Expression and prognostic influence of NF-κB and EGFR in esophageal cancer

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ABSTRACT. The goal of this study was to investigate the expression profiles of nuclear factor-kappa B (NF-κB) and epidermal growth factor receptor (EGFR) in esophageal cancer and to determine their association with tumor prognosis. This study included 40 esophageal cancer patients [22 men and 18 women; average age = 62.7 ± 3.9 years; tumor-node-metastasis (TNM) staging: 12 patients with stage I, 13 patients with stage II, and 15 patients with stage III disease]. Tumor tissues and tumor-adjacent tissue specimens were collected during radical resections at our hospital. Immunohistochemical staining was used to examine these tissues for NF-κB and EGFR expression. Follow-up of all patients included gathering information such as the 3-year survival rate. We found that NF-κB and EGFR expression was significantly higher in tumor tissues compared to tumor-adjacent normal tissues. Expression was not related to gender or age, but was positively associated with the degree of tumor infiltration. NF-κB and EGFR expression levels gradually increased with higher TNM stage, but this difference was not significant. Follow-up results showed that
patients with higher NF-κB and EGFR levels had a lower survival rate and unfavorable prognosis. In conclusion, we found that NF-κB and EGFR expression was significantly elevated during the occurrence and development of esophageal carcinoma, and expression of these factors appears to be correlated with cancer progression. Higher expression of both genes is associated with an unfavorable prognosis.

**Key words:** Epidermal growth factor receptor; Esophageal carcinoma; Nuclear factor-kappa B; Tumor prognosis