

Detection of angiogenic growth factors in patients with precancerous and cancerous lesions of esophagus from high-risk area in Henan, China

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Abstract

AIM: Angiogenesis, the formation of new blood vessels, is regarded as an indispensable prerequisite for tumor growth. Tumor cells are considered to produce angiogenic factor(s), and in some cases these factors are secreted at high levels to be detected easily in the peripheral blood. Circulating angiogenic and proliferative cytokines may be markers of tumor aggressiveness and of metastatic potential. The present study was undertaken to better understand the impact of angiogenic growth factors in esophageal carcinogenesis.

METHODS: The serum level of vascular endothelial growth factor

(VEGF), basic fibroblast growth factor (FGF2), Interleukin-6 (IL-6) and HER-2 was determined with Elisa method. The blood samples were obtained from 263 cases with normal esophagus, 93 with basal cell hyperplasia, 19 with dysplasia and 103 with esophageal cancer.

RESULTS: VEGF, FGF2, and IL-6 were detected in 74.1%, 19.4% and 12.2% of normal subjects compared with 96.1% ($P < 0.01$), 94.6% ($P < 0.01$), and 86.5% ($P < 0.01$) of cancer patients. Though the mean VEGF values was lower in the cancer patients (234 vs 156 pg/mL, $P < 0.01$), the mean FGF2 and IL-6 were higher in cancer patients (12 and 60 pg/mL vs 7 and 3 pg/mL, $P < 0.01$ respectively). HER-2 was frequently detectable in the sera of cancer patients (98% normal vs 67.5% cancer, $P < 0.01$) but the average levels were similar (38.5 vs 34.0 Hne/mL). Patients with dysplastic and hyperplastic esophageal lesions had normal or low levels of all angiogenesis peptides.

CONCLUSION: The present findings suggest that serum FGF2 and IL-6 detectability may serve as a marker of esophageal carcinogenesis.

Key words: Esophageal neoplasms; Angiogenic growth factors; Precancerous condition

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