Proton Therapy against Sinonasal Undifferentiated Carcinoma

Koichiro Morimoto, MD,1,2; Masao Murakami, MD, PhD; Yusuke Demizu, MD, PhD; Daisuke Miyawaki, MD, PhD; Yasue Oda, MD; Yoshio Hishikawa, MD, PhD; Ken-ichi Nibu, MD, PhD

1Department of Otolaryngology-Head and Neck Surgery, Kobe University, Graduate School of Medicine, Kobe
2Department of Radiology, Hyogo Ion Beam Medical Center (HIBMC), Tatsuno, Hyogo, Japan

Objectives: The primary objectives of this study were to evaluate the efficacy and safety of proton therapy for sinonasal undifferentiated carcinoma (SNUC).

Study Design: Retrospective analysis.

Subjects and Methods: Between April 2005 and March 2009, 9 patients were treated with proton therapy at HIBMC. All patients had biopsy-proven SNUC. The median follow-up period was 29 months. Three patients died of disease and 6 were alive at the time of analysis. Seven patients (78%) developed recurrent diseases from 3 to 25 months (median, 9 months) after treatment. The 2-year overall survival rate was 78% and the mean survival time of all patients was 30 months (range, 0-57 months).

RESULTS

One patient received chemotherapy before visiting HIBMC and another 1 patient received adjacent chemotherapy at other facility before treating with proton therapy. Patient data are shown in Table 1.

All patients were followed up at least 12 months or death. Median follow-up period was 29 months ranging 9 to 57 months. Eight patients were newly diagnosed patients (median, 30 months). The patients consisted of 5 males and 4 females with a median age of 61 years (range, 31-73 years).

METHODS AND MATERIALS

Proton beam dose is reported in gray equivalent (GyE), which is the physical dose required to deliver the same biological effect as that of the reference beam for both protons and carbon ions. The GyE is obtained by multiplying the physical dose by the equivalent dose per Gray (Gy). The RBE of protons is known to be 1.1 at 640 MeV/n, which is the beam energy of our institution.

CONTACT

Koichiro Morimoto
Department of Otolaryngology-Head and Neck Surgery, Kobe University, Graduate School of Medicine, Kobe, Japan
Phone: +81-78-362-4021

REFERENCES


