

Clinical and molecular prognostic factors in operable laryngeal cancer.

[Vlachtsis K](#), [Nikolaou A](#), [Markou K](#), [Fountzilias G](#), [Daniilidis I](#).

Source

Department of Otorhinolaryngology Head and Neck Surgery, AHEPA Hospital, Aristotle University of Thessaloniki, Greece. kostis@med.auth.gr

Abstract

Many factors affect the prognosis in operable laryngeal squamous cell carcinoma (LSCC). Many clinical factors have been implicated in tumor recurrence and poor survival of the patients. The aim of the present study is to investigate the demographic, clinical and histological characteristics as prognostic factors. Moreover, our aim is to analyze the role of modern molecular biomarkers in the prognosis of patients with LSCC. One hundred patients with operable laryngeal carcinoma underwent surgery as primary treatment between April 1999 and April 2002. Ninety-four of them were men and 6 women, with a median age of 62 years (39-77). All demographic data of the patients were recorded. Staging of the tumor revealed 20 cases with T2 cancer, 46 cases with T3 and 34 cases with T4, while N classification included 91 patients with N0 tumor, 3 with N1 and 6 with N2. Among the 100 cases, 47 were located in the glottis, 46 in the supraglottic region and 7 were transglottic. Histology grading revealed 35 cases of grade G1, 50 cases of G2 and 15 cases of G3. Postoperatively, all patients were followed regularly for the possibility of tumor relapse, with a median follow-up period of 40.2 months (4.8-58.4). During the operation, a tissue specimen was collected from the tumor. The specimens were used for RNA and DNA extraction. Isolated RNA was used to investigate the expression of wt-p53, bcl-2, VEGF and EGFR by the reverse transcriptase PCR method (RT-PCR) using specific primers, while genomic DNA was used for the detection of EBV and HPV (16/18 subtypes) by the consensus primer-mediated polymerase chain reaction method (PCR). All data such as tumor recurrence and survival were recorded. Statistical analysis was performed using the SPSS and STATA statistical packages in order to investigate the role of all clinical and molecular factors and their combinations as significant prognostic markers. The tumor recurrence rate was 31%, while the tumor associated death rate was 27% and total death rate 30%. Univariate analysis for overall survival showed significance for the T stage, TNM stage and site of the tumor. Univariate analysis for the time to progression showed significance for the T stage, N stage, TNM stage, site of the tumor and tumors simultaneously positive for EGFR and VEGF, while EGFR expression was borderline insignificant. Multivariate analysis revealed TNM stage as the only significant factor for overall survival, and TNM stage, site of the tumor and EGFR expression as significant factors for time to progression. The molecular biomarkers EGFR and VEGF have a prognostic significance in laryngeal cancer in addition to the established clinical prognostic factors such as the stage and site of the tumor. These markers, apart from their role in carcinogenesis, seem to play an important role in tumor relapse.