tumour biology and pathology

THE CLINICAL AND PATHOLOGICAL SIGNIFICANCE OF CYCLOOXYGENASE-2 (COX-2) AND HUMAN ANTIGEN RECEPTOR (HuR) EXPRESSION IN NON SMALL CELL LUNG CANCERS

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Aim: Cyclooxygenase-2 (COX-2) is implicated in tumor proliferation, angiogenesis, tumor invasiveness, cell-mediated immunity and resistance to apoptosis. Hu-antigen R (HuR) is also considered to play a central role in tumor formation, growth and metastasis by binding to mRNAs encoding proteins such as COX-2. The present study aimed to evaluate the clinical significance of COX-2 and HuR protein expression in non-small cell lung cancers (NSCLC).

Methods: COX-2 and HuR expression was assessed immunohistochemically on tissue microarrays of 81 surgically resected NSCLC and was analyzed in relation with clinicopathological characteristics and patients’ survival.

Results: Enhanced COX-2 expression was significantly associated with the presence of lymphovascular invasion and increased tumor proliferative capacity (p=0.031 and p=0.023, respectively). Enhanced total HuR expression was significantly associated with tumour histopathological type and presence of lymph node metastases, as well as, with increased tumour proliferative capacity and poor patients’ outcome (p=0.039, p=0.017, p=0.033 and p=0.022, respectively). Concomitant elevated expression levels of HuR and COX-2 were significantly associated with tumour histopathological type and increased tumor proliferative capacity (p=0.002 and p=0.045, respectively). Enhanced total HuR expression was significantly associated with increased COX-2 expression (p=0.015).

Conclusions: The present study supported evidence that COX-2 and HuR may have a role in the malignant transformation and growth of NSCLC. Particularly, COX-2 and HuR could be considered as potential biomarkers indicating tumor aggressiveness. Nevertheless, more studies are needed to elucidate their clinical significance.

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