Epithelial-to-mesenchymal transition and neoangiogenesis in laryngeal squamous cell carcinoma

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Biological and clinical data have indicated that epithelial-mesenchymal transition (EMT) and angiogenesis contribute to tumour growth, invasion, and metastasis. EMT is the phenomenon in which epithelial cells transform into mesenchymal cells which is mainly characterised by the loss of intercellular adhesion, and an increase in cellular migration and mobility. This study aimed to evaluate the clinicopathologic significance of the combined immunohistochemical expression E-cadherin and CD105 in 85 (43 glottic and 42 supraglottic) previously untreated patients with laryngeal squamous cell carcinoma and to assess the correlation of their expression. A staining score of E-cadherin was given based on the percentage (0–100%) of cells stained. The rounded mean value of the positive-stained microvessels for CD105 counted in four hot spots was used as the final intratumoral microvessel density (MVD). MVD was significantly higher in patients with advanced T3–T4 category (p=0.020) and TNM stage (p=0.001). Nodal metastases were more frequent in the cases with low E-cadherin expression (p=0.012). A high MVD was an independent predictor of tumour recurrence (p=0.015). The log-rank test showed a significant difference in the disease-free interval in patients stratified according to MVD (p=0.034). Expression of CD105 could help predict patients with an increased risk of developing loco-regional recurrence after treatment. Reduction of E-cadherin is a potential predictor of lymph node metastases.

Key words: Laryngeal carcinoma, angiogenesis CD105, cell adhesion molecule, E-cadherin