasopharynx Cancer

Seong Soo Shin, Yong Chan Ahn, Do Hoon Lim,
Won Park, Jung Eun Lee, Min Kyu Kang,
Young Je Park, Seung Jae Huh

*Department of Radiation Oncology, Samsung Medical Center, Sungkyunkwan University School of Medicine,
Seoul, Korea*

Purpose : To review the treatment results of high dose 3-dimensional re-irradiation for locally recurrent nasopharynx cancer.

Materials and Methods : Twenty-one patients with locally recurrent nasopharynx cancer after previous radical radiation therapy received high dose 3-dimensional re-irradiation at Samsung Medical Center from May 1995 to December 2000. Fifteen patients were with local recurrence only, five were with combined local and regional recurrence, and one was with combined local recurrence and distant metastasis. The median interval between the first radiation therapy and the current re-irradiation was 28 months. Fractionated stereotactic radiation therapy (XKnife-3) was used for 18 patients, while 3-dimensional conformal radiation therapy (Prowess) was employed to the last three patients. The median re-irradiation dose was 55Gy (45–70Gy), and the fractional doses were 2.5Gy (N=15) or 3.0Gy (N=6) depending on the tumor volume and location. The median tumor volume was 30cc (range 5.9–80cc).

Results : The median follow-up period was 36 (7–69) months. The median survival period, actuarial 4-year local control, overall survival, and disease free survival rates were 20 months, 70.5%, 39.3%, and 32.2% in all patients (N=21), and 24 months, 69.8%, 50%, and 42.5% in those treated with

curative intent (N=16). Until the current data analyses, seven patients (33%) are presently alive with no evidence of disease, with a median follow-up of 35 (16–48) months, and 11 patients died. The most common cause of death was out-field disease progression. Severe radiation related morbidity was observed in five patients (23.8%) : 2 brain stem necrosis ; 1 temporal lobe necrosis ; 1 uncontrolled nasal bleeding ; and 1 mucosal necrosis. These radiation morbidities occurred in 3 to 35 (median 7) months of re-irradiation, and three of them died at 3, 7, 11 months.

Conclusions : High dose re-irradiation using 3-D radiation therapy techniques for locally recurrent nasopharynx cancer can lead to long-term local control and survival. The survival results were better than the historical data by the conventional 2-dimensional radiation therapy techniques, especially in those with local recurrence only. Further investigations should aim at improving the therapeutic ratio as well as analyzing the factors influencing late complications in high dose re-irradiation with 3-D conformal radiation therapy for locally recurrent nasopharynx cancer.

KEY WORDS : 3-dimension · Re-irradiation · Recurrent nasopharynx cancer · High dose.