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**Associations of Factor XIII Activity with Cell-type and Stage of Non-small Cell Lung Cancer**

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**Introduction:** Factor (F) XIII is a thrombin-activated plasma transglutaminase zymogen, which has been reported to support tumor development and metastasis. The purpose of this study was to examine whether FXIII activity levels differed in non-small cell lung cancer (NSCLC) patients compared with healthy subjects, and differences in levels of FXIII activity between NSCLC cell types and stages.

**Methods:** Twenty eight NSCLC patients were enrolled; 13 adenocarcinoma, 11 squamous cell carcinoma, and 4 undifferentiated NSCLC; 7 stage I-IIIA, 11 stage IIIB, and 10 stage IV. Age, gender, body mass index and smoking status matched healthy subjects were selected from participants of The Korean Health and Genome Study. FXIII activity was measured using fluorescence based protein arrays. FXIII activity was expressed as Loewy unit per milliliter (Loewy U/mL).

**Results:** FXIII activity (mean±standard deviation) of the NSCLC group (30.9±21.2 Loewy U/mL) was significantly higher than that of the healthy group (18.6±8.0 Loewy U/mL) (p=0.007). In subgroup analysis, FXIII activities were significantly different among adenocarcinoma (23.2±13.8 Loewy U/mL), squamous cell carcinoma (32.9±18.6 Loewy U/mL), undifferentiated NSCLC (50.5±36.9 Loewy U/mL) and healthy group (p=0.007). FXIII activity, in the comparison according to the stage, were significantly different among stage I-IIIA (17.9±8.6 Loewy U/mL), stage IIIB-IV (35.3±22.5 Loewy U/mL) and healthy group (p=0.001).

**Conclusions:** FXIII might have a potential role in progression and metastasis of NSCLC.

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**Diagnostic Value and Prognostic Significance of Pleural C-reactive Protein in Lung Cancer with Malignant Pleural Effusions**

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C-reactive protein (CRP) has been implicated in various inflammatory and advanced malignant states. Increased serum CRP levels have been shown in associated with prognostic factor for survival in patients with advanced lung cancer. However, only few studies have focused on the role of CRP in pleural effusions. This study aimed to evaluate the diagnostic value of pleural survivin to discriminate lung cancer with MPE from benign effusion and its prognostic role in lung cancer patients with MPE. Pleural effusion samples were collected from patients with MPE (68 lung cancers; 12 extrathoracic tumors), and from 68 with various benign conditions. Concentrations of pleural (p) and serum (s) CRP were measured by ELISA. The expression profile of CRP in pleural fluid, and its association with survival were investigated. P-CRP levels correlated with s-CRP levels (p=0.0028). The area under the ROC curve (AUC) of p-CRP (0.86) to differentiate lung cancer with MPE from benign pleural effusion was greater than those of s-CRP (0.77). High p-CRP expression was significantly correlated with shorter overall survival (p=0.0001). In a multivariate Cox regression analysis, p-CRP was independent prognostic factor significantly associated with overall survival (p=0.0001). The relative risk of overall survival for lung cancer patients with high p-CRP was 3.909 (95% CI, 2.000–7.639). These results demonstrate that quantitative assay of CRP in pleural effusion might be useful complementary test both in diagnosis and prognosis for lung cancer patients with MPE.