

## **Hypofractionated Radiotherapy In Early Stage Glottic Cancer**

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### **Purpose**

To evaluate the influence of fraction size 2.25 Gy on local control of T1 and T2, N0M0 early glottic carcinoma.

### **Patients and methods**

This prospective study included 30 patients of early-stage glottic carcinoma, T1N0M0 and T2N0M0 tumor according to the International Union Against Cancer Criteria 2002 / AJCC staging with ECOG performance status of  $\geq 1$  and were excluded if they had a history of other active untreatable cancer, history of previous irradiation and active collagen disease. Twenty four patients were males, age between 45-70 years and 6 patients were females, age between 33-52 years.

Squamous cell carcinoma histology was present in all the patients except one patient who had sarcomatoid histology.

Patients presenting with T1a and T1b combined were 18 in number and the other 12 were T2 stage. All patients were planned using opposing lateral fields with  $^{60}\text{Co}$  photons.

To facilitate treatment planning, CT of the neck was obtained for all patients. No

prophylactic neck lymph node irradiation was performed. Patients were treated with either a 5X5 cm field or a 6X6 cm field size. Tissue compensation was added to the treatment in the form of bolus and wedges were used to ensure uniform dose distribution and achieve target dose homogeneity. The daily dose was 2.25 Gy per fraction for a total dose of 63 Gy in 28 fractions.

Follow up was done after 6 weeks with local examination by clinical examination, video-laryngoscopy and CT neck.

## Results

Out of the twenty patients, all achieved Complete Response (CR) except for 4 patients (CR-87%, PR- 13%). Four patients achieved Partial Response (PR), out of which one out of these patients was T2 glottis with sarcomatoid histology and the other patient was T2 glottis with squamous cell carcinoma. Toxicity was graded by CTCAE version 3.06.

The most common acute toxicity was mucositis. Mucositis and dermatitis of grade 2 were present in 15 patients (75%) and 3 patients (15%) respectively. No grade 3 toxicity was observed.

## Conclusion

A daily fractionation of 2.25 Gy may be a safe, valuable and beneficial method to treat early glottic cancer as it shows good local control, shows the same level of adverse events as standard fractionation, shortens the period of treatment and reduces the burden on the patient and the treating institution.