Review

3D conformal hypofractionated radical radiotherapy in early glottic cancer

Ana Cristina Amado, Laurentiu Bujor, Isabel Monteiro Grillo

Abstract

Aim

The purpose of this study was to evaluate acute and late toxicity and the locoregional control in patients treated with hypofractionated radical radiotherapy 2.25 Gy/fraction/day for early glottic carcinoma.

Materials and methods

A retrospective analysis was performed of 27 patients, stage T1–T2 N0 glottic squamous cell carcinoma, that underwent radical RT from April 2008 to October 2011. The mean age was 64.6 years (range 36–81). Seventeen patients were staged T1a, 3 patients T1b and 7 patients T2. All patients were 3D planned and treated in a 6 MV LINAC, 2.25 Gy/fraction/5 days per week, to a total dose between 63 Gy and 67.5 Gy. Biological Effective Dose (BED (α/β = 10)) ranged from 77.18 Gy to 82.69 Gy and EQD2 from 64.31 Gy to 68.91 Gy. Patients were evaluated in periodic follow-up. Toxicity was evaluated according to RTOG Toxicities Scales.

Results

With a median follow-time of 24.7 months (range 3.6–44.2 months), no evidence of locoregional recurrence was observed. The treatment was well tolerated and no unscheduled interruptions in treatments for toxicity were documented, with the median overall treatment time of 41 days (range 38–48). Only grades 1 and 2 acute toxicity were observed and no evidence of severe late toxicity.

Conclusion

The authors believe that this moderately hypofractionated scheme can provide a good locoregional control for T1–T2 glottic carcinomas with no increase of toxicity. As the limitation of this work is the reduced number of patients and the lack of long term follow-up, the authors hope to update this retrospective study in the future in order to improve the power of the results.

Keywords

Hypofractionation; Larynx; Early glottic cancer; T1–T2