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Expression of the hepatocyte growth factor and c-Met in colon cancer: correlation with clinicopathological features and overall survival

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ABSTRACT

Aim and background. The hepatocyte growth factor (HGF)/c-Met signaling system has been implicated in the development and progression of colon cancer, but the relationship between the expression of HGF or c-MET and clinicopathologic features remains controversial. In the study, we analyzed the expression of HGF and c-Met in colon cancer and assessed the influence of the expression of this growth factor and its receptor on clinical and histological parameters and patient survival.

Methods and study design. We investigated the mRNA expression of HGF and c-Met with real-time PCR in 90 unselected colon carcinomas and the corresponding normal mucosa. Furthermore, HGF and c-Met protein expression was investigated with immunohistochemistry in all the samples.

Results. The mRNA and protein expression levels of HGF and c-Met were significantly higher in colon cancer than in matched normal mucosa. The protein level in most of the cases investigated was correlated with the mRNA level. Overexpression of HGF and c-Met, at both protein and mRNA levels, was correlated with depth of invasion, lymph node metastases and overall AJCC stage. According to univariate analysis, the mean survival time was shorter in the HGF-positive and c-Met-positive groups. Multivariate Cox analysis showed that high M stage and the expression of c-Met independently had a negative impact on overall survival.

Conclusions. The HGF/c-Met signaling pathway may be involved in the pathogenesis and progression of colon cancer. C-Met overexpression can be used as a useful parameter to evaluate the prognosis of colon cancer.

Key words: c-Met, colon cancer, expression, HGF, prognosis.

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