Oncogenes and tumor suppressor genes in squamous cell carcinoma of the tongue in young patients.

Abstract:
The occurrence of squamous cell carcinoma of the tongue (SCCT) of young patients increased. There are still controversies about patient prognosis. The underlying molecular mechanisms remain unclear. 276 patients (66-45 years) with SCCT were included. Clinical parameters and survival data were assessed. Oncogenes and tumor suppressors were analyzed via immunohistochemistry (p53, CXCR4, p16, EGFR) and qPCR (CDK4, CDKN2A, TP53, MDM2, AKT1, PIK3CA, NRAS, HRAS, KRAS, HGF, MET, EGF, ATM, BRCA1, E2F1, FHIT, RUNX3, STK11, BCL2, CTNNB1). The median overall survival was 142 (45 years) (p<0.0001; HR [95%CI]: 0.33 [0.26-0.57]). Immunohistochemistry visualized a comparable expression of analyzed proteins. QPCR demonstrated in patients<=45 years a higher expression of genes that are associated with carcinogenesis (CTNNB1, STK11, CDKN2A, HGF, MET) as well as tumor suppressors that constitute an enhanced radio-sensitivity (ATM, BRCA1E2F1, FHIT). Derogation of the WNT-CTNNB1-STK11 and CDKN2A-HGF-MET pathway can constitute the carcinogenesis, while the higher expression of radio-sensitizers ATM, BRCA1E2F1 and FHIT can explain the better OS/DSS in young patients.