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Detection of EGFR and COX-2 Expression by Immunohistochemical Method on a Tissue Microarray Section in Lung Cancer and Biological Significance

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摘要

Background and objective Epidermal growth factor receptor (EGFR) and cyclooxygenase-2 (COX-2), which can regulate growth, invasion and metastasis of tumor through relevant signaling pathway, have been detected in a variety of solid tumors. The aim of this study is to investigate the biological significance of EGFR and COX-2 expression in lung cancer and the relationship between them. Methods The expression of EGFR and COX-2 was detected in 89 primary lung cancer tissues, 12 premaliganant lesions, 12 lymph node metastases, and 10 normal lung tissues as the control by immunohistochemical method on a tissue microarray section. Results EGFR protein was detectable in 59.6%, 41.7%, and 66.7% of primary lung cancer tissues, premalignant lesions and lymph node metastases, respectively; COX-2 protein was detectable in 52.8%, 41.7%, and 66.7% of primary lung cancer tissues, premalignant lesions and lymph node metastases, respectively, which were significantly higher than those of the control ($P < 0.05$). The positive ratios and the levels of the expression of EGFR and COX-2 proteins were closely related to histological type, clinical stage and lymph node metastasis of lung cancer ($P < 0.05$), but not to histological grade, sex and age ($P > 0.05$). COX-2 expression was related to gross type ($P < 0.05$). A highly positive correlation was observed between EGFR and COX-2 expression ($P < 0.01$). Conclusion Overexpression of EGFR and COX-2 may play an important role in the tumorgenesis, progression and malignancy of lung cancer. Detection of EGFR and COX-2 expression might be helpful to diagnosis and prognosis of lung cancer .

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