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Overexpression and interactions of interleukin-١٠, transforming growth factor β, and vascular endothelial growth factor in esophageal squamous cell carcinoma

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View references (٤٢)

Abstract

Background: Sharing the role of immune suppression, interleukin-١٠ (IL-١٠), transforming growth factor β (TGF-β), and vascular endothelial growth factor (VEGF) are critical genes in several aspects of tumorigenesis. To elucidate the role of these cytokines in esophageal squamous cell carcinoma (ESCC), their relative mRNA expression in tumoral tissue compared with corresponding tumor-free tissue was evaluated. Methods: A total of ٤٩ patients with histologically confirmed ESCC were included in the study prior to any therapeutic interventions. Quantitative analysis of the mRNA expression was performed by real-time reverse transcription-polymerase chain reaction and the clinicopathologic associations were assessed. Results: The mRNA of IL-١٠, VEGF, and TGF-β was frequently overexpressed in ٥٣,٢٪, ٤٤,٩٪, and ٣٧,٥٪ of ESCC patients, respectively. TGF-β was significantly co-expressed with IL-١٠ and with VEGF. Although VEGF was not independently associated with increased tumor size (p = ٠,٠٦٥), concomitant overexpression of VEGF with TGF-β was significantly correlated with increased size of the tumor (p < ٠,٠٥). Conclusions: Overexpression of IL-١٠, TGF-β, and VEGF plays an important role in ESCC and consequently leads to the frequent event of immune evasion in ESCC. TGF-β is concomitantly overexpressed with IL-١٠ and with VEGF in ESCC. A stimulatory signal from TGF-β to VEGF is necessary for VEGF to promote tumor progression.

Indexed Keywords

EMTREE drug terms: interleukin ١٠; messenger RNA; transforming growth factor beta; vasculotropin

EMTREE medical terms: adult; aged; article; carcinogenesis; clinical article; controlled study; esophageal squamous cell carcinoma; female; gene overexpression; human; human tissue; immunosuppressive treatment; male; quantitative analysis; real time polymerase chain reaction; reverse transcription polymerase chain reaction; tumor growth; tumor volume

MeSH: Adult; Aged; Biopsy, Needle; Carcinoma, Squamous Cell; Chi-Square Distribution; Cohort Studies; Esophageal Neoplasms; Female; Humans; Immunohistochemistry; Interleukin-١٠; Male; Middle Aged; Probability; Prognosis; Reverse Transcriptase Polymerase Chain Reaction; Risk Assessment; RNA, Messenger; Sensitivity and Specificity; Statistics, Nonparametric; Survival Analysis; Transforming Growth Factor beta; Tumor Markers, Biological; Vascular Endothelial Growth Factor A
Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: vasculotropin, ١٢٧٤٦٤-٦٠-٢;Interleukin-١٠, ١٣٠٠٦٨-٢٧-٨; RNA, Messenger; Transforming Growth Factor beta; Tumor Markers, Biological; Vascular Endothelial Growth Factor A

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