Proton radiation for treatment of cancer of the oropharynx: early experience at Loma Linda University Medical Center using a concomitant boost technique.

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Abstract:

PURPOSE: To assess accelerated fractionation using photon and proton radiation to improve local control and reduce complications in treating locally advanced oropharyngeal cancer.

METHODS AND MATERIALS: Twenty-nine patients with localized Stage II-IV oropharyngeal cancer received accelerated photon and proton radiation, 75.9 GyE in 45 fractions/5.5 weeks, to the primary disease, involved lymph nodes, and potential areas of subclinical spread. Follow-up ranged from 2 to 96 months.

RESULTS: Five-year actuarial control for local disease was 88%, and for neck node disease, 96%; yielding a 84% locoregional control rate at 5 years. Four patients developed distant metastases. The 5-year actuarial locoregional control rate was 84%. The actuarial 2-year disease-free survival rate was 81%; at 5 years, it was 65%. All patients completed the prescribed treatment; though aggressive nutritional and anesthetic support was necessary. Late Grade 3 toxicity was seen in 3 patients.

CONCLUSIONS: Protons used as a concomitant boost with photons effectively delivered an accelerated time-dose schedule to the cancer with a more tolerable schedule to surrounding normal tissues. Preliminary results reveal increased locoregional control without increased toxicity. Future studies must evaluate the optimum time-dose schedule.