Anticancer Res. 2014 Nov;34(11):6495-503.

Protein and mRNA expression of notch pathway components in operable tumors of patients with laryngeal cancer.

Krikelis D[1], Kotoula V[2], Bobos M[3], Fountzilas E[4], Markou K[5], Karasmanis I[6], Angouridakis N[5], Vlachtsis K[5], Kalogeras KT[7], Nikolaou A[6], Fountzilas G[4].

Abstract

BACKGROUND:

There exist substantial evidence that laryngeal cancer represents a unique entity among squamous head and neck carcinomas.

MATERIALS AND METHODS:

Tumors from 289 patients with squamous cell laryngeal cancer were assessed for protein (immunohistochemistry) and mRNA (qRT-PCR) expression of Notch pathway components (Notch1 to 4 receptors and Jagged1 ligand) on tissue microarrays.

RESULTS:

In univariate analysis, enhanced nuclear Jagged1 expression conferred a longer disease-free survival (DFS) (p=0.013) and overall survival (OS) (p=0.004), in contrast to the unfavorable prognostic value of Notch3 for both DFS (p=0.009) and OS (p=0.024). In multivariate analysis, overexpression of either Notch or cytoplasmic Jagged1 conferred an unfavorable effect on DFS (Hazard Ratio=1.88, 95% Confidence Interval=1.03-3.43, p=0.04).

CONCLUSION:

Our study indicates a consistent unfavorable effect of Notch3 and cytoplasmic Jagged1 protein expression, a favorable impact of nuclear Jagged 1 localization, and a differential prognostic value of Notch2 expression according to the presence of cytoplasmic Jagged 1.